


Reorientating social learning: an ethnographic exploration of metacognition and
critical discourse in farmer discussion groups

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ABSTRACT

This PhD project explored whether, how and why social learning was promoted through the peer-to-peer interactions of seven farmer discussion groups (FDGs) throughout South West England. Social learning theory provided the conceptual frame for the study, building on Bandura's original theory focused on cognitive development and self-regulation through interaction with one's environment (in the form of behaviour modelling by role models) to incorporate metacognitive outcomes through self-reflexivity. The role of the facilitator was also explored within the context of the groups. Conducted using an ethnographic methodology, participant observation was carried out at each group's monthly or quarterly meetings as well as semi-structured interviews with the five facilitators / coordinators and nineteen farmer participants (as well as familial partners in the business where possible). All FDGs were found to exhibit behaviour modelling in the course of their interactions and participant engagement in observational learning. This related to the element of role modelling, which was important throughout the groups as well in terms of who was modelling the behaviours and the impact that had on the observers' attention, motivation and self-efficacy to learn (cognitively process, retain and potentially produce the behaviour) from her or him. The extent to which the various groups' interactions promoted self-reflexivity by the participants differed, however, due to their varying engagement in critical discourse. That element was found to be highly influential in promoting metacognition, but its emergence was dependent on the different groups' ecologies for collaborative learning supporting those norms for interaction, highlighting nuances in trust amongst groups with strong bonding social capital. The facilitators of those learning processes were found to play a vital role in supporting the groups' ecologies to incorporate critical discourse, social learning and metacognition. The findings therefore suggest that certain elements should be present if collaborative learning processes intend to promote social learning.

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LIST OF ABBREVIATIONS

AHDB	Agriculture and Horticulture Development Board
AI	Artificial insemination
AIS	Agricultural Innovation System
AKIS	Agricultural Knowledge and Innovation System
BPS	Basic Payment Scheme
bTB	Bovine tuberculosis
CAP	Common Agricultural Policy of the European Union
CFP	Comparable farm profit report
CoP	Communities of practice
CRPR	Centre for Rural Policy Research
CSA	Community-supported agriculture
CSF	Catchment Sensitive Farming
Defra	Department of Environment, Food and Rural Affairs
ELMs	Environmental Land Management scheme
FAS	Farming Advice Service
FDGs	Farmer discussion groups
FWAG	Farming and Wildlife Advisory Group
GPS	Global positioning system
GWCT	Game and Wildlife Conservation Trust
KPI	Key performance indicator
LEAF	Linking Environment and Farming
NFU	National Farmers Union
NGO	Non-governmental organisation
NVQs	National Vocational Qualifications
OAD	Once-a-day milking
P2P	Peer-to-peer
SES	Social-ecological system
SOP	Standard operating procedure
TPB	Theory of Planned Behaviour
ZPD	Zone of proximal development

CHAPTER 1 – FARMERS HELPING FARMERS

“You’ve Got a Friend in Me”¹

“I’m also struggling with what to do with my silage clamp, so any suggestions on that would be much appreciated”. I sat amongst ten members from that farmer discussion group in the host member’s kitchen sipping a black coffee, a running joke amongst all of the dairy groups I attended. For no reason other than the fact that I like my coffee black, I always politely refused their fresh milk straight from the tank. I would shrug and claim my American-ness made me do it, revelling in the fact that I was ‘in’ enough for them to tease me. The host was running through the list of issues she wanted her fellow group members to keep an eye out for during the farm walk. The facilitator was in front of the flipchart in the corner, noting down the areas of concern.

A senior, well-respected member asked questions about her available machinery and the feeding routine to get more context for the decision. Another asked about what options she was considering. Basically, she had received a quote for putting up concrete walls and redoing the floor, which we saw later on the farm walk had major cracks and uneven patches. Whilst her cows were out on the grazing platform most of the year and not housed indoors, this less-than-optimal infrastructure made silage storage and removal that much harder for both the contractor and her hired labourers. She had consulted a family member about what to do and he had suggested the concrete option. Many members expressed doubts about that being the best option but wanted to see the clamp for themselves. We headed outside for the tour around the farm.

After admiring the new calf sheds, which the host gratefully acknowledged she had received significant help designing from one of the members in the group, we rounded the corner to the silage clamp. Wooden walls lined the pit, which looked old and worn, and short piles of silage were stacked to one side, shorn on the face from where the bucket had dug and grabbed chunks. Being early spring it was quite empty; first cuts of silage were not going to be happening for at least another few weeks. Now that the farmers could see the situation in front of them, the debate commenced.

Many members offered examples from their silage clamps. One argued that she could change the layout and place the silage against another wall. Another argued she could do like he had done and get large freestanding concrete slabs with wide bases and stack them next to each other to create walls as opposed to constructing new. Much cheaper and immediately available. “How would you keep those together”? “Just bolt ‘em together with metal, they’ll be fine”. In bringing up the question of cost, the members asked about the quote she had received and feigned mild horror at the tens of thousands of pounds she was thinking of parting with. “Nah, you don’t need all that. There’s a difference in quotes you get for indoor units and what they would see as a ‘proper silage pit’ versus what you actually need”, one of the members argued. “It doesn’t have to be solid cement”. Another farmer made the comment, “As spring calvers we don’t make much off the cows, so if you start spending then you won’t make a profit. Better to just get those slabs and fix the floor”. I listened intently to this exchange – in the span of about ten minutes and without any obvious benefit to themselves, her peers had just saved her a shedload of money.

¹ Newman, R. (1996). You’ve Got a Friend in Me [Recorded by Lyle Lovett and Randy Newman]. On *Toy Story* [CD]. Burbank, California: Walt Disney Records (12 Apr).

1.1 Introduction

This is a thesis about farmer discussion groups (FDGs). More precisely, it is a thesis about whether, how and why farmers learn from their peers in groups. A tool within the agricultural learning landscape, FDGs, put simply, involve a group of farmers coming together to talk about various technical, financial, ecological, social, etc. issues affecting their farms. They share the common aim of encouraging knowledge exchange to varying extents amongst farmers around their experiences, understanding, ideas, motivations, successes, concerns and challenges. It is these interactions amongst peers, materials and contexts that this thesis seeks to explore and (re)conceptualise not just from the perspective of learning (e.g., how and why new information is acquired and used, or existing information is employed in a different way), but also the relational dynamics at play within FDGs.

FDGs sit within the context of the wider UK Agricultural Knowledge and Innovation System (AKIS²) as one of the multitude of mechanisms, actors, institutions, etc. comprising that complex system of knowledge generation, transfer, use and promotion (Winter et al., 2000). Since their conception, FDGs have been framed positively as an effective method to enhance learning through farmer-to-farmer interaction as well as innovation uptake (Hennessy & Heanue, 2012; Koutsouris, 2012; Leeuwis, 2004; Goulet, 2013; Morgan, 2011; O’Kane et al., 2008). Thus, FDGs were and still are aimed at promoting learning of new information generated through both private and public sector agricultural research within the AKIS. Significantly though, they also draw on farmers’ tacit knowledge and direct experience as a valued form of educational material to inform other farmers’ thinking around a particular subject. Whilst other collaborative mechanisms within the AKIS engage farmers in learning from and with their peers, e.g., monitor farms, workshops and seminars, multi-stakeholder networks, demonstration farms, open days, etc. (Ingram et al., 2018), FDGs offer a unique example of farmer-led learning that has not been fully explored.

² For information on the evolution of Agricultural Innovation Systems (AIS) (Buller et al., 2019) as well as Agricultural Knowledge and *Information* Systems to Agricultural Knowledge and *Innovation* Systems (AKIS) in the UK and wider Europe, please see Knierim, A., & Prager, K. (2015). *Agricultural Knowledge and Information Systems in Europe: Weak or strong, fragmented or integrated?* PRO AKIS, European Commission 7th Framework Programme project. Available at https://proakis.hutton.ac.uk/sites/proakis.hutton.ac.uk/files/AKIS_characterisation_briefing_final.pdf. Accessed 14 Feb 2020.

The current understanding of FDGs primarily stems from studies aimed at either exploring how to optimise the functioning of the groups or to what extent learning has resulted from farmers' engagement with that type of knowledge exchange mechanism (Campbell, 1998; Millar & Curtis, 1999; O'Kane et al., 2008; Ingram, 2010; Morgan, 2011). Different components, such as leadership and organisation by a chairman or coordinator, capped attendance (ideally <20 people to prevent fractionation into smaller subconversations and/or inactive participation) and a facilitator, were found to positively contribute to member satisfaction and attendance (Winter et al., 2000; Coleman et al., 2010; Bogue, 2014; Prager & Creaney, 2017). Collaborative benefits that FDGs have been found to promote are information exchange, social interaction, sharing of experience and approaches, and problem-solving assistance and strategies; participants have also reported enhanced managerial skills and improved profitability as outcomes of their participation (O'Kane et al., 2008; Kilpatrick, 2000; Hennessy & Heanue, 2012; Hansen, 2015; Lobley et al., 2013).

Hennessy and Heanue (2012) provide a brief overview of FDGs' background in their study of the benefits to technology adoption and farm profit resulting from FDG membership. They discuss the rise of FDGs in New Zealand in the 50s as outlined by Parminter (2010), the 60s in Australia (Millar, 2010), and present use in Ireland as part of the national extension activities implemented by Teagasc (Ryan et al., 2009). Characteristics of Irish FDGs are outlined by Hennessy and Heanue (2012, p. 44), "each group consist[s] of 12-15 dairy farmers who [meet] as a group 8-10 times a year" and share a similar format where "farmers embark on a farm walk, share their experiences, assist each other in finding better solutions to problems and examine the outcome of decisions taken on the host farm". They point out, however, that "[m]ost discussion groups in Ireland are attached to a monitor or demonstration farm programme" (ibid.).

Extension programmes instrumental in utilising FDGs to purvey information within New Zealand and Australia's AKIS, e.g., the Red Meat Profit Partnership³ and Landcare⁴, adhere to a similar format, number of participants, and objective. Other studies about mechanisms that function like FDGs but simply vary in terminology (e.g., discussion clubs, farmer action groups, study

³ <https://www.rmpp.co.nz/>

⁴ <https://landcareaustralia.org.au/>

groups, etc.) also identified that groups may have different intentions and expectations in terms of their longevity, goals or objectives that affect their functioning (Vaarst et al., 2010; Prager & Thomson, 2014; Hansen, 2015; Morgans et al., 2021). For instance, many of these types of groups have been primarily targeted at accomplishing a certain policy objective or outcome, such as better forage production and drought resilience (O’Kane et al., 2008), to improve reduced tillage (Ingram, 2010), to reduce antimicrobial usage (Morgans et al., 2021), and to increase soil protection (Schneider et al., 2009). Thus, the term farmer discussion group as understood within the context of this study covers a range of different types of groups that vary by size, membership composition, topics and objectives, but the unifying factor is that FDGs all aim to foster learning through collective access to information and opportunity to engage with farming peers around the topic under consideration.

Despite this wealth of empirical evidence regarding the structural conditions, benefits and outcomes related to learning, insights into the inner workings of different types of FDGs and an understanding of how they effectuate learning from an adult cognitive learning theory perspective are lacking. Broadening the scope beyond FDGs, there has been ample research conducted over the years around how farmers learn most effectively, methods to promote learning and what that means in terms of targeted extension strategies (e.g., Mills et al., 2017; Kilelu et al., 2014; Dolinska & D’Aquino, 2016; Sewell et al., 2017; Fielke et al., 2018). Valuable insights have been amassed and integrated to inform education and extension approaches, but this study aims to contribute more knowledge around why learning collaboratively in group formats with and from their peers is effective. Do certain formats or styles of engagement enhance the learning process? How do farmers’ learning processes through engagement in these types of collaborative learning interventions incorporate higher-level cognition, and how might metacognition be built into them? This study aims to contribute to the knowledge and understanding around these questions and thereby build on, or more aptly, provide foundational knowledge to support the wider research concerning farmer learning and collaboration.

1.1.1 Research context

This study sits within the context of the broader paradigm shift that is occurring in the agricultural education and extension field. Over the past few

decades, with international development work paving the way and developed country agricultural systems being slower to adjust (Buller et al., 2019), farmer learning has begun to be understood as a process rather than a one-off event or objective. This has informed the perception of how education and extension interventions sit within the AKIS in relation to, and interact with, other actors, institutions and policies (Koutsouris, 2012), influencing and receiving feedback from these different sources. Additionally, increased understanding of how to effectively promote learning processes has encouraged farmer extension approaches to shift from a traditional top-down model of knowledge transfer to bottom-up approaches focussing on knowledge exchange amongst various types of stakeholders (Röling & Wagemaker, 2000; Ingram, 2010).

In essence, this paradigm moves away from viewing farmers as passive recipients of knowledge to instead engaging with them as proactive learners (Sewell et al., 2017; Klerkx et al., 2012; Leeuwis & Aarts, 2011). Many studies have shown that farmers seek out information from other farmers as it is perceived to be credible coming from someone who has actually used it in practice versus someone who has read the research and/or knows the theory behind how it is supposed to work (Ingram, 2010; Sligo & Massey, 2007). At similar scales and in similar contexts, seeing what has worked and having the farmer who implemented it explain how, why he or she thinks it worked, what in hindsight should have been done differently, amongst other insights have been found to enhance the method's legitimacy to the farmer-observer as well (Guijt & Proost, 2002; Ingram, 2010). The aim, therefore, becomes two-way knowledge exchange and capacity building for farmer empowerment as opposed to interventions designed to 'train' farmers, with little attention given to farmer agency within the process (Coutts et al., 2005; Spielman & Birner, 2008; Rivera, 2011; Benson & Jafry, 2013).

Thus, the enabling environment is shifting to facilitate collective engagement around innovative adaptations and transformative solutions to embracing change and enhancing farmers', farms' and farming's resilience (Klerkx et al., 2012; Buller et al., 2019). This study speaks to this shift and the literature around how farmers engage with peer-to-peer learning in order to increase their resilience and enhance innovation on-farm (Vaarst et al., 2007; Oreszczyn et al., 2010; Ingram, 2010; Hennessy & Heanue, 2012; Lobley et al.,

2013; van Dijk et al., 2017; Cofré-Bravo et al., 2019). However, in identifying these trends in good practice and the resulting outcomes we would like to see happen from collective farmer learning processes, e.g., change in thinking, practice, process, understanding, etc., we run the risk of ignoring the gap in understanding as to what leads to such results (Ingram et al., 2018). The challenge of this thesis is to contribute to a theoretically and empirically informed understanding of the development of not just cognitive skills but metacognition through farmers' engagement in a purposively social approach towards learning, conceptualising their lived experience through the lens of social learning theory.

1.1.2 Conceptual tensions

Social learning theory provides a theoretical basis for how cognitive development occurs through interaction between individuals. As will be further outlined in Chapter 3, social learning theory's origins lie in psychology, arising out of the shift away from the behaviourism tradition that understood human learning simply from a stimulus-response perspective (Skinner, 1953). Rather than humans behaving in a certain way due to a stimulus (reward) having conditioned them to do so, social learning theory shifted the scientific understanding around human learning to be through social interaction, observing modelled behaviours and thought processes, which stimulated cognitive processing and building competences to behave in a certain way (Bandura, 1977). This theory did not focus solely on the individual as the unit of analysis, analysing how their level of existing cognitive structures allowed for development of knowledge and skills as in the Piagetian tradition (Piaget, 1972). Instead, the entire basis of the theory as to how people learn lies in social interaction, or influence from one's environment, demonstrating (modelling) various ideas, processes and practices that shape the learner's understanding, cognition and behaviour.

Thus, interactions between individuals were already important in the early stages of the theory, but as it developed, Bandura renamed it social cognitive theory (1986). This signalled a move away from simply envisioning learning as observation of an individual's environment leading to reactive, imitative behaviour to instead involving simultaneous interaction between the individual, his/her environment and behaviour, resulting in cognitive processing and action (labelled triadic reciprocity) (Schunk, 2012; Giovazolias & Themeli, 2014; Sewell et al., 2017). Through social interaction and influence, the learner therefore enhances

his/her capacity to think critically, “reflecting on the possible consequences of certain behaviours and then deciding on the best action” (Giovazolias & Themeli, 2014, p. 74; see also Kaplan, Sallis, & Patterson, 1993). This social understanding of learning as the process of negotiating meanings and/or changes in understanding, values or behaviour as a result of one’s environmental influence necessarily involves more than just the individual (Falk & Kilpatrick, 2000). However, social learning theory is more complex than simply assuming that because people have come together, learning will automatically occur.

Many different fields of academic research have used social learning to explain collective change processes, such as information systems, organisational studies and media and communication studies (Jenkins, Hall & Raeside, 2018). Environmental management is another field, wherein learning interventions aim to foster adoption of best practice methods for natural resources management to address climate, disaster risk mitigation, sustainability, etc. (Rodela, 2011, 2014; Ison, Blackmore & Iaquinto, 2013; Tran & Rodela, 2019). These interventions are often carried out using participatory approaches that encourage collaboration amongst landscape-scale actors, leading to both changes in how people understand what methods should be employed as well as how they should work together at a larger scale (Rodela, 2011). Social learning has also been cited in connection with systems thinking (Blackmore, 2010), communities of practice (CoP) (Wenger, 1998) and multi-loop learning (Noguera-Méndez, Molera & Semitiel-García, 2016). In keeping with their various fields of inquiry, studies in these areas endeavoured to explain change – in how people think, why people think certain things, or how practice differs – as social learning that occurred through the process of people coming together around a common issue and sharing insights. Whilst Bandura (1977, 1986, 1997, 2001) was often referenced in relation to those social learning examples, they did not, however, explore from a cognitive learning perspective why the process of coming together and learning in that format led to those changes in thought, intention and practice. Thus, the elements of his cognitive learning theory have not been meaningfully engaged with in many instances.

Farmer discussion groups, more particularly the learning processes stimulated by this extension mechanism, have also not been rigorously examined. Empirical evidence shows that farmers will dedicate time and money

to participating in FDGs, thereby considering them to hold value for multiple reasons but particularly for learning, and they may even attribute on-farm changes to what they saw, heard or learned in FDGs (Millar & Curtis, 1999; Morgan, 2011; Koutsouris, 2012; Hennessy & Heanue, 2012; Prager & Creaney, 2017). Thus, this collaborative mechanism is understood to lead to learning, evidenced through changes in understanding, values and/or behaviour. How and why participation leads to such learning, however, requires a step back to understand how it is that peer-to-peer (P2P) interactions lead to acquisition, processing and utilisation of information and experiences from a cognitive learning perspective. Improving our level of understanding around these learning processes is important because then FDGs (and P2P learning interactions more generally) may be more effectively designed to promote such knowledge acquisition, processing and utilisation, thereby potentially allowing for desired outcomes to be achieved more effectively. The aim of this study, therefore, is to contribute to this foundational understanding by exploring whether FDGs cohere with the elements of social learning theory in practice and how those elements were promoted through their interactions.

Whilst aiming to engage with Bandura's social learning theory in a rigorous way as applied to FDGs, this study situates itself at the intersection of the above fields of inquiry around social learning within groups and draws upon them in developing the conceptual framework for understanding the empirical findings. As highlighted by Ison et al. (2013), continuity of terminology around social learning is a desirable objective, despite how one understands and applies the concept (cf., Reed et al., 2010). This may range from a processual understanding as to how to guide participatory processes to achieve change in behaviour, to an outcome-based understanding, through which individuals' changed behaviour following and/or attributable to a collaborative learning process suggests that social learning has occurred. It may involve a social understanding, in terms of knowledge acquisition and relationships within one's community, e.g., the CoP concept, or an internally reflective understanding wherein multi-loop attitude/value shifts are identified, meaning social learning is evidenced through a change in not just how but why people do what they do. In developing a metacognitive understanding of what is going on in these groups and how learning results, this study builds on this collection of explanations as to what,

how and why social learning is occurring and leading to various outcomes, changes, etc.

1.1.3 Research opportunity

This shifting approach towards knowledge, skills and capacity development in the current UK agricultural education and extension landscape is particularly important now because of Brexit. There is growing certainty as to what the future of agricultural policy will look like for England and all of the devolved nations. The *Agriculture Act 2020*⁵ was passed into law 11 November 2020, setting the framework for financial support, market regulation, trade, etc. Specifically, the Department of Environment, Food and Rural Affairs (Defra) has been tasked with designing the system for public investment in agriculture to replace the basic payment scheme under the Common Agricultural Policy (CAP), which will be phased out over the course of seven years from 2021. The former area-based payments will instead become a public money for public goods scheme under the Environmental Land Management scheme (ELMs) (Defra, 2018a; Kaminski, 2020). Thus, the conditions under which farmers have been operating are rapidly changing and the ability to absorb shocks, adapt and transform – not just survive but thrive – will be critical for farmers moving forward (Darnhofer et al., 2016; Darnhofer, 2014; Lobley et al., 2019). New practices, processes, ways of thinking about what it is that they are producing and how to reflexively assess whether what they are doing is not just correct, effective or efficient but ‘is it the right thing to be doing?’ are all highly relevant within the system change UK farmers will experience.

One certainty as to the future of UK agricultural policy as well is that the AKIS will continue to provide information, advice, knowledge and encouragement for innovation in various forms. In the policy updates put forth following the Health and Harmony consultation published in February 2018 (Defra, 2018b), conditions indicated as necessary in the design of the ELMs included a tiered, localised approach, involvement of on-the-ground stakeholders, multiple options for farmers to choose from and advice. Regarding the latter, Defra have indicated that collaborative forms of knowledge exchange are going to be a key focus for agricultural extension approaches moving forward, particularly “group advice and

⁵ *Agriculture Act 2020*, c. 21. Available at <https://www.legislation.gov.uk/ukpga/2020/21/contents/enacted>. Accessed 4 Jul 2021.

training” as well as “facilitation of peer to peer [sic] learning” (Defra, 2020, p. 11). Increased knowledge exchange between peers was indicated as a priority for enhanced resilience and professionalisation of the sector, but how this could best be achieved to facilitate learning was not addressed. The emphasis was rather on industry collation of evidence-based best practice into a hub for farmers, growers and advisors to reference in their interactions, creation of a professional body to consolidate the skills development and learning landscape within UK agriculture and driving forward farmers’ benchmarking and technology uptake (ibid.). This clear gap in how P2P learning should be supported and/or implemented to complement the changing UK agricultural policy offers an opportunity for this study to contribute knowledge as to how collaborative learning processes may effectively promote not just cognitive but metacognitive learning for broader scale change.

1.2 Research aims and strategy

1.2.1 Aims and objectives

This research project aims to explore P2P learning within FDGs using an ethnographic approach in order to develop a metacognitive understanding of how the learning process plays out in these groups. In particular, the process of cognitive development through social interaction will be explored, aiming to identify changes in awareness, understanding, reasoning, expression and actions, but also possible metacognitive development evidenced through statements and actions demonstrating ‘thinking about one’s thinking’. As will be explained in more detail in Chapter 3, the study was structured using this methodological approach due to the need to explore not just the dialogue and behaviours exhibited during the groups’ meetings, but also the deeper relational dynamics, patterns, histories, successes and challenges that interact to form the complex context out of which learning may be understood from a social learning theoretical perspective in each of the FDGs. Specifically, variations in dialogical norms, including differences in the groups’ understanding and expectation of how their interactions should incorporate challenge, debate, disagreement, etc. to promote learning amongst themselves, were important to explore within these contexts. The need to gather such insights into how each group functioned meant that other methodological approaches, such as feedback surveys, one-off

observations, interviews and/or focus groups, would not have provided sufficient data to gain a richer understanding of the context.

Beyond contributing to the empirical data touting the learning benefits, e.g., changed behaviour and mindset shifts, this study also aims to explore whether and how broader social benefits are derived from FDGs. These wider benefits may make the case for higher-level commitment to and strategic promotion of collaborative, P2P learning in FDGs. Possibilities to encourage farmers to engage with their learning processes differently and draw on each other's knowledge and experience for adaptation and improvements may be incredibly useful given the changing policy environment and new regulations, targets, financial mechanisms, environmental programmes, guidance, etc. that farmers will need to abide by. Social learning theory may therefore prove to be an effective conceptual frame for implementing interventions aimed at facilitating innovation and change on-farm. Through exploration of this study's empirical findings and data analysis as to whether metacognitive learning may be promoted within FDGs, this thesis will contribute to a richer body of evidence to either support or modify that assertion and subsequent approaches.

1.2.2 Research questions

In order to carry out this research examining whether social learning theory can offer insights into the learning process farmers undergo through their participation in FDGs, the following questions will be addressed in this research.

- 1) Is social learning occurring within FDGs, and if so, how and why?
- 2) Are there differences between types of FDGs with regard to promotion of social learning?
- 3) Can social learning processes be tailored through certain methods to promote higher-level cognitive and metacognitive learning outcomes?

1.2.3 Positionality

Having grown up in a farm family producing corn and soybeans on the flat plains of Iowa in the Midwest region of the US, some of my earliest memories were driving the gravel roads with my grandpa Toby 'checking crops'. We would stop at the local grain elevator of the farmers' cooperative where they always had a pot of coffee on the warmer in the lobby. I would receive a sweet to keep me quiet and he would gossip with fellow farmers about the fluctuating corn prices,

weather, rainfall, soil moisture levels, the neighbours' poor weed management or non-straight rows, amongst numerous other shared concerns. Being the local seed dealer for Pioneer Hybrid (a vital income stream during the 80s farm crisis that saved the family farm from the grim fate of many of our neighbours), my grandpa would plough a special test plot in the corner of one of our fields with rows of different varieties next to each other. Thus, he was often consulted as an authoritative source of knowledge by his friends and clients, and they often visited the test plot to see the number and size of the ears, stalk height and thickness, heat-tolerance, drought-resistance, pest resilience, etc. Seeing the differences between the varieties would help them select which seed to buy for the upcoming planting season.

Thus, it was completely normal to me that farmers share information with each other; but based on my past, I understood it to be an informal process that was highly contingent on a number of factors: friendship, familiarity, history, perception of stewardship, and very importantly, pride. When I encountered the concept of a formal FDG, specifically established to promote learning between farmers, I was shocked to discover that some groups share their figures. I remembered certain farmers back home being discussed because they were either strapped financially or doing well for themselves, but those conversations would have been based on varying levels of actual details from the source, rumour and conjecture. Never had I encountered farmers actively sharing their financial performance (not just profits but actual losses) with their 'competitors', let alone even their spouse or successor in some cases.

Initially, my research stemmed from a certain sense of curiosity as to how this foreign concept worked in practice, but ultimately, my positionality in relation to this project also incorporates my past work in education, agricultural law and agri-environmental policy. Coming from the perspective of having worked with farm families on succession issues and mediated farmer-creditor disputes, I have encountered the multifaceted economic, social and environmental issues that strain farm businesses and the stress, confusion and isolation felt by many confronting such issues. The opportunity to explore whether FDGs are an effective mechanism to provide support from a learning as well as social angle that may help people cope with, understand, address and/or avoid issues also provided a backdrop to the design of this study.

1.3 Research Contributions

Many studies speak to the benefits of learning and innovation processes that emphasise co-design and co-creation amongst diverse actors and networks (Koutsouris, 2012; Moschitz et al., 2015; King et al. 2019; Cofré-Bravo et al., 2019; Ingram et al., 2020). By bringing together people with different epistemologies and worldviews informed by their sociocultural contexts, including the symbols, language, norms and values of the culture in which they are embedded, new concepts and approaches may be constructed (Vygotsky, 1978). Certain structural factors may impact how the process functions and how the learning participants choose to communicate with one another around the topic of joint interest, such as ensuring an open and inclusive dialogue where participants feel their knowledge is valued. Facilitation is acknowledged as crucial within those spaces. This work does not refute or subjugate these studies and understandings but instead contributes to the wider debates within the agriculture education and extension community around how to not only engage on-the-ground actors in knowledge exchange and participatory processes, but also empower individual learners to shape the way they engage in acquiring and utilising knowledge.

By utilising an ethnographic approach, the study specifically aims to contribute rich, contextual understandings as to how different sociocultural understandings and structures feed into and play out in the context of FDGs and how they affect farmers' learning processes (Falk & Kilpatrick, 2000). Specifically, this study provides a narrative structure through which the nuanced, messy experiences of learning with one's peers can attempt to be understood. This is seen in the study's exploration of critical discourse amongst the participants, which involves debate and challenge of one's peers as a form of interactional norm, but which may vary drastically amongst different peer groups or be nuanced according to varying levels of trust, social capital and evolutionary development over time (Leeuwis, 2000; Wegerif, 2000; Cundhill, 2010; Leeuwis & Aarts, 2011; Beers et al., 2016). By exploring the intricacies of an engagement method aimed at fostering such peer-to-peer interaction, the hope is that these narratives will come alongside other research and inform how group learning interventions can be more effectively designed and implemented. Additionally, this storied set of experiences contributes complexities and contradictions to the

picture of how communication norms and facilitation factor into FDG participants' learning processes that call for, and will hopefully guide, further research.

1.4 Thesis outline

The remainder of this thesis is broken down according to the following chapters.

Chapter 2: sets the scene for the context out of which this project emerges, including an overview of policy challenges and objectives within UK agriculture and the AKIS landscape aiming to facilitate learning and change processes to equip farmers with the knowledge and skills to tackle them.

Chapter 3: discusses the literature surrounding farmer learning, collaborative approaches and communities of practice providing the background to the theoretical and conceptual framework used to guide this study. That discussion includes a deeper look into social learning theory and an overview of how the various elements are broken down and shape the context of the inquiry.

Chapter 4: outlines the methodological approach for the study, including the methods for carrying out empirical research and data collection as well as ethical and reflexivity considerations.

Chapter 5: provides a detailed overview of the qualitative sample of FDGs.

Chapter 6: presents the results of the participant observation and interviews aligned with the behavioural modelling element under the conceptual framework applied when researching the FDGs' interactions.

Chapter 7: includes data and analysis under the role modelling element of the conceptual framework.

Chapter 8: explores the data emerging from the empirical findings related to self-reflexivity demonstrated by the FDG participants.

Chapter 9: examines how social learning may be particularly promoted within FDGs through interaction amongst the participants that incorporates critical discourse.

Chapter 10: concludes the thesis with an overview of the results that contribute to an improved understanding of FDGs and potential ways that they can be

carried out more effectively to promote learning and foster change not just by, but with farmers.

CHAPTER 2 – SETTING THE SCENE

“Getting to Know You”⁶

The room was packed with women clad in gilets and brown leather dealer boots, characteristic farming attire I had become accustomed to in the UK. My mind wandered over this contrast with the States. A room full of farmers in work boots would be cowboy boots or steel-toe lace-ups instead of wellies and ankle boots, with hooded Carhardt sweatshirts also being a prominent staple. The start of the meeting brought me back to the room. As it was their initial meeting, the facilitator introduced herself and spoke about the purpose of the discussion group, highlighting the importance of sharing knowledge and insights so that everyone could learn and help improve each other’s operations. Additionally, she pointed to the support they could offer each other through simply having a place to air frustrations and concerns about stressors they were uniformly facing – weather, input prices, tight margins, milk contracts, TB testing and shutdowns, diseases and certification standards, as well as the contentious Brexit negotiations and internal strife within Theresa May’s government at the time. Lots of women nodded along to these assertions.

In order to help everyone get to know one another, next on the agenda was a quick icebreaker. We were to pair off, chat for a few minutes and introduce each other. I was a bit nervous as I figured nobody would want to be paired with ‘the researcher’, they would all surely want to meet fellow farmers to build their peer network. But luckily, a middle-aged woman had arrived late, and she happily chatted with me about where I come from, what my family farms, what my research involved, and about her family’s operation just down the road from the meeting location. The introductions then started round the room. There was a wonderful mix of experience, age, direct involvement in the operation and/or bookkeeping, owner/operator or hired labourer status. I listened as many women added their own personal reasons as to why they felt the group was important. A few recounted instances where they had felt like they couldn’t attend or contribute at the FDG their husband belonged to, again accompanied by many knowing nods from their peers. I listened as some spoke optimistically about what the group would add to their farming experience. Finally, the sequence of introductions made its way to us.

My partner hit the highlights from my background, amusingly mixing up Iowa with Ohio (a constant theme when asked where I’m from, as well as potatoes from Idaho!). It was my turn to introduce my partner, but it soon became clear that she was already known to many in the room as her family ran a very successful large dairy. What luck! In the next stage of my methodology, I would be conducting interviews with members of the different FDGs I was following. Anticipating that recruitment might be tricky due to farmers having little time on their hands, I had purposely planned to wait until I’d attended a few meetings and had some nice interactions before springing an interview request on people. So that icebreaker was a gift - having established a nice personal connection with her, I made a mental note to ask in a few months whether I could interview her and her partner.

⁶ Rodgers, R., & Hammerstein II, O. (1951). Getting to Know You. From *The King and I* Original Broadway Musical.

2.1 Introduction

As highlighted in Chapter 1, the paradigm shift from knowledge transfer *to* farmers to knowledge exchange *with* and *between* farmers provides the background for why collaborative, P2P learning has become increasingly more of a focus and objective of agricultural extension approaches (Koutsouris, 2012). It frames the interactions and knowledge flow within the Agricultural Knowledge and Innovation System (AKIS) (Prager & Thomson, 2014), which provides the learning landscape within which FDGs operate (discussed below). Given that the specific context of this study was South West England, however, it is important to note that the system structures framing the context of this thesis around knowledge provision and learning are part of England's AKIS. Distinguishing the specific context is necessary as the UK's devolved nations have taken different approaches to implementing agricultural policy (Winter, 1995; ADE Consultancy, 2009; Prager & Thomson, 2014). Additionally, as Curry and Winter (2000, p. 108) caution with regard to a systems approach toward learning, it may “obscure, rather than illuminate an understanding of knowledge and skills processes in society” in “fail[ing] to recognize that knowledge and skills processes are *social* processes and thereby knowledge acquisition itself has to be seen as a social phenomenon” (emphasis in the original). Thus, this study approaches the investigation of learning within this context through an actor-oriented approach as suggested by the authors, specifically exploring how agency and power relations within a certain mechanism for collaborative learning intersect and affect learning (ibid.).

It is also instructive to clarify the terms which will be used throughout this chapter and the entire thesis. As discussed in more detail below, the AKIS involves multiple actors from different sectors with different objectives contributing various types of knowledge and information into a large web of interactions. Thus, knowledge and information flow in many different directions for different purposes, such as selling inputs, promoting shorter supply chains, researching and developing biological and technological products, ensuring regulatory compliance, advertising value added, feeding into policy processes, in addition to learning (Defra, 2013; Curry et al., 2012; Hermans et al., 2015; Winter, 1997). In using the term ‘learning landscape’, the intention is to cover all of the various AKIS interactions wherein information and techniques are shared, and

the objective is for farmers to gain awareness and understanding, assess, and change their thinking, processes and/or practices. This includes agricultural education, which covers not just land-based college degrees, certificates and university courses, but also apprenticeships and formal short-courses offered by academic institutions, accredited training bodies, NGOs, etc. (Gasson, 1998; Bonner et al., 2017). More applicable to this study, agricultural extension is also included within the learning landscape, which includes programmes, services, events, seminars, workshops, amongst others that aim to conduct outreach and training for farmers on alternate management strategies, new technology and research, conservation methods, cost savings and value-added opportunities, etc. (Prager & Thomson, 2014). Advisory services provided through government programmes, membership organisations, levy bodies and charities make up this category as well as private consultancies, veterinary groups and sessions, demonstration events and farm walks hosted by organisations (ibid.). They are all part of the extension web through which farmer learning takes place, simply not in a formal classroom or instructional setting. FDGs may sit along the periphery of the extension web as initiated and/or driven by an organisation, company or consultancy, but they may also be independent of externally directed organisation and information provision, emphasising farmer-led, bottom-up learning interventions instead.

Another pair of terms which need clarification as to how they are used within the thesis are 'collective' and 'collaborative' in reference to learning interventions. In exploring the factors influencing farmer collaboration, Jarrett et al. (2015, p. 7) point to the similarities between the terms 'collaboration' and 'cooperation' in their emphasis on groups exhibiting "united labour" or "working together towards the same end, purpose, or effect". They discuss the bottom-up, proactive nature of collaborative action towards environmental land management initiatives in contrast to the often top-down nature of 'co-ordinated' actions. Literature around collaborative learning within agriculture will be discussed extensively in this chapter, but similarly, it indicates processes that involve active participation amongst different stakeholders to share, integrate and take up diverse knowledge (Restrepo et al., 2018; van Dijk et al., 2019; Tran & Rodela, 2019). Collective learning, however, is not used pervasively throughout the thesis as it is understood to apply to instances where groups of people may all be

attending to the same information but may not involve any collaboration or exchange between the learners for construction of knowledge and shared meanings (e.g., group presentations) (Steiner & Hanks, 2016; Buchheit et al., 2015; Rice et al., 2019). Thus, collective will be used in relation to learning interventions where there is an emphasis on coming together to share and learn 'new' ideas, but perhaps less focus on targeted engagement between stakeholders to integrate their different knowledge and co-produce shared understandings and ideas, which is how collaborative learning will be used.

Before delving into a deeper discussion in Chapter 3 on the research and understanding of farmer learning that feeds into (perhaps more intentionally in some instances than others) interventions within the learning landscape, this chapter will provide a look into the history of FDGs within England's AKIS. The policy environment surrounding the AKIS, which is being trialled and tested following Brexit, is discussed as well, including the overarching push for farmers to exhibit resilience in the face of inevitably changing conditions. It also looks into the large body of research surrounding how innovation has been evolving within the farmer learning landscape, contributing to building resilience through equipping farmers with the skills and tools to not just adapt to change but the ability to transform their operation. The progressive state of research on networks for co-design and innovation and the critical role of knowledge brokers or change agents in facilitating those processes is discussed as well. Research around systems transitions contributes to this understanding as to how learning within networks is an essential element for bringing about social change, rounding out the chapter to set the scene for where FDGs fit with regard to social learning.

2.2 Farming's learning landscape in England

2.2.1 FDGs' history and scope

As a learning tool generally bringing farmers in the same sector and location together to discuss technical and possibly financial issues, FDGs have long been present in the education and learning landscape of English agriculture. However, whilst FDGs have been explored from an outcomes-based perspective as to the benefits that may be gained by participants engaging in that type of collaborative learning mechanism, they are under-researched from a processual standpoint, e.g., how different groups function, interact, navigate social complexities, exert individual influence as well as collaborative negotiation, etc.

Dampney et al. (2001, p. 41) wrote in the 'Communication methods to persuade agricultural land managers to adopt practices that will benefit environmental protection and conservation management' (AgriComms) final project report to Defra, "In recent years more discussion groups have been established both to reach isolated farmers and in response to budgetary constraints. These groups are cost effective, but benefits may well be limited to progressive farmers and success is related to the sociological character of group members and enthusiasm of the co-ordinating adviser." Coleman et al. (2010, p. 11) also stated, "There are a great number of [farmer discussion groups] around England", though no estimate is provided. Thus, experts with general knowledge of the farmer learning landscape assert that these groups exist in significant numbers. Due to their often independent or organisational formation and fragmented participation by the farming population, however, a comprehensive record of the history, number, type, spread, and other categories of FDGs was not located throughout this research project. Therefore, information was collected through organisational histories, mass media articles and farmer and consultant interviews to piece together how FDGs came about and have proliferated as a method of intervention in England's learning landscape.

The British Grassland Society, for instance, was established in 1945, aimed at advancing the use and management of grasslands for the benefit of agriculture as well as the public, and promoting education and research for improved production and utilisation of grasslands (Powell & Carroll, 1985). Local and regional grassland societies then formed around the country starting in 1954, and today the Society's website states there are "50 groups actively meeting, with a total of over 4000 members"⁷. The Bude Grassland Society, for example, is one of ten grassland societies in the South West, holding meetings on a monthly basis that range from hosted farm walks to presentations, e.g., about environmental management programmes and infrastructure grant funding, to social events⁸. Another group that was started 50 years ago by an advisor (for the public agricultural advisory service at that time) was the Kirton Dairy Discussion Group. The group was initially formed to provide an independent outlet for dairy farmers

⁷ British Grassland Society, *A brief history of the British Grassland Society*, <https://www.britishgrassland.com/history/> (accessed 4 Jul 2021).

⁸ British Grassland Society, *Local Societies: South West*, <https://www.britishgrassland.com/south-west/> (accessed 4 Jul 2021).

to choose which issues they wanted to learn about by paying a fee to join rather than being funded by the Government or a company, bringing in speakers on different topics and offering a 'slightly social' atmosphere in which to do so. Half a century on and still thriving, it now involves a summer farm walk at its Chairman's farm, but throughout the year, evening meetings are held at various locations. Their meetings cover topics such as disease outbreaks, vaccinations and animal health, milk contracts and processing, as well as markets and lending conditions in the form of a dialogue between the farmers and 'expert' speakers, e.g., veterinarians, lenders and representatives from dairy processors. Influence from New Zealand consultants coming over to the UK and starting groups was another reason identified as to why FDGs have multiplied, particularly over the past 20 years. For instance, the NZ-headquartered genetics company LIC runs FDGs around England and the wider UK, which farmers can attend even if they do not use LIC's semen for artificially inseminating their herds.

A comprehensive number of existing FDGs at any one time is hard to quantify, however, since organisations will keep records of their sponsored FDGs, such as the Agriculture and Horticulture Development Board (AHDB) and LIC, but there is no central database where all those operating throughout the country are recorded. Additionally, any attempt at trying to determine what percentage of the farming population actively attends FDGs is difficult because if a farmer is in one, he or she may very likely attend multiple FDGs (as did many of the farmers I interacted with during fieldwork). Thus, simply quantifying the total overall attendance figures for FDGs would lead to an over-estimation of the percentage of the farming population as it would lead to double counting of the same attendee at different groups.

To further complicate quantifying FDGs' presence within the learning landscape, private benchmarking groups are hard to find due to their closed membership. They typically would not advertise their activities online (unless through members' private social media accounts), and they do not continuously search for new members to 'spread their reach'. Personal recommendation or word of mouth is often the manner through which people are invited to become members, but as identified from the literature around optimum size for FDGs to avoid fragmentation, they are purposely limited in their membership and often require consensus to allow new members to join. All of these factors make it

difficult to affirmatively locate all the different FDGs operating throughout the country.

Thus, I asked many farmers and consultants throughout the course of the project what they would estimate is the number of farmers involved in FDGs in England. The overwhelming amount that people estimated was 20%, which would be 36,000 of the farmers, business partners, directors and spouses (180,000) accounted for in 2019 (Defra, 2019). This number seemed quite high to me initially from what I saw as meetings were often attended by just the primary farmer for the operation and he or she was not accompanied by a spouse or partner. Nevertheless, sometimes they were. Additionally, some farms in the FDGs studied were run by multiple owner/operators, e.g., father/son, brothers, etc., so there may be more than one member from the 15 farms, for instance, that are in the group and regularly attend. Therefore, if an expansive view of membership is adopted to include all those who could attend (e.g., they are on the mailing list) or have attended at some point, it starts to look less inflated. Also, considering all forms of FDGs, from (semi-)public non-benchmarking to private benchmarking, <20 closed attendance to farm walks attended by >20 people, monitor farms to grassland societies, veterinary company-led to conservation organisation groups, etc., that estimate of 20% of farmers would suggest there are approximately 1,500 FDGs currently operating in England.

2.2.2 The AKIS

Thus, FDGs are a longstanding mechanism or tool used for engaging English farmers in learning, but they sit within a huge matrix of various actors, organisations, programmes, policies, methods, etc. known as the AKIS. Van Dijk et al. (2019) provide an overview of the gradual evolution over the years of the different system approaches towards farmer engagement, learning and innovation. There has been a notable shift in terminology to Agricultural Innovation Systems (AIS), which rejects the past systems' implication that knowledge is purveyed to passive recipients and moves towards not just increasing local stakeholders' capacity to innovate, building on their large amounts of experience and tacit knowledge, but enhancing the system's capacity to generate and respond to change (van Dijk et al., 2019; Buller et al., 2019). This has influenced the terminology at EU policy level to move towards Agricultural Knowledge and *Innovation* Systems, indicating a reframing of the assumptions

underpinning the system as well. The idea that research institutions and extension professionals are the knowledge ‘producers’ and farmers the knowledge ‘users’ thus becomes reorientated to a system wherein farmers are simultaneously knowledge holders and producers with valuable experience, insights and information to be learned from and to feed into the intended outcomes of improvement and innovation rather than simply ‘learning’ (Knierim & Prager, 2015; EU SCAR, 2013; Curry et al., 2012).

The UK, however, continues to use the Agricultural Knowledge and *Information* System term.⁹ Thus, Figure 1 is instructive as to the actors and interactions at play within AIS as well as AKIS, but with potentially different emphases on where (or who) ‘knowledge’ and information stem from, how they flow between actors and what the intended outcomes are within the system. In an effort to remain consistent with the case study context, therefore, AKIS will be the term utilised, but in full recognition of and support for UK actors, institutions, policies, companies, consultants and advisors, etc. that are shifting the focus towards knowledge exchange and learning processes for innovative outcomes embedded within AIS.

⁹ See Defra (2020, p.11) in reference to advisory services envisioned under the ELMs: “1:1 advice and support provided direct to land managers; group advice and training; telephone and online support; facilitation of peer to peer learning”. Additionally, p. 23 states that the ELMs will aim to “encourage a stronger culture of knowledge exchange, skills and continuing professional development” through a proposed evidence-based best practice hub, increased data and benchmarking and integration of the “learning and skills landscape” through the “introduc[tion] of a new professional body for agriculture and horticulture”.

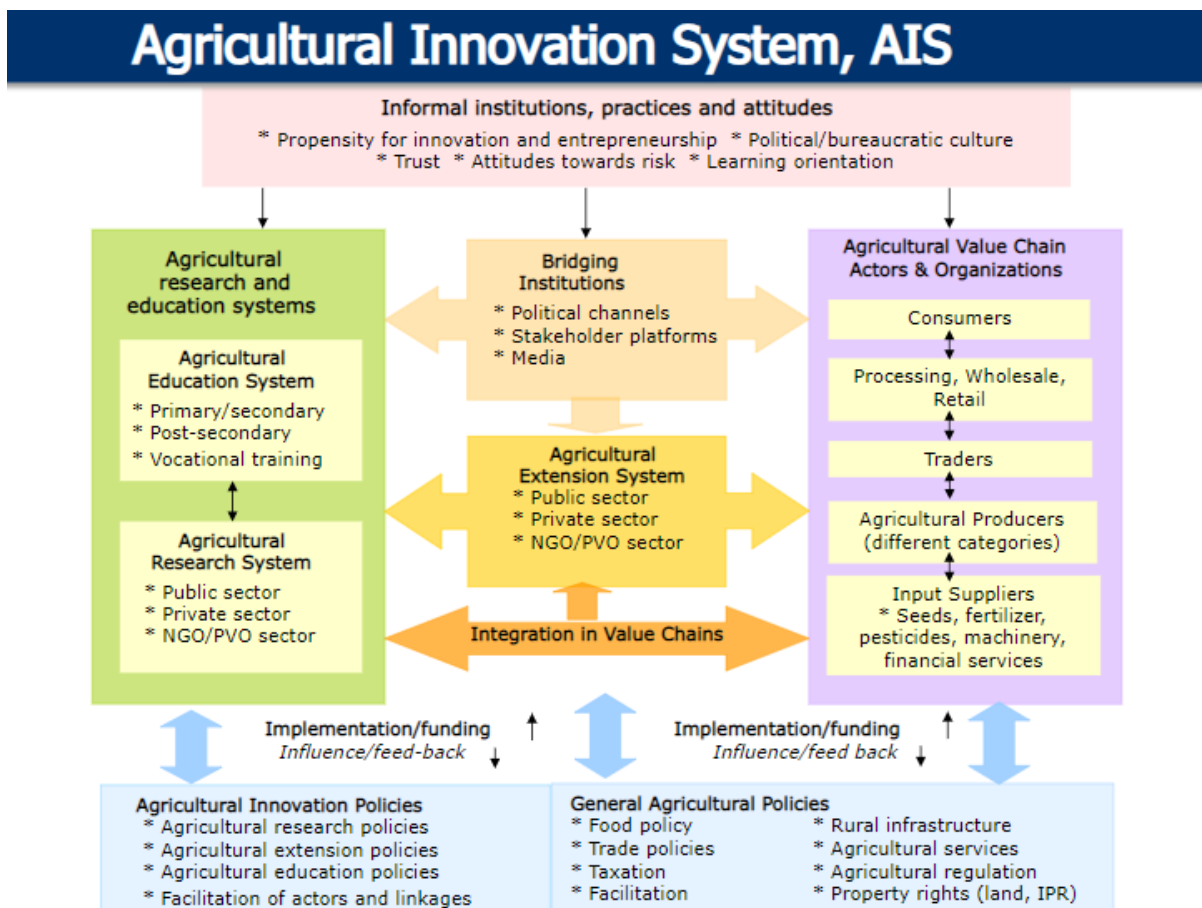


Figure 1. Bohn’s (2014) visualisation of the interactions within Agricultural Innovation Systems.

Specifically within the English AKIS, knowledge transfer of information and advice for change on farm moved from public provision through the Agricultural Development and Advisory Service (ADAS)¹⁰ to a predominantly privatised, in some cases publicly supplemented and subsidised, form of advice provision over two decades ago (Winter, 1996; Dampney et al., 2001). English farmers now must pay for one-to-one advice from an agricultural consultant, a qualified agronomist or a feed specialist from whom they buy inputs (Curry et al., 2012). Or they may access information from member organisations such as the National Farmers Union (NFU)¹¹, AHDB as a levy organisation for the promotion of farming¹², or they may qualify for free environmental advice due to their farm’s location within a high-risk ecological zone, e.g., Natural England’s Catchment Sensitive Farming (CSF) programme¹³, for instance. Figure 2 below provides a visualisation of the myriad actors and stakeholders within the large web of

¹⁰ <https://www.adas.uk/Services>

¹¹ <https://www.nfuonline.com/home/>

¹² <https://ahdb.org.uk/>

¹³ <https://www.gov.uk/guidance/catchment-sensitive-farming-reduce-agricultural-water-pollution>

different research, advisory, on-the-ground, governance, etc. bodies and programmes composing England's AKIS.

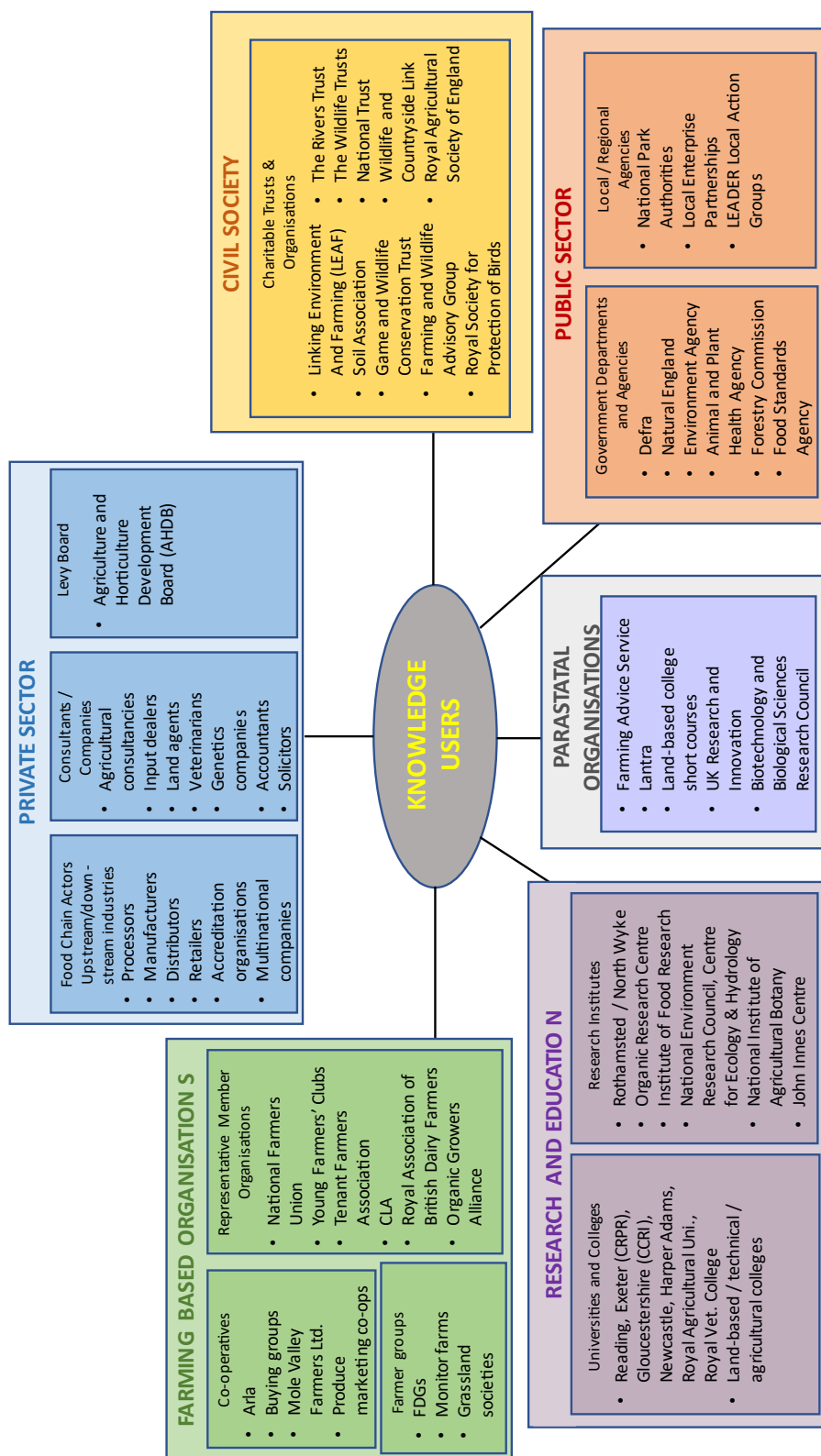


Figure 2. Overview of actors comprising the English AKIS. Adapted from Prager & Thomson (2014) and Curry et al. (2012).

In response to this shift towards what Curry et al. (2012) term the ‘laissez-faire’ AKIS, strategies to streamline information dissemination and knowledge transfer to more than one individual at a time have proliferated. Prager and Thomson (2014) point to group advisory services provided under the Farming Advice Service (FAS¹⁴) in England. Qualified, independent advisors from private consultancies and organisations fulfil this role, providing advice on statutory management requirements and good agricultural and environmental conditions that farmers must adhere to from a cross-compliance perspective under the CAP. Defra have devised a voucher payment system within this system that farmers may use to participate in such group learning activities. In the context of voluntary agri-environmental schemes, Lobley et al. (2013) found that group training around certain management prescriptions increased understanding not just of *how* implementation should be done but *why*. Crucially, they highlighted the importance of discussion amongst the participating farmers as peers rather than simply instruction from an expert (ibid.). The opportunity to discuss technical approaches, compare attitudes and build confidence in their abilities was found to be key to the uptake and implementation of higher-level conservation methods (ibid.). Thus, if used as a standalone method for advice provision and knowledge transfer without aiming to foster information sharing and discussion, Prager and Thomson (2014) argue that group training may not adequately serve individual farmers’ needs to address context-specific problems on-farm and present some accessibility issues for farmers to gain entry into groups.

Another example of collective knowledge transfer moving towards collaborative knowledge exchange is through various farmer-based organisations that run “farmers’ circles/groups” (Prager & Thomson, 2014, p.10). Within this categorisation, they include monitor farms (e.g., run by AHDB), environmental events (e.g., by CSF / LEAF¹⁵ / FWAG¹⁶ advisors), and “LEADER Local Action Groups (wider than farmers)”¹⁷ (ibid.). Curry et al. (2012) point to the rise of partnerships, networks and coalitions responding to the complexity of knowledge and information needed for the increasingly diverse issues farmers face as well

¹⁴ <https://www.gov.uk/government/groups/farming-advice-service>

¹⁵ <https://leafuk.org/>

¹⁶ <https://www.fwag.org.uk/about-fwag>

¹⁷ Defra (2017). *LEADER Local Action Groups in England – RDPE 2014-2020*. Available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/651345/leader-local-action-groups-2017.pdf. Accessed 21 Apr 2020.

as integrating the broad array of information available from a range of sources. Networks, in particular, were identified as increasingly “useful vehicles for learning in ... new areas”, such as environmental management (ibid., p. 246; Mills et al., 2011). As a type of network “triggered by more specialist interests... tak[ing] place on-farm [and] focusing on best practice” (Curry et al., 2012), FDGs may be considered a relatively small but significant set of players within the AKIS given their collective ability to impact over 36,000 farmers in England. As seen in Figure 2 above, they also have the unique feature of being a mechanism used by many different sectors of the AKIS. FDGs in their many different forms are utilised by the private sector (e.g., consultancies), public sector (e.g., Natural England Countryside Stewardship Facilitation Fund groups¹⁸), non-governmental organisations (e.g., farmer clusters through the Game and Wildlife Conservation Trust (GWCT)¹⁹) and farming based organisations (AHDB and cooperatives / buying groups²⁰). Thus, FDGs are uniquely spread throughout the AKIS, focusing on different topics and objectives based on how and why they were initiated, funded, structured, and run.

2.2.3 Enabling environment and context

The enabling environment surrounding the AKIS is in flux, however, due to the legal, policy, regulatory, trade, environment and social changes being debated and introduced into the English and wider UK agriculture sector. The United Kingdom’s referendum on exiting the European Union (commonly known and hereinafter referred to as Brexit) executed on 23 June 2016 presented an extreme shock to the system that UK farmers have been operating under for over 40 years (Lobley et al., 2019). Politically, the Common Agricultural Policy has formed the regulatory basis for Member States’ implementation of domestic farming programmes, aimed at ensuring the principle of free movement of goods within the EU through aligned levels of financial support and free trade (Cardwell, 2017). Now, a new domestic agricultural policy is under construction, with the *Agriculture Act 2020*²¹ serving as the foundation. Additionally, many other factors will influence the overarching framework for food production, processing,

¹⁸ <https://www.gov.uk/government/collections/countryside-stewardship-facilitation-funding>

¹⁹ <https://www.farmerclusters.com/facilitation-fund/>

²⁰ <http://southhamsdairycoop.co.uk/>

²¹ *Agriculture Act 2020*, c. 21. Available at <https://www.legislation.gov.uk/ukpga/2020/21/contents/enacted>. Accessed 4 Jul 2021.

transport, distribution and consumption, including the *European Union (Future Relationship) Act 2020*²² on exit terms and the continuing trade relationship with the EU, food safety regulatory cooperation, environmental obligations domestically and internationally, and other free trade agreements negotiated with foreign nations²³ (Millstone & Lang, 2018a; Lang, Millstone & Marsden, 2017; Cardwell & Smith, 2017; Davis et al., 2017; Baker & Swales, 2017).

The CAP single farm payments (in England implemented as the Basic Payment Scheme (BPS)), as the current system's form of subsidy support to landholders, has been extended by the Government until 2021, when a phase out will begin until 2027 to eliminate payments based on landholding size²⁴ (Defra, 2020). To replace the BPS, Defra is designing a new scheme based on the overarching concept of public money for public goods, in recognition of the benefits to society provided by agricultural land management carried out according to high environmental standards, including biodiversity and wildlife habitat, natural flood management, soil organic matter increase and carbon sequestration, aesthetic views and recreation (ibid.). Introduced as the Environmental Land Management schemes (ELMs), three schemes are being tested and trialled: 1) Sustainable Farming Incentive, 2) Local Nature Recovery, and 3) Landscape Recovery prior to scaling out to the wider farming and land management sectors (Defra & RPA, 2021). They will be delivered through agreements between Defra and the landowner / manager wherein environmental services will be agreed to be provided. Thus, in comparison to the BPS where a direct payment was received based on the amount of land owned, these schemes adhere to the reframing of public support for agriculture as compensation for public goods provided.

In light of these massive system changes, innovation and resilience have been touted as key components farm businesses need to exhibit moving forward in the face of changing policy, market, trade, etc. conditions brought about by

²² *European Union (Future Relationship) Act 2020*, c. 29. Available at <https://www.legislation.gov.uk/ukpga/2020/29/contents/enacted>. Accessed 4 Jul 2021.

²³ These will be heavily influenced by whom the UK decides to form free trade agreements with beyond the EU, as the regime they are exiting has some of the highest requirements for not only food safety but also animal welfare. See Millstone & Lang (2018b) for a discussion of the potential / likely implications for food safety standards in the UK if a free trade agreement is sought with the United States.

²⁴ The phase out will start with reductions of payments to the largest landowners receiving the largest basic payments first and work down to smaller landholders.

Brexit (House of Lords, 2016; BBSRC, 2017; HM Government, 2018a). The National Farmers Union (NFU), the largest farmer representative organisation in England and Wales, made productivity measures and business resilience one of three cornerstones of its post-Brexit vision (NFU, 2017), continuously stressing the catastrophic consequences to the food and farming industries from a ‘No Deal’ scenario throughout the Brexit negotiations (NFU, 2019). AHDB created a Brexit toolkit for farmers to evaluate post-Brexit impacts based on different trade and agreement scenarios, specifically including a resilience checklist to expose vulnerabilities in farm businesses as well as strategy development resources and encouragement to adopt a “mindset for change and innovation”.²⁵ At the 2020 Oxford Farming Conference, then Secretary of State Villiers’ speech “A vision for future farming” again stressed the Government’s commitment to reorientate prior CAP spending to “increase the resilience of farm businesses” (HM Government, 2020). Unhelpfully, however, what was meant by resilience in this changing context was often undefined and led to a number of questions as to how farm businesses would be supported in their process of building resilience and capacity to innovate.

2.3 Objectives of learning interventions under the AKIS

2.3.1 Resilience as a core objective

Back in 2018, then Secretary of State for Environment, Food and Rural Affairs Michael Gove emphasised the need for rural resilience and its worthiness for public support in his speech at the Oxford Farming Conference:

There are any number of smaller farm and rural businesses which help keep communities coherent and ensure the culture in agriculture is kept healthy. Whether it’s upland farmers in Wales or Cumbria, crofters in Scotland or small livestock farmers in Northern Ireland, we need to ensure support is there for those who keep rural life vital (HM Government, 2018b).

In extensively discussing the need “to adapt, evolve and embrace change”, Mr. Gove stressed that agriculture must cultivate its “resources, policies and people” (ibid., emphasis added). This suggests that resilience is understood to relate not only to the businesses’ capacity in some way but also to the people involved with running these businesses under changing conditions.

²⁵ <https://ahdb.org.uk/brexit-toolkit-mindset>

Resilience theory stems from significant research into physical systems' ability to absorb and recover from shocks to the system up to a tipping point, over which they will be pushed into the need to adapt and evolve (Holling, 1973). This concept was expanded to account for human influence within a system, or social-ecological system (SES), wherein human activity is heavily dependent upon but also has the capacity to heavily impact ecosystems' natural functioning (Gunderson & Holling, 2002; Adger, 2000; Davidson, 2010; MacKinnon & Derickson, 2013). An SES has been described as a complex cycle (or a panarchy) of resource use and interaction, interrupted in its functioning by slow-building stressors or sudden shocks to the system, leading to collapse of the status quo and 'release' of resources and 'reorganisation' into a different state of 'exploitation' and 'conservation' (Holling & Gunderson, 2002; Walker et al., 2004; Davidson, 2010; Folke et al., 2010). Distinct from natural adaptation by a physical system, a SES allows for human intervention that foresees potential disruption and thereby policy, economic and/or practice changes are implemented to avoid system collapse (Davidson, 2010; Barthel, Crumley, & Svedin, 2013). Alternatively, in response to a shock, resources can be purposively reallocated and a new system redesigned (Cote & Nightingale, 2012; Folke et al., 2010).

The concept of resilience has been applied to agroecological systems as well, analysing the interactions and impacts of multi-scale, multi-temporal and multi-domain factors. Darnhofer, Fairweather and Moller (2010) demonstrate how farms are impacted by interactions at various scales, e.g., farm level, local / regional, national and global, such as weather, markets, commodity prices, regulations, inputs, etc. Temporally, short-term versus long-term factors and impacts need to be considered, as well as the different domains of economic, environmental and social interactions that impact upon farm businesses' functioning (Darnhofer, 2010). From this complex web of interactions and potential areas where stressors and shocks may arise, Darnhofer (2014) points to the ability not just to 'bounce back' to the state the farm was operating in before but to 'bounce forward' by adapting to the new conditions through modified practices, processes or decisions or by transforming into a completely different state of operation (Davoudi, 2012; Scott, 2013).

This ability to transform capitalises on human agency within the system, namely the farmer's ability to identify emerging opportunities, thereby enabling

the farm business to continue beyond the shock or stressor (Darnhofer, 2014; Davoudi et al., 2013; Ashkenazy et al., 2018; Šūmane et al., 2018). If there is no willingness, capacity or skill to take those opportunities, however, but rather a staunch commitment to business-as-usual no matter if it is unviable under changing conditions, the farm business may fold and those resources would then be reallocated (van der Ploeg et al., 2006). Glover (2012, p. 357) points to the different elements of organisational resilience as cognitive resilience, or the decision makers' intention and "ability to 'notice, interpret, analyze, and formulate responses'" (quoting Dewald and Bowen, 2010, p. 199), and behavioural resilience, the act of "implementing the formulated response or intentions developed through cognitive resilience". Resilience is therefore not an inherent characteristic of a static, isolated farm business but rather an ongoing dynamic process, "strengthened or weakened through the interaction between farmer and farm, and between the farm and its context" (Darnhofer et al., 2010, p. 195; Darnhofer, 2014; Šūmane et al., 2018).

This idea that farm business resilience strongly relates to human agency and the farmer's cognitive resilience, or the willingness, capacity and skill to not just bounce back but bounce forward from shocks and stressors (or triggering events knocking the farm out of path dependency (Sutherland et al., 2012)) is instructive. "[H]ow a farmer perceives and conceptualizes the potentials and limits of his or her farm, the risks emanating from economic, social or ecological changes, and the options that he or she can employ to face them" will contextualise his/her decision making rather than an objective notion of a farming system under stress or at risk from a shock (Darnhofer et al., 2010, p. 193). This may include an integrated understanding and identification of the social context, e.g., strengths, people-place connections, values, beliefs, social networks, etc., and community resilience affected by various shocks and responses (Berkes & Ross, 2013; Rivera et al., 2018). Additionally, the ability to 'frame the system' and evaluate how change will potentially result in impacts as well as how to identify and weigh multiple response options based on their specific context is imperative (Scoones et al., 2007). But importantly, social factors at the farm level will impact its resilience, including the use of "all forms of knowledge;...active networks to support choice making and putting the choices into action; [and] a strong infrastructure around farming families for learning and support, exchange of

knowledge and promotion of access to resources” (Darnhofer et al., 2010, p. 195).

2.3.2 Innovation contributing to resilience

Thus, when faced with change, it may be the best decision, based on a full consideration of the various response options, to continue with the operation as before, or to bounce back. Darnhofer (2014) points to multiple studies from various countries analysing farms’ ability to cope with (often massive) system changes, e.g., UK dairy farmers hit by foot-and-mouth disease at the beginning of the century (Glover, 2012). However, an active assessment of what the new conditions may be and how the farm operations can or should continue on may highlight the need to bounce forward. Innovation processes may contribute to these assessments, aiming to not just cope with but thrive from change in the form of adapted practices and processes, or perhaps through a transformation to capitalise on an emerging opportunity or completely overhaul how the farm has been operating to continue under changed conditions. Innovation, however, also relates to the SES concept wherein human intervention may avoid collapse (Darnhofer et al., 2010). Innovation may provide a way for farm businesses to move the bar and lessen stressors or reduce the impact from system shocks – thus, a proactive approach rather than reactive (Rivera et al., 2018; Ashkenazy et al., 2018; Knickel et al., 2018).

Innovation is not confined to technological innovation as was previously, or perhaps may still be, the connotation for policy makers, companies, researchers and farmers, and does not fit a linear model of transfer from research to extension professional to farmer (Leeuwis, 2004; Knickel et al., 2009; Hermans et al., 2015). Innovation processes may very well involve a new piece of technology, but they may equally involve re-orientating processes, systems, management and labour, initiating or increasing collaboration amongst producers, or perhaps reintroducing previous techniques (Leeuwis & Aarts, 2011). In fact, Knickel et al. (2009, p. 133) argue that in response to ‘second order change’, which is more fundamental in challenging “widely shared assumptions” and “reframing agricultural and rural relations”, ‘second order’ innovation is needed. Second order innovation challenges shared assumptions and leads to the adoption of new paradigms and ‘rule-sets’ that generate the “needs, objectives, knowledge and heuristics that steer innovation processes” (ibid.).

Advances in innovation research have broadened the understanding of innovation processes to be based on “interactive design, co-evolution, [and] learning”, facilitating “new successful combination[s] of technological devices, modes of thinking and social organisation” (Leeuwis & Aarts, 2011, p. 23). Additionally, social conditions that influence adoption have shifted from external to integral components of innovations, and the process is understood to be “a collective process within nested networks of interdependent stakeholders” (ibid., p. 23). Unsurprisingly similar to the dynamic nature of resilience, innovation processes are viewed as dynamic and evolutionary, through which ‘best fitting’ innovations “involve adaptation to prevailing contextual conditions, but also the active influencing, redesign or destruction of pre-existing conditions and frameworks, respectively the ‘overthrowing’ of previously dominant ‘socio-technical regimes’” (ibid., p. 24). Thus, innovation processes may be conflictive in the sense that they may challenge the existing contextual conditions and frameworks surrounding the issue in need of change, but they are ultimately reliant upon network connections and dynamics that facilitate communication and learning to build towards change.

2.4 Networks for innovation and learning processes

Brunori et al. (2008) speak to this shifting perspective on innovation away from ‘linear’ and ‘exogenous’ to ‘systemic’ and ‘endogenous’, highlighting that innovation is fundamentally a learning process that facilitates change. This view of innovation as a systemic activity has emphasised networks as allowing for “acknowledgement and integration of various knowledge sources, types and processes, and learning modes” (Moschitz et al., 2015, p. 2; Klerkx et al., 2012). Emphasising the diversity of actors within various interacting networks as well as material and immaterial resource flows, Moschitz et al. (2015, p. 2) introduce the articles published from the SOLINSA (Agricultural Knowledge Systems in Transition: Towards a more effective and efficient support of Learning and Innovation Networks for Sustainable Agriculture) project²⁶ as re-examining the learning process, questioning “what is learning and how new knowledge is gained”. Importantly, Knickel et al. (2009, p. 139) stress that “innovation processes...function—and are increasingly conceptualized—as the outcome of

²⁶ <http://www.solinsa.org/>

collaborative networks where information is exchanged and learning processes happen”. Networks are thus considered to “advocate[] active social learning”, stemming from interaction and critical thinking about underlying assumptions, co-creating new meanings, developing practice and reconfiguring identities, thereby creating the space for innovation and change (Moschitz et al., 2015, p. 3; Dolinska & D’Aquino, 2016; Kilelu et al., 2014; Leeuwis & Aarts, 2011).

Advancing beyond previous conceptualisations of how knowledge is formulated, e.g., created ‘scientifically’ and fully formed prior to application, co-creation of knowledge builds on a constructivist foundation to understanding how multiple different actors interact, iteratively review and transform their thinking to co-produce innovations (Schneider et al., 2012). Research around farmer-led innovation highlights the benefits of processes that break down the historical hierarchy of knowledge holders and producers versus knowledge users or consumers (Aarts et al., 2007; Wiskerke & Roep, 2007). As Blackstock et al. (2007, p. 279) explain, network processes aimed at knowledge co-production are centred around “the co-generation of knowledge about socio-ecological systems drawing on multiple understandings in an ongoing collective dialogue to transform practice, where academics and stakeholders are all co-researchers”. Restrepo et al. (2018) build on this understanding with empirical findings from a collaborative learning process in Kenya, through which the farmers reported appreciation for inclusion in the research process (i.e., negotiating shared meanings and approaches to overcome common problems), exchange of knowledge and experience from peer-to-peer, and learning from practice (e.g., practical implementation of new knowledge and sharing results of experimentation). Integration of co-produced knowledge amongst various stakeholders allowed for sharing and information flow between networks, fostering the space for new beliefs, values, ideas, processes and practices to be engaged with and for learning and change to happen (ibid.).

But whilst the vital nature of diversity amongst knowledge sources and interactions between farmers and other stakeholders has been thoroughly demonstrated with regards to learning and innovation, Klerkx and Leeuwis (2009) caution against underestimating the value of peer networks. They cite the importance of peers as information sources and in entrepreneurial development, and different types of structured peer networks that have been autonomously

formed or policy-induced within the agricultural sector, e.g., farmer field schools, stable schools, discussion and study clubs, farmer groups (ibid.; Sligo et al., 2005; Bergevoet & Van Woerkum, 2006; Anandajayasekeram et al., 2007; Vaarst et al., 2007; Guijt & Proost, 2002). Bottom-up processes have been found to foster self-organised learning and innovation through farmers coming together to collaborate about problems they face, brainstorm potential solutions, identify gaps in their knowledge, information, skills, capacity, etc., work together to fill those gaps and equip themselves to implement effective solutions (van Dijk et al., 2019; Tran & Rodela, 2019; Darnhofer et al., 2010). This supports the idea that in order to “enhance institutional learning processes, as well as to strengthen farmer self-organization ... policies that support iterative, learning-based and participative stakeholder processes are needed” (Darnhofer et al., 2010, p. 221). Peer networks’ formation and effectiveness, however, can be negatively affected by being “based too much on strong local ties whereas, the present context of farming requires a continuous exploration of weak ties, that is, acquiring information from new sources and combining this with existing skills and routines” (Klerkx & Leeuwis, 2009, p. 82). To combat this along with other potential negative influences, Klerkx and Leeuwis (2009, p. 83) argue for network brokers “targeted at forming new peer networks that can address the integrated knowledge needs of farmers and empower them as critical clients” within the wider AKIS.

With regards to building resilience and innovation within the farming sector, Knickel et al. (2009, p. 134) highlight that it may not necessarily be limited by farmers’ lack of willingness to change but also by “insufficient capacities of innovation agencies and advisory services to effectively support changes”. Called innovation intermediaries or network brokers in relation to creating networks and building connections between diverse actors throughout the wider AKIS, roles such as these are important in facilitating co-design and co-innovation processes (Klerkx et al., 2010; Berthet et al., 2018; Klerkx & Leeuwis, 2009). Another way in which they have been referred to, however, is as ‘change agents’. As stated by Leeuwis and Aarts (2011, p. 29), “an important role of change agents is to change the potential for change, rather than to achieve a desired system state”. Communication plays a vital role in how change agents foster the space for change as well as how different actors re-order social relationships through

informal exchanges, establish shared understandings and build innovative solutions. Innovation and change processes therefore strongly integrate communication and learning through peer-to-peer informal exchanges as well as network building and coordinated interventions by change agents to challenge the existing system and “change the potential for change” (ibid.).

Tran and Rodela (2019), in their investigation of adaptive flood management in the Vietnamese Mekong Delta, explore learning interactions (which they label relational practices) amongst different actors from a social learning perspective. Their “conceptual framework assumes that collaborative activities foster relational practices within which learning interactions occur”, which create the opportunity for “learning-led transformative change” (ibid., p. 85). Similar to resilience theory, they consider learning processes to occur and interact at multiple levels, i.e., individual, group and community, but the “assumption at the outset is that social learning processes start with individuals (practitioners, farmers, community members, etc.) and ways they experience, reflect, and question current practices” (ibid.). Knickel et al. (2009, p. 140) also propose that networks promote “a specific type of learning—social learning—which affects shared cognitive frames and coordination in a network”. As will be discussed in the following chapter, Mezirow’s theory of transformative learning touches on how such individual processes may lead to fundamental change in perspective and practice but stops short of conceptualising group and/or network learning. This is where systems transitions research can add insights around the objectives or potential for systems innovation and change that may result through social learning processes amongst networks of actors aiming to examine, deconstruct and restructure system conditions and frameworks (van Mierlo et al., 2010).

2.5 Conclusion

This chapter outlined the context within which FDGs in England operate. Framed within a large, fragmented AKIS, FDGs have been utilised as an extension method to foster learning amongst peers, but their objectives and functioning may vary significantly due to the various different types of organisations forming and funding them, how they are led, etc. Farmers are also under pressure from policy, economic, environmental and social forces to

increase their resilience and innovate, processes to which learning has been found to be crucial. Based on this overview of the practical learning landscape in which FDGs are situated within the UK and some of the higher-level objectives towards which their learning processes may be contributing, the chapter then explored the conceptualisation of networks as to how different actors come together to build their resilience and innovate. Networks have the significant capacity to foster diverse knowledge exchange and connect actors to co-design and co-innovate. A significant body of research on the sociocultural complexities surrounding networks, however, speaks to the importance of enabling conditions and frameworks to facilitate learning and innovation within and between them. Social learning is often referred to as an objective of the process, but outcomes in the form of changed practices, processes and attitudes are highlighted as opposed to the learning process behind how and why knowledge acquisition, processing and utilisation may result (Reed et al., 2010). Thus, this study aims to contribute to this broader body of knowledge by narrowing the focus to explore whether and how FDG peer networks fostered social learning through their interactions. The following chapter will discuss the current understanding within the agriculture extension and education community as to how and why collaborative learning processes occur through farmers' peer networks, provide a more in-depth look at differing approaches towards social learning as a theoretical and methodological concept and outline the theoretical and conceptual framework for this study.

CHAPTER 3 – FRAMING THE RESEARCH

“One More Time”²⁷

“So what is it you’re actually doing here?” I had been asked this question probably 20 times before by different farmers over the course of the year. Typically, it was after two or three times of seeing my face at meetings. They would sidle up to me during the farm walk as we tromped through a pasture to look at the young stock or during lunch in the farmhouse of the host farmer. This time, it was in a pub on that FDG’s away trip whilst everyone stood around with their pints, gossiping about the weather and local suppliers and waiting for lunch to be served. Bearing in mind I had formally provided an overview description of my research topic at the first meeting I attended (and subsequently to any members who were not at the first meeting), all members of the FDGs had also signed informed consent forms agreeing that I could attend their meetings for the next year to study learning within their groups. Additionally, I had not just seen but interacted with this senior, respected farmer from the group for at least eight months by that point. What I soon realised, however, was no matter how conscientious I tried to be about presenting myself as a non-invasive, curious farming supporter with a simple remit to try to understand how they learned from each other, the participants only really listened when we connected on an individual basis.

I laughed and joked about some random American following them around all year, but then carefully explained again that I was interested in the process of how they learn from each other within the group. He gave me an inquisitive look, suggestive of “well duh, we talk to each other and want to learn, so it happens”. Afraid he might think I didn’t have anything more scientific behind what I was looking for, I continued on with a barebones version of social learning theory and the pillars of behaviour modelling, role modelling and self-reflexivity. He nodded politely, obviously not nearly as enthused by the prospect of his group’s interactions providing examples of metacognitive development as I was and asked whether I was finding out anything interesting at their meetings. Enthusiastically, I babbled on about their in-depth discussions where they challenged each other and how amazed I was that they share so much personal information. He sort of shrugged and said, “Well ya know, we’ve known each other for years, some of us, and been through a lot together. So the more we can help each other out and learn from each other, the better.”

3.1 Introduction

Large amounts of research have been conducted over the years as to how knowledge, agricultural innovations and best practices spread throughout the farming population. The objective of gaining such an understanding is to feed into (perhaps more intentionally in some instances than others) interventions within the learning landscape, improve the provision of information and determine which

²⁷ Daft Punk (2001). One More Time [Recorded by Daft Punk and Romanthony]. On *Discovery* [CD]. Paris, France: Virgin Records (26 Feb).

ideas, tools, structures and processes are more effective or result in higher rates of 'success' with regards to influencing participants' learning. As discussed in Chapter 2, learning and innovation diffusion throughout networks have been evidenced through numerous studies (Curry & Winter, 2000; Sligo et al., 2005, 2007; Cristóvão et al., 2009; Schneider et al., 2012; Keuper et al., 2013; Curry et al., 2012; van Dijk et al., 2019; Cofré-Bravo et al., 2019). Diversity amongst participants, valuation of different knowledge systems and experience, and the importance of communication between network actors, networks, and communication professionals have all been found to enhance learning (Hermans et al., 2015; Leeuwis & Aarts, 2011; Röling & Wagemaker, 2000; Klerkx et al., 2012). Narrowing the focus to peer networks aimed at learning, Burton et al. (2017) outline the long history of knowledge sharing through the mechanism of demonstration farms in the UK and wider Europe. Demonstration farms have been documented over the course of two centuries, during which the principles of demonstrating proven good practices and promoting innovation within the wider farming sector have remained consistent (*ibid.*). They point to the learning promoted by this mechanism and farmer participants' increased willingness to convert knowledge into behaviour change upon seeing its successful implementation by a peer and favourable outcomes (Burton et al., 2017; Heiniger et al., 2002; Tarnoczi & Berkes, 2010; Bellotti & Rochecouste, 2014).

As discussed in Chapter 1, farmer discussion groups are similar mechanisms in their promotion of peer-to-peer interaction and learning through, as may be presumed from the title, discussion. They differ, however, with respect to size—FDGs are typically limited either in membership or manageable attendance levels to prevent fragmentation of the discussion (Prager & Creaney, 2017). Demonstration farm events are advertised and open to all who would like to attend, view the farming techniques and learn (Ingram et al., 2018). Demonstration farms are often aimed at showcasing best practice and purveying new knowledge, innovations and/or the results of changed practices or processes that peers can relate to their farming contexts in assessing whether to adopt and/or adapt them (Cooreman et al., 2018). Whilst this aim is quite similar to FDGs', the host farm is not necessarily utilising or demonstrating industry-standard best practice. Additionally, the focus is on collective action, learning from each other's knowledge and experience in an effort to offer targeted

suggestions around unique challenges faced and support fellow members' as well as one's own improvement (Lankester, 2013; Mills et al., 2011; Nettle et al., 2006). Finally, the discussions conducted during demonstration farm events are significantly less cohesive as there may be over 100 people in attendance, with small conversations happening in addition to the presentation of technical information and key performance indicators (KPIs) by the organiser(s), experts and host and questions from the participants.

This chapter builds on the basic conclusion from group learning interventions or peer network exchanges intended to foster learning that 'learning' happens. The conclusion that it does may be based on observed change in practice, expressed intention to change based on what has been learned, people saying they have acquired new knowledge and 'correctly' utilising it where before there was a gap in information and/or understanding, claimed shifts in perception, etc. (Mills et al., 2017; Sewell et al., 2017; Ingram et al., 2018). Nevertheless, *how* and *why* engaging in group interventions aimed at fostering P2P learning, FDGs in particular, leads to not just cognitive but metacognitive development for those purposefully engaging in those learning processes is far less understood. This chapter sets forth the theoretical and conceptual framework upon which this study is built, beginning by exploring the extensive literature around farmer learning to highlight the state of the art upon which this study builds. Particularly, it details the body of research around context, form and method that may impact the learning process, involving both transformational and experiential learning theory perspectives. Following this, the core theoretical basis for the inquiry, social learning theory, is then extensively outlined, stemming from the seminal works of Albert Bandura and evolving in its interpretation and application by many different fields. A conceptual frame for the study follows, establishing three key elements for exploration within FDGs: behaviour modelling, role modelling and self-reflexivity, as well as the role of the facilitator in fostering social learning.

3.2 Background on farmer learning

Studies investigating how, what, why, where, when and from whom farmers learn are numerous. A distinction emerges at the outset though which must be highlighted. Much literature is focussed on farmer decision-making and how to influence behaviour change through learning, including uptake of

innovations, alternate management practices, etc. (Mills et al., 2017; Inman et al., 2018; Hyland et al., 2018; Lobley et al., 2013). Rose et al. (2018) point to these studies but also the lack of consolidation of lessons learnt from them about how to influence farmer decision-making behaviour, which they attempt to do as well as drawing on literature from outside the agricultural field to make recommendations on intervention design and delivery.

The Peer-to-Peer Learning: Accessing Innovation through Demonstration (PLAID) project also outlines multiple different theories that provide relevant insights into how demonstration projects promote behaviour change by farmers (Burton et al., 2017). The conceptual framework references economic, attitude, persuasion, cultural and social theories, including the Theory of Planned Behaviour (TPB) as an attitudinal theory, the Elaboration Likelihood Model as a persuasion theory, and the 'farming styles' approach and 'good farmer' identity as cultural theories. Considering the TPB, for instance, as "one of the most important behavioural theories in social psychology" (ibid., p. 20; Manstead, 2011), it endeavours to explain how the intention to behave is cognitively formulated and then is translated into actual behaviour—or *why* behaviours occur (Burton et al., 2017). It explores actors' beliefs behind the formation of an intention to act, including beliefs influencing their attitude towards the behaviour, beliefs about subjective norms (what others would think) influencing motivation to comply, and their beliefs about control and power influencing their perceived behavioural control (Bailey et al., 2006; Garforth et al., 2006).

What these studies point out about behaviour theories is that they are separate and distinct from learning theories. Learning undoubtedly happens throughout the behaviour change process, such as the triggering change model developed by Sutherland et al. (2012) where farmers decide whether, how and why to make a change (cognitive processing) and learn from the process of implementation, monitoring performance and effectiveness, adaptation, etc. Additionally, there are conceptual overlaps in terms of exploring how a person's values, attitudes, beliefs, motivations, etc. affect the learning and/or behaviour change process, reflecting the cultural turn in social science inquiry into the agricultural sector (Morris & Evans, 2004; Carolan, 2016; Mills et al., 2017). But the frame of inquiry is slightly different. Behaviour theories, as pointed out above, seek to explore how and why change in behaviour may be brought about,

whereas learning theories seek to explore how and why learning, or change in cognitive processing, may be brought about. The result may be the same—that behaviour changes—but the starting point for investigation is different. This study is about farmer learning within FDGs; thus, whilst literature exploring behaviour change provides important insights into how cognitive development can be built upon to influence change, farmer learning will be the overriding focus of this study.

3.2.1 Context is critical

Farmer learning has been investigated extensively, as highlighted by Ingram et al. (2018), but less so in the case of demonstration farms, which they explore in the EU Horizon 2020 AgriDemo-F2F project (hereinafter AgriDemo). This applies to FDGs as well. Starting with AgriDemo's definition of learning—"the process of acquiring knowledge or skills through study, experience, or being taught"—they point to the existing understanding of elements which contribute to the learning process and knowledge acquisition in farming (ibid., p. 31; citing Prager & Creaney, 2017). Firstly, the understanding of farming as a social activity positioned within a cultural, political, organisational and historical context is critically important with regards to farmers' consideration of alternate natural resource management approaches and new information (Vanclay, 2004). As highlighted above, the sociological turn in agriculture requires acknowledgement and embeddedness of the fact that learning involves a multitude of factors, people, capacities, motivations, etc., whereby information, practices, innovations and the like will be "evaluated against other information, knowledge and beliefs held by each individual" (ibid., p. 216).

Ingram et al. (2018) point to Giddens' structuration theory and the role of enabling structures in the learning process. The reflexive relationship between actors being conditioned by their institutional environment and their ability to adapt and change it relates to individuals' transformative capacity and agency (Giddens, 1984). Long (1989, p. 10), however, states that agency "is composed of social relations and can only become effective through them". Therefore, we know that an individual's learning does not take place in a bubble—context and interaction with one's environment matter (see Wenger, 1998; Coudel et al., 2011). Framed by Leeuwis et al. (1990, p. 26) as an actor's life-world, we see that "various forms of social knowledge, intentions and evaluative modes, and

types of discourse and social action” contribute to how one frames or orders their world. “Such life-worlds are the products of past experiences and personal and shared understandings, and are continuously reshaped by new encounters with people and things” (ibid.).

Lankester (2013, p. 185) similarly emphasises the nature of individual learning as “situated in a specific social and cultural context and is influenced by the norms and values of the surrounding culture and associated power relations”. Specifically in reference to the beef producers studied in north-eastern Australia, their cultural context was “dominated by production values” with geographical limitations in terms of opportunities to interact with peers and engage with different discourses and networks (ibid., p. 191). Additionally, the study found that the production-dominated culture that formed the basis for producers’ self-identify and livelihood was difficult to question in terms of assumptions that may have impeded change around sustainable management practices. Hence, the context and content of the information being purveyed / received, actors’ life-worlds and the sociocultural context within which farmers interact impact the learning process. But how does the literature around farmer learning understand what is going on internally with regards to individual learning?

3.2.2 Forms of learning

With regard to what is learned, Ingram et al. (2018) highlight that learning processes may require different forms of learning in order to achieve the objectives and effectively lead to cognitive development and acquisition of knowledge or skills. Incremental learning, or what is conceptualised as single-loop learning, may occur in situations in which new information on what or how to do something better would lead to a change in practice, skill or capability (Argyris & Schön, 1996; Knowles et al., 1998). Thus, individuals and their environment still operate in accordance with the pre-existing frame of thought or rules of the game in making changes. If learning is viewed from the perspective of enhancing capacity to learn, such as “improving analytical skills, critical thinking, the ability to make better decisions”, this has been found to contribute to double-loop learning whereby the values, assumptions, intentions and processes underlying thought and behaviour patterns are challenged (Ingram et al., 2018, p. 33). Also termed ‘reframing’, the learner does not simply question whether things have been done right but whether the rules of the game *are* right

(Coudel et al., 2011; Medema et al., 2014). On both an individual and group level, these reflections and shifts have been found to be furthered through collaborative exchange and dialogue (Percy, 2005; Duveskog et al., 2011; Waddington et al., 2014).

Engaging participants in incremental learning as well as building capacity to undertake more complex learning and reframing is important to the learning process. Different learning objectives and change capacities, e.g., practice modification, innovation adoption, implementing an agri-environmental practice new to the operation, will require different forms of learning (Rogers, 2003). Lankester (2013, p. 183) utilised a conceptual framework incorporating different adult learning theories attempting “to capture the how, why and what of individual learning in social learning” and emphasising that learning is a “continual and integrated psychological and social process of knowledge creation rather than a fixed process focused on outcomes”. This ties in with the perspective on education and learning where the learner is not simply an empty vessel to be ‘filled’ with knowledge but an active participant in the exploratory, cognitive development process (Freire, 1972; Biesta, 2013). As pointed to in Chapter 2 as well, this reaffirms the constructivist theoretical approach underpinning this study that understands collaborative learning processes to engage participants in shared meaning making through communicative action.

Additionally, capacity building has been found to contribute to farmers’ empowerment, “strengthen[ing] confidence and farmers’ self-reliance, build[ing] community conscience, activat[ing] social life, and build[ing] social capital” (Ingram et al., 2018, p. 33). Building individuals’ and groups’ capacity may allow for triple-loop learning or collective challenge and reshaping of the structures that frame their environment for decision making, whereby reflection and ‘learning to learn’ result in “deep-seated shifts in perspective” (Ingram et al., 2018, p. 33; Lankester, 2013; King & Jiggins, 2002). Mezirow’s (1991) theory of transformative learning has been extremely influential within the adult learning field with regard to these types of fundamental changes to an individual’s frame of reference, which “includes a habitual set of expectations, beliefs or assumptions based on past experiences that structure our points of view and how we respond to and interpret new experiences” (Lankester, 2013, p. 185). Following decades of research and development of the theory, Mezirow (2018)

describes transformative learning as founded on Habermas' (1991) explanation of learning occurring in different domains. Instrumental learning takes place when individuals are faced with task-oriented problem solving for which new skills and technical information need to be obtained through observation (Mezirow, 2018). Communicative learning involves the process of attempting to understand others' meanings informed through their values, beliefs, attitudes and intentions as well as make oneself understood (ibid.). These first two domains often happen simultaneously as instrumental learning may depend on communicative learning, but the third domain of emancipatory learning is much less frequent and is often transformative (Lankester, 2013; Lipp, 2014). Occurring in response to a crisis or emotionally charged incident ('disorienting dilemma') challenging one's frame of reference (Mezirow, 2000), an individual undergoes "evidential (instrumental) and dialogical (communicative) reasoning...involving the validation and reformulation of meaning structures" (Mezirow, 2018, p. 117).

This 'premise reflection' about "why we perceive, think, feel, or act as we do" is what may lead to perspective transformation (Mezirow, 1991, p. 108), though there is a significant body of critical work around transformative learning arguing for 'beyond rational' or a more holistic incorporation of emotions, relationships, culture, spirit and aesthetics alongside this critical (meta)cognitive assessment (Merriam & Berriema, 2014). Additionally, Newman (2012, p. 49) criticises the overuse of transformative learning as having become "all things to all people", declaring the theory to be "unsubstantiated, ambiguous, and unwieldy" (Merriam & Berriema, 2014, p. 96). Not all reflective learning will result in transformation; however, building learners' capacity to engage in deeper reflection about their assumptions and biases has the potential to empower and emancipate, as discussed below (Merriam & Berriema, 2014). Due to these fundamentally altering experiences though, Taylor (2009, p. 14) cautions against "fostering transformative learning...naively or without forethought or planning. It often requires intentional action, personal risk, a genuine concern for the learners' betterment, and the ability to draw on a variety of methods and techniques that help create a [learning] environment that supports personal growth and, for others, social change". Thus, from a processual standpoint, creating spaces and structuring interventions so that transformative learning may occur is not mutually

exclusive of and is beneficial to other forms of non-transformative, yet still important learning.

Experiential learning is another learning theory used widely within the agricultural education and extension field to try to understand how farmers learn. Kolb's (1984) learning cycle is depicted as the process of translating concrete experience into abstract conceptualisation through reflection and then the abstract is used in different active experimentations. Educational and psychological research has criticised this conceptualisation of the learning process for failing to account for the social interaction through which these elements of learning take place (Jarvis, 2018; Illeris, 2002), and from a sociological standpoint, it has also drawn criticism for the lack of attention to the sociocultural context within which learning takes place and the reciprocal interaction between individuals and their environments (Lankester, 2013). Nevertheless, as Lankester (2013) points to, despite presenting a somewhat prescriptive view of the learning process as a cycle that in reality may not happen in such a sequence, the individual elements of the cycle are part of the process influencing cognitive change or learning through experience. Particularly, it highlights the critical role of reflection.

3.2.3 Methods for stimulating learning

Thus, learning is contextually dependent for individuals and their internal processes of cognitive development around new ideas or patterns of thinking, shifts in values or attitudes and changes in the way that thinking manifests as practice or behaviour are all part of the learning process. This leads to the question: how has the literature around farming learning identified that these learning processes are stimulated?

Sutherland et al. (2012) specifically point to the need to understand change processes so education and extension knowledge can target farmers with learning to build their capacity for transformative change, which they warn can be inhibited by knowledge and cultural lock-in within farming systems. Leeuwis (2004) provides a comprehensive overview as to how the elements of knowledge and perception factor into farmers' and wider stakeholders' learning and innovation processes. "[P]erceptions and beliefs relating to the functioning of the biophysical and social world, including also the causal processes involved, are usually referred to as 'knowledge'", which he points out are important to

understand as they greatly influence human action and change processes (ibid., p. 94). Drawing on Giddens (1984), Leeuwis (2004) explains that actors' knowledge or mental schemes of interpretation are discursive or explicit, or they are practical or implicit (otherwise referred to as tacit knowledge), which act as 'reservoirs' of schemes learners can draw on in giving meaning to the world around them. Particularly, discursive knowledge is described as just the tip of the iceberg in terms of the knowledge one possesses. Exposure to "differential and at times contradictory perceptions, arguments and knowledge claims tend to play a role in processes of change" as learners navigate different ways of understanding and giving meaning to the world around them (ibid., p. 94). Therefore, in trying to understand how change agents can more effectively structure communication interventions to support multi-faceted change and innovation design processes, this conceptualisation of knowledge and perceptions as being negotiated through interactions with the learner's social network and context is critical (ibid.).

In terms of interaction with one's environment and how one's life-world influences perception and learning, Kilpatrick and Johns (2003) presented an analysis of findings from a study around learning sources accessed by various compositions of farm management teams in making decisions about change. Farms in different 'learning patterns' varied widely in the number and range of sources consulted, from one local expert or farmer to multiple different trainings, media, experts, agricultural organisations, field days, etc., which was found to relate to the types of changes being made (tactical/technical, record keeping, new enterprise or other strategic decision), management team structure (single operator, intra-generational, non-related members, etc.) and farming style (innovative, progressive, middle of the road, resource poor and traditional) (ibid., Howden et al., 1998; Vanclay et al., 1998; van der Ploeg, 1994). Learning through interaction was universally favourable, however, which led the authors to recommend that "farmer-directed groups can combine the highly favoured learning sources of one-to-one learning from experts and learning from other farmers with a structured training style component" (Kilpatrick & Johns, 2003, p. 162).

Millar and Curtis (1997, p. 140) also found that facilitated group learning processes were important in drawing out farmers' local knowledge and

contributing to knowledge and skill building, with “experiential learning, integrating information, effective facilitation, group autonomy, and building ongoing relationships and learning opportunities” as critical factors influencing the effectiveness of the collaborative learning process. They found that exchange and learning increased during hands-on activities and discussion rather than formal information presentation sessions, but also the different formats of the interventions they studied (training course with scientists versus farmer-led groups) differed in levels of farmer confidence and knowledge sharing for problem solving until more trust was built and the group evolved (ibid.). Similarly, Curry et al. (2012, p. 246) point to the rise in co-learning through bottom-up “local farmers’ groups learning mutually”. Rivera et al. (2018, p. 5) point to the role of knowledge and culture in helping farmers cope with change, adapt, innovate and collaborate and that “Farmers’ engagement in diverse knowledge sharing activities helps them to be more adaptive, to see new ways and to connect their own interests with those of the broader community”.

Leeuwis and Aarts (2011) argue for reconceptualising the role of communication within collaborative innovation processes and the role that dialectical thinking, dialogical debate and conflict play. In what the authors call ‘discursive spaces’, “everyday communicative exchanges” are stimulated amongst societal agents that involve exchanging meanings, but also “actors (re-)order the world by weaving together (competing) storylines that can be composed of a web of frames, vocabularies and argumentations” (ibid., p. 27). Different discourses, representations and storylines may collide and possibly conflict, introducing paradoxes that may cause doubt, ambiguity, uncertainty, etc. for actors, requiring debate, negotiation and meaning-making both internally by individuals and between actors (ibid.). Dialogical debate, however, may stop short of critical evaluation of assumptions and biases behind the various positions in relation to social and individual values, norms and intentions (Mezirow, 1990). Beers et al. (2016, p. 40) also explored what they termed ‘antithetic interactions’ in social learning, whereby participants debated or opposed others’ statements, which resulted in learning and impact more frequently than ‘harmonious’ interactions or ‘synthetic positions’ (Leeuwis, 2000). Thus, whilst building on each other’s knowledge is important for group learning, constructive conflict and “disagreement for social learning” in the form of critical discourse is crucial for

engaging learners in advanced cognitive processes (Beers et al., 2016, p. 40; Cundhill, 2010).

The study by Sewell et al. (2014) nicely draws together many of these findings, that learning is highly contextual and the different life-worlds of the farmers and scientists involved in the pasture management project influenced their engagement in the collaboration, evolving from the farmers deferring to the 'experts' to building confidence to critically discuss experiential knowledge contradictory to formally-produced scientific results. Based on the findings from that learning process, learning interventions need to focus on four key principles: community, interest, connection and alignment (ibid.). Efforts need to be invested (e.g., through skilful facilitation) in building learning communities based on respectful and trusting relationships whereby participants feel comfortable engaging in "dialogic interactions to co-construct new understandings" (ibid., p. 72; Falk & Kilpatrick, 2000). Diverse learning modalities and engaging participants in determining which topics should be covered by interventions recognises that interests and motivations will differ based on individual preferences and needs (ibid.). The learning process must connect information to the reality of the participants' context and areas of concern to enhance "sustained and critical reflection on practice" (ibid., p. 71). Finally, strategic alignment of activities and resources to key objectives and expected outcomes is necessary over a sustained period of time with frequent reinforcement and engagement (ibid.).

3.3 Social learning

In line with the significant developments in understanding farmer learning outlined above, Sewell et al. (2014, p. 72) argue, "Sociocultural theories of learning provide a compelling justification to reconceptualize traditional models of agricultural extension such as field days, *discussion groups*, monitor farms and seminars" (emphasis added). As discussed in Chapter 2, the paradigm shift to knowledge exchange in agricultural extension has led to an increased acknowledgement and valuation of farmers' knowledge, experience, skills and practices within the learning process. As building resilience is a higher-level objective to which learning processes contribute, Restrepo et al. (2018) speak to the importance of strengthening farmers' adaptive capacity through collaborative

tools, processes and practices integrating diverse sources and types as well as co-producing knowledge (Armitage et al., 2011; Godemann, 2008). This co-production of knowledge draws “on multiple understandings in an ongoing collective dialogue”, whether in wider networks between diverse actors or, as in FDGs, peer networks where actors may be quite similar but have different life-worlds, tacit knowledge and specific sociocultural contexts with which they are learning and making meaning (Blackstock et al., 2007, p. 279; Restrepo et al., 2018; Fazey et al., 2010). Co-production also contributes to a more inclusive process for generating knowledge rather than privileging certain knowledge systems over another (Restrepo et al., 2018; Hazard et al., 2017).

Peer-to-peer (P2P) approaches incorporate this realignment of power dynamics in terms of ‘who is the expert’ through horizontal two-way information flow amongst the participants rather than primarily one-way information provision from an expert to the individual and group (Koutsouris, 2012). FDGs are based on the premise of P2P learning, which previous studies have shown to be promoted through farm visits and tours led by the host farmer as well as discussion about challenges faced, practices undertaken, strategies employed, and processes implemented (Sewell et al., 2017; Millar & Curtis, 1997; Cristóvão et al., 2009; Mills et al., 2011; Goulet, 2013; Schneider et al., 2009; Zarokosta & Koutsouris, 2018; Restrepo et al., 2018). Financial information-sharing has been shown to be a method for P2P learning used by some FDGs as well (Hennessy & Heanue, 2012; Prager & Creaney, 2017). Nevertheless, we still do not have a well-developed understanding as to how cognitive learning theories apply to the learning through peer interaction happening within different groups’ contexts. In addition, there is an ongoing need to explore intra-group relational dynamics and develop more of an understanding as to how they influence learning and interaction (Kilpatrick et al., 1999).

Leeuwis (2004, p. 147) speaks about this concept of “multiple actors need[ing] to develop complementary and/or overlapping (or even fully shared) understandings about...‘learning fronts’ [or broad areas of cognitive change] as a basis for effective co-ordinated action” as social learning. Röling (2002, p. 35) defines social learning as “a move from multiple to collective or distributed cognition”. Collective cognition is understood to constitute shared perceptions amongst actors involved in the social learning process, whereas distributed

cognition signifies that the actors may share or have mutually supportive ideas, values and aspirations that enable them to “engage in complementary (i.e. coherent) practices” but “significant differences in perception remain” (Leeuwis, 2004, p. 147). Both of these definitions incorporate an active element as what social learning is contributing to, namely some type of collective action, rather than individual cognitive development through the learning process (Reed et al., 2010). This speaks to the different interpretations and usages of social learning since its conception, spanning different academic fields, e.g., information systems, organisational studies and media and communication studies (Jenkins et al., 2018; Argyris & Schön, 1996; Senge, 1990). The following subsections explore different conceptualisations of social learning that informed the theoretical and conceptual development of this study.

3.3.1 Communities of Practice

Lave and Wenger’s (1991) introduction of the situated learning concept generated significant attention to the context in which and how people learn from each other, labelled Communities of Practice (CoPs). This contributed to the paradigm shift in educational psychology in focussing on the individual to the collective learning process (Wenger, 2018). Wenger (1998) reframed the concept away from the original focus on apprentice-style learning by ‘newcomers’ of the shared meanings and practices within a community from ‘old-timers’ toward a broader approach to social learning. Taken up widely within organisational theory, social learning carried out through CoPs came to be understood as a collaborative process of sharing knowledge and experience amongst employees that allows for joint problem-solving and skill building as opposed to top-down management instruction. By fostering interaction and communication amongst actors, social learning aims to promote “a change in understanding that goes beyond the individual to become situated within wider social units or communities of practice through social interactions between actors within social networks” (Reed et al., 2010, p. 4). Compared to the individual learning processes of experiential learning (knowledge is created through experience – learning by doing process) and transformative learning (the process of effecting change in an individual’s perceptions through reflection and critical engagement) (Armitage et al., 2008), social learning is a “multi-layered, iterative process” that examines our actions, assumptions/values and learning processes (Keen & Mahanaty,

2006, p. 499) and boosts adaptive capacity in a deliberate and systematic manner (Johannessen & Hahn, 2013).

Illeris (2002) highlights that CoPs are typically centred around a common goal-directed activity and learning to help facilitate the process, but there has been significant criticism of the CoP concept for a number of reasons, one being the way in which diverse knowledge is integrated into the context of the community toward this common activity. Namely, the direction of integration of newcomers into the community is toward a fuller, richer understanding of existing knowledge and norms shared by the community. In other words, 'learning the ropes' to eventually move from the periphery to the centre, rather than contributing diverse knowledge that may shift the community's shared perspectives and meanings. Despite these shortcomings in the early application of the original theory, CoP has adopted a somewhat colloquial meaning as a conceptual identifier for multiple different types of groups of practitioners, convening around a common goal-directed activity to share knowledge and learn from one another in an effort to improve practice. This conceptualisation of social learning offered a potential frame for investigating FDGs, but the theoretical basis for how CoPs currently promote learning is not well developed and the early theoretical basis is not applicable to FDGs as groups of independent business owners with slightly altered practices adapted to their specific contexts rather than apprentices or employees at the same organisation learning complex tasks from each other.

3.3.2 Participatory processes for natural resource management

Another area in particular where social learning is predominantly conceptualised is in the natural resource management literature, whereby collaborative, participatory processes result in changes in thinking and behaviour (Pahl-Wostl, 2006; Rodela, 2011, 2014). Thus, this understanding of social learning also incorporates a collective action element around jointly managed natural resources, thereby directing the learning toward developing shared meanings or the distributed cognition described by Rölöing (2002) so that the participants can direct their coherent practices towards a common objective even if perceptions do not completely overlap. It has also been applied in connection with systems thinking with regard to sustainability transitions that involve multiple diverse actors and knowledge systems (Blackmore, 2010; van Mierlo et al., 2010;

Beers et al., 2016). This conceptualisation has mainly focused on outcomes (e.g., a collective landscape-scale management plan) rather than the process of learning as in the educational sciences. Reed et al. (2010) critique these approaches toward demonstrating that social learning has occurred or is likely to result from people coming together through the lens of outcomes or as evidenced by change in thinking, intention and/or practice. They argue that changes in behaviour do not explain the cognitive shifts that occur through the process of actors engaging in learning; there are other contextual factors that play a role as to whether changes in perception and knowledge lead to change in behaviour (ibid.).

This conceptual understanding of social learning was also not appropriate for this study for two main reasons. Whilst FDGs may have a common learning objective around certain environmental management issues, e.g., organic farming, no-till, etc., they are not formulated around the collective objective of jointly managing a natural resource. Again, the members are independent businesses and operators coming together to learn, e.g., about different ways environmental management practices may be implemented on their farms, but they are not engaging in a participatory process whereby they are dependent on constructing a shared understanding and agreement to jointly manage a natural resource, e.g., a watershed. Additionally, as this study was interested in developing the understanding of learning processes within the context of FDGs from a cognitive learning theory perspective, assessing whether change in behaviour had occurred as the indicator as to whether learning had happened was grossly insufficient. Cognitive processing and shifts may occur internally without resulting in behaviour change either immediately (or ever) if the context prevents it or the learner wants to change but feels s/he cannot (e.g., low self-efficacy).

3.3.3 Social cognitive theory

Despite Bandura often being referenced as the founder of social learning theory by various studies, they do not meaningfully engage with the elements of his cognitive learning theory. Albert Bandura (1977, 1986, 1997, 2001) developed social learning theory within educational psychology as a 'bridging concept' between behaviourism and cognitive learning theories. It was conceptualised as the way in which humans learn through modelling and observation (Bandura,

1977). Bandura eventually renamed it social cognitive theory, which emphasised that social learning involved cognitive processing from the learner's observation beyond simply demonstrating reactive or imitative behaviour (Bandura, 1986). Bandura (1986, p. 18) explained learning through "a model of triadic reciprocity in which behavior, cognitive and other personal factors, and environmental events all operate as interacting determinants of each other". This simultaneous interaction between the individual, his/her environment and behaviour stimulates significant cognitive processing and development (Schunk, 2012). "By observing others, people acquire knowledge, rules, skills, strategies, beliefs, and attitudes. Individuals also learn from models the usefulness and appropriateness of behaviors and the consequences of modeled behaviors, and they act in accordance with beliefs about their capabilities and the expected outcomes of their actions" (ibid., p. 118). The learner therefore exercises critical thinking, "reflecting on the possible consequences of certain behaviours and then deciding on the best action" (Giovazolias & Themeli, 2014, p. 74). Bandura (1977) originally referred to the process of assessing one's learning (i.e., observation, processing and use of the acquired knowledge) as self-regulation. Schön's (1983) well-known description of reflection is that it is a cognitive process of active, deliberate thinking involving both reflection-on-action and reflection-in-action. It is aimed at building knowledge through new ideas, perspectives and experimentation, with reflection both during and after to improve understanding and implementation (ibid.).

That developing conceptualisation of social learning was in accordance with other scholarship reorientating the process by which an individual learns away from a passive acquisition of knowledge (Freire, 1972). Learning is not simply carried out through information transfer from a more knowledgeable instructor or expert, e.g., classroom teachers, to the less knowledgeable learner, but instead, learning happens through social interaction and experiential learning (as discussed above). Learning with and from one's peers. Importantly though, the focus of that inquiry was still centred on the individual, how practitioners could understand the way individuals learn to better execute their instruction to promote learning. From a pedagogical perspective, instruction could be tailored to have peers demonstrating for others how to do the action and promote experiential practice, e.g., peer tutors (Schunk, 2012). With regard to FDGs and P2P learning

processes in general, it is hardly a novel concept that if groups of peers interact with a common objective to learn, some form of learning will likely happen. But the question as to how observational learning is carried out and why it results in cognitive shifts for the participants as well as how the concept of reflection contributes to the process are interesting within the context of FDGs. Additionally, the focus of this understanding of social learning is on the interplay between the individual and her/his environment and their behaviour, both being affected by and affecting their environment. Thus, it allows for FDGs comprised of farmers operating independently but interested in acquiring knowledge and experience that could be processed, revised as necessary and (potentially) applied to their particular context. Learner autonomy in the social learning process was therefore quite relevant to the target population being studied.

3.3.4 Complications involved with peer-to-peer learning

As introduced above, peer-to-peer learning allows for a realignment and reallocation of power within the learning landscape in terms of valuation and appreciation of different types of knowledge and experience possessed by different types of actors. Research on the politics of knowledge highlights the problematic nature of the term 'expert' in relation to institutions and actors perceived or claiming to hold more valid, legitimate, scientific, constructive, etc. knowledge than actors' tacit knowledge informed through experience (Freire, 1972; Leeuwis, 2004; Koutsouris, 2012). As Ludwig et al. (2022, p. 2) state, knowledge is not neutral, but is rather performative in nature: "the concepts and understandings we have about the world around us orient and allow us to discuss, negotiate, and work towards particular courses of action (or 'performances') that make a difference and that have 'positive' or 'negative' consequences, depending on what, and whose values and standards one considers". Thus, in relation to the production and application of knowledge, it is critically important who defines the questions to be answered, the methods determined to be appropriate for investigation and what form of evidence or knowledge is considered sufficient to draw on in answering the questions (ibid.).

The knowledge purveyed by people with specialist academic training on a specific topic, whether scholars of an academic institution or professionals, has tended to be privileged over what communities on the ground involved in activities related to the topic think, how they generate understanding, what they choose to

prioritise and analyse, and how their experience contributes to wider knowledge on different topics (Choudry, 2019). This privileging of 'expert knowledge' may have many detrimental effects on collaborative learning. On-the-ground actors may defer to 'experts' "as bearers of improved knowledge and technology or synthesizers of local knowledge" over their own knowledge and experience, inhibiting co-production of knowledge and potentially resulting in 'solutions' misaligned with the local context or unfit for some other purpose (Armitage et al., 2008, p. 94; Davidson-Hunt & O'Flaherty, 2007). Butler et al. (2015, p. 219) also found a gradual disengagement of stakeholders from a collaborative learning process due to a move from "drawing on a plurality of knowledge" to "mainly expert knowledge and...not a lot of openness", and Kane and Boule (2018) found that frustration by stakeholders with outside 'experts' misunderstanding local specificities or disregarding expertise grounded in local practice led to sense of disempowerment. Additionally, the "type of knowledge generated and the process of knowledge production can [also] have immediate societal consequences" in the way it determines how the knowledge is applied (Ludwig et al., 2022, p. 2). For example, 'experts' in veterinary medicine may define the question as to how to handle mastitis issues in a dairy herd in a way that results in more antibiotic use rather than exploring farmers' experience with system modifications to reduce mastitis levels. When considering the context of peer-to-peer learning in FDGs, this highlights the potential for exchange of knowledge informed by experience, culture, locally specific ecological and social characteristics, etc. to subvert traditional conceptualisations of knowledge flowing from an 'expert' and create a more mutual process of knowledge production and application (Carolini et al., 2018).

Nevertheless, some of the FDGs' meeting incorporated a presentation by a professional or academic on a specific topic for which that person was considered to have particular expertise. The term 'expert', therefore, is used consciously within this thesis not to make a positive value judgment as to the knowledge added into a FDG by a guest speaker. Rather, it is used to illustrate the difference between FDG meetings which were peer-to-peer focused and/or led, whereby the participants explored one or many topics during the course of a meeting through sharing their own knowledge and experience, often in relation to a direct example being observed or demonstrated on a host farm, versus FDG

meetings where an external person was invited to present knowledge to the farmer participants and was framed by the facilitator / coordinator in the meeting invitation, agenda and introduction to the group as an expert on the topic. Thus, despite the legitimate concerns involved with utilising a term to label these interactions that connotes a higher valuation of the guest speaker's knowledge in relation to the participant farmers' knowledge and experience on the topic, the term continues to be used in real-world contexts by the participants themselves. Thus, it will similarly be used to describe those scenarios.

Simply because one engages in learning from and with peers, however, does not eliminate the risk that certain peers' knowledge and experience will be (de-)valued, understood, highlighted, suppressed, etc. differently than other peers'. As Armitage et al. (2008, p. 94) highlights, "unequal and evolving relationships among social actors should be expected" in collaborative learning spaces to which actors may bring conflicting worldviews, values and systems of culture and knowledge, requiring negotiation and often conflict resolution. As Eastwood et al. (2022) found in relation to adaptive co-management of landscapes in Scotland, requiring collaboration and cooperation between land managers, social relationships and the power dynamics and trust between actors is crucially influential with regard to learning and triggering change. Set within the Cairngorms National Park, the study sample included privately-owned estates, areas owned by not-for-profit conservation organisations, state-owned and state-managed nature reserves and forests, with different arrangements on each in terms of management responsibility (owner- or manager-managed) and further division into tenancies for shooting and agriculture on some. Thus, there was a diverse array of actors experiencing policy and social changes aimed at shifting management toward more sustainable objectives, for which learning was highly influenced by their social networks.

The authors found that some of these long-standing communities had strong social bonds and entrenched management perspectives that often had not changed significantly for generations. Self-organised collaborative groups "could consolidate beliefs, practices and context-shaping power rather than being used as a forum for sharing diverging perspectives and understandings", thereby limiting social learning between diverse actors and groups and polarising management objectives (ibid., p. 7). Imposed top-down groups were also not

particularly effective in building trust or facilitating social learning amongst diverse participants. Triggering events or crises, however, were found to catalyse transformative change by landowners / managers in their management objectives and reconfiguration and widening of their social networks to access different knowledge and learn how to change their management approaches. This divergence from the accepted norm was found to be challenging by the land managers as it “could create animosity and isolation within a land manager’s social network”, demonstrating the negative potential for limited social network groups of similar actors to pressure conformity and reject new information in order to consolidate their approaches and maintain the status quo (ibid., p. 5). The learning within those spaces was found to be limited to incremental, single-loop learning (described in subsection 3.2.2) according to Eastwood et al. (2022), reinforcing the established paradigm as to how the learners understood the topic and not encouraging participants to undergo double- or, even better, triple-loop learning.

Trust (or the lack thereof) amongst different individuals and groups may also significantly influence how participants learn from each other. Stern and Coleman (2015) point to different types of trust within social relationships, with dispositional and affinitive trust highly relevant to peer-to-peer learning contexts. Dispositional trust may be understood as the predisposition of individuals to (dis)trust certain people based on historical interactions, assumptions, positionality, etc. Selective screening of information to confirm one’s beliefs has been explored from a moral judgment perspective (Haidt, 2001) as well as in relation to the concept of confirmation bias (Klayman, 1995). In relation to groups with similar cultural commitments, e.g., dairy farms that separate the cow and calf immediately at birth or run low-input, grass-based systems, the members may have motivated reasoning to conform their information processing to protect their status within that group sharing a certain position, known as identity-protective cognition (Kahan, 2017; Sherman & Cohen, 2006; Kunda, 1990). This form of cognition within peer groups may thus impede learning that explores divergent viewpoints and potentially justify disengagement or sabotage under the guise of mistrust (Stern, 2008, 2010).

Affinitive trust, however, relates to feelings of social connectedness and shared identifies, experiences or values that may arise and develop through

interaction aimed at fostering positive relationships, understanding and social learning (Stern and Coleman, 2015). This is important within wider social networks surrounding peer groups where external influences, e.g., to change management approaches or modes of thinking, may be perceived by some as a threat to their way of life or business model (Armitage et al., 2008; Eastwood et al., 2022). Learning in these contexts has been metaphorically termed akin to 'wheelbarrows full of frogs' (Leeuwis & Pyburn, 2002) – dynamic and unpredictable as the individuals involved encounter thinking, experience and perspectives from a new vantage point (Armitage et al., 2008). “[W]ho participates and how different actors acquire the right or ability to participate in a learning process” has been found to link to social learning outcomes, influenced by individuals’ extent of participation, degree of involvement, how, when and why they entered into the process, etc. (ibid., p. 93; Diduck, 2004). Power differentials amongst different types of actors in learning processes is therefore a concern, which may relate to roles, responsibilities and rights over resources. However, the normative concept of community as a homogenous collection of actors with a similar ability, willingness and capacity to experiment and learn about different topics has been challenged (Kaufman, 1959; Agrawal & Gibson, 1999). Power differentials within communities may therefore not only affect how and whether different members of the community feel they are capable and have the capacity to engage with wider learning processes, but also participation and learning amongst themselves as a heterogenous collection of individuals collaborating due to a shared interest, location, farm type, etc. but with varying capabilities and capacities.

As Graham (2014) identified amongst two different communities of land managers struggling to manage a noxious weed in southern Australia, peer relationships impacted learning and support between the land managers as well as government agents based on different forms of power and trust. Neighbours were found to be willing to provide support regarding land management issues to those operators who they believed shared similar farming styles and values based on their management practices and who would reciprocate aid provided, e.g., notifying about outbreaks and assisting with weed management on their land. However, the results showed “there is a ‘dark’ side of trust that requires greater consideration” (ibid., p. 95). Neighbouring land manager relations were

negatively impacted by some land managers being viewed as 'cooperative' and exclusive relationships being fostered between them and government agents, thereby inhibiting engagement and sharing of knowledge, expertise and support amongst neighbouring peers. Power relations between the land managers mostly acted as a social attractant; if peers were perceived to have expert power ("special knowledge or expertness"), referent power (the learner identifies with her/him), reward power (s/he "has the ability to mediate rewards for" the learner) or legitimate power (s/he has a right to prescribe behaviour for the learner), other land managers were more likely to engage with them on the shared management problem (ibid., p. 89). Particularly, referent power amongst the land managers acted as a form of peer pressure to control weeds on their own land, as poor management was a source of shame and was considered a proxy for farming ability, affecting the peers social standing within the farming community (see also Phillips, 1999).

In some instances, however, power relations between the land managers and with government agents acted as a social deterrent and inhibited the establishment and/or effectiveness of working relationships between peers (Graham, 2014). This related more so to legitimate and coercive (s/he is perceived as having the ability to mediate punishments for the learner) power, to which some land managers demonstrated resistance to learning and management change. Thus, power exercised by different actors may be influential in promoting behaviour change within communities of peers, but only if the recipient is open to the knowledge, support and influence, and varying perceptions of competence, willingness, status, etc. may negatively affect peer relationships. The presence and guiding role of a neutral mediator or facilitator has also been highlighted as a way in which power imbalances may be managed and social learning fostered (Armitage et al., 2008).

Thus, various complications involved with peer-to-peer learning contexts must be taken into account during the study of FDGs as potential barriers to and negative elements associated with social learning in those spaces. Firstly, the presence of a person external to the group contributing knowledge may be framed and/or perceived as an 'expert', introducing the significant potential for participants' knowledge and experience to be disregarded or for solutions to management questions to be provided that are unfit or that promote the 'expert's'

operating paradigm. Within limited social networks or peer groups, which may be long-standing and exhibit strong social bonds, there is also the potential for ideas, processes and practices to become entrenched as the accepted norm, which may present an extreme challenge for individuals to diverge from at the risk of incurring animosity and isolation. Participants in the FDGs may share dispositional trust of each other, but this presents the risk that they may selectively filter shared information, knowledge and experience to conform with their status as part of the group sharing a common interest or identity (i.e., identity-protective cognition). Such consolidation of collective viewpoints may also prevent affinitive trust from forming within their wider social networks if different knowledges are viewed as threatening a shared way of life or their business models, for instance. Nevertheless, as a community, the FDGs should not be considered as a homogenous set of actors with the same capability and capacity for participation, experimentation and learning. Power differentials within communities may impact the members' interpersonal relationships as well as those within their wider networks. Perceptions of certain actors as having more power and trust relations with certain actors, e.g., government agents, may inhibit engagement and sharing of information with those peers, as well as lack of perceived good farming ability and reciprocity of support provided. Thus, trust and power are integral within peer-to-peer learning spaces and may both positively and negatively impact each other, the negotiation and fostering of which may be guided by a skilled neutral mediator or facilitator.

3.4 Conceptual framework

Thus, social learning theory within the context of this study is understood to be fundamentally based on learning occurring through interaction with one's environment, thereby changing one's cognition and possibly behaviour or performance. Social learning theory by name has been applied to P2P learning interventions in the agricultural field, but not rigorously according to Bandura's theoretical conception, and particularly not in the context of FDGs. By trying to understand whether and how the fundamental tenets apply, we can attempt to understand why from a cognitive learning perspective the process of coming together with peers and interacting in that format may lead to changes in thought, intention and practice. We can then build on this understanding as to how to better promote social learning within the context of not just FDGs, but in P2P

learning interventions more broadly. Thus, the three elements constituting social learning that frame the inquiry are outlined below, incorporating various factors to be considered in analysing the FDGs' interactions through the lens of social learning theory.

3.4.1 Behaviour modelling

Behaviour modelling is foundational to Bandura's (1977) theory in that people learn through observing others in their social environment. This may be either through enactive learning ('hands-on' or 'learning by doing') and/or vicarious learning (observation and listening) through demonstration and explanation (ibid.). The idea, process or practice that the modeller is guiding the observer to do or explaining to the observer is thus important as the content of what may be learned. However, various factors influence and may affect the observational learning process.

Attention: this factor relates to the observer or learner's meaningful perception of the modelled action (Schunk, 2012). If the learner does not pay adequate attention to the modelled behaviour, it may negatively impact their perception and understanding of the information being purveyed.

Retention: this factor relates to the learner taking the information attended to from observation of the modelled behaviour and rehearsing, coding and relating it to previous knowledge. This would relate to the schemes of interpretation that Leeuwis (2004) explained, in addition to the process of assimilation according to existing cognitive structures or accommodation within the zone of proximal development (Vygotsky, 1978) to expand one's cognitive structures and retain the knowledge.

Production: this factor relates to the learner using the coded and retained knowledge to produce the idea, process or practice it incorporates. What is produced is actively compared by the learner to the modelled behaviour and her/his mental representation of it through an iterative cycle of production and reflection.

Motivation: this factor relates to the learner's reasons for devoting time and attention to the modelled behaviour and dedicating effort to cognitively processing the information to retain and produce the knowledge.

One of the criticisms of cognitivism or information processing theory, which preceded social learning theory in the development of psychological conceptions of learning (i.e., behaviourism to cognitivism and so on (Merriam & Berriema, 2014)), is that whilst very different in its approach toward behaviour change, i.e., putting “mind back into the learning equation, [cognitivists], too, appear to assume that knowledge is ‘out there’ to be transferred into the learner” (Driscoll, 2005, p. 387). Constructivists, by contrast, understand knowledge to be “constructed by learners as they attempt to make sense of their experiences. Learners, therefore, are not empty vessels waiting to be filled, but rather active organisms seeking meaning” (ibid.). Vygotsky emphasised the importance of the sociocultural context to this process of constructing meaning from experience (1978). As a socially mediated process, the symbols, language, norms, values, etc. of the culture in which the individual is embedded all inform this construction. Adult learning in particular “is a process of negotiation, involving the construction and exchange of personally relevant and viable meanings” (Candy, 1991, p. 275).

Thus, the social construction of meaning from experience through exchange or interaction must be taken into account when analysing social interactions involving these elements of behaviour modelling and observational learning. The added value of applying a social constructivist lens to Bandura’s work centres on how the person understands, assigns value, gives meaning, and utilises the information received through modelling and interaction rather than simply processing it devoid of personal, social, cultural, and other influencing factors.

3.4.2 Role modelling

The role modelling element embedded within social learning theory emphasises the critical importance as to who is modelling behaviours, and how. This will impact the learner’s observation and cognitive processing of the ideas, processes and practices demonstrated or explained. Additionally, how the learner perceives that the model’s idea, process or practice was positively or negatively reinforced may affect the learner’s motivation to learn it. Whether the learner perceives certain outcome (learning) expectations as resulting from the modelled behaviour as well as her/his self-efficacy (belief about one’s own capabilities) are also factors influencing receptivity to the ideas, processes and practices demonstrated or explained by role models.

Knickel et al. (2009, p. 136) emphasise this idea that learning “through interaction with [one’s] social and physical context” is not a process that changes just the individual but also the group, network or organisation. However, participatory or group learning processes bring to the fore questions of power relations, such as who gets to participate and how do actors / stakeholders acquire the right and ability to effectively participate? Darnhofer (2010, p. 218) also found that issues related to social competencies were considered challenging by farmers, such as “how to achieve open communication between partners, how to provide reflexive feedback and how to ensure constructive conflict management and understanding of group dynamics”. These concerns need to be taken into consideration in the context of the FDGs interactions, particularly in light of the differing perceptions of knowledge and experience from role models within the groups and the relational dynamics that may play out around who is considered a role model or not.

3.4.3 Self-reflexivity

Bandura’s (1977) original social learning theory incorporated the element of self-regulation. Self-regulation of one’s learning the modelled behaviour related to the process of monitoring one’s performance through post-production reflection. This process was expanded to include pre-production regulation of one’s preparedness, resources, etc. to effectively perform, as well as synchronous regulation during production whereby the learner regulates herself/himself to modify performance of the modelled behaviour. Despite this development of the concept, meaningful adult social learning processes involve more complex issues than task-orientated learning, whether behavioural- or cognitive-based, for which self-regulation of performance may be sufficient. Learning from one’s peers and thereby potentially engaging with alternative discourses may challenge not only how one does something but also the reasons why. Thus, reflection-on-action and reflection-in-action (Schön, 1983) was a potential concept to use in modifying this element to incorporate the advances in understanding around cognitive learning processes. Béres & Fook (2020), however, point to the potentially shallow nature of reflection in failing to challenge hidden assumptions and biases behind one’s own and others’ ideas, beliefs, attitudes and intentions in relation to what has been modelled. Therefore, self-

reflexivity is in line with developments in learning theory around fostering metacognitive development.

Self-reflexivity relies on learners' agency in terms of developing self-awareness and advancement in thinking about their thinking, thereby allowing for metacognitive scrutiny as to what would contribute to their learning journey (Mezirow, 2009). Habermas' (1991) communicative action theory incorporates agency and critical autonomy in the discursive process of constructing shared meanings, requiring participants to be able to explain their choices and reasoning to others. In terms of the reflexive process, Béres & Fook (2020) describe an even more advanced stage of critical reflection beyond reflexivity. Critical reflection draws on emancipatory knowledge in Habermas' (1972) three knowledge categories or 'knowledge constitutive interests' (Craib, 1992): technical, practical and emancipatory. Technical knowledge is the objective search for facts, or 'knowing that' (Bottomore, 1984). Practical knowledge brings context and accumulation of knowledge through experience to understand, or 'knowing how' (ibid.). Emancipatory knowledge encourages examination of hegemonic structures of power and inequalities framing one's thinking and practice (Brookfield, 2000). Reflexivity instead "extends to the material and emotional aspects of who we are as human beings and acknowledges that these aspects also play a part in influencing the types of knowledge we create, what we think is important, and the interpretive frameworks we use. To be reflexive, therefore, is to be aware of who we are as whole human beings and how this influences the way we think and behave" (Béres & Fook, 2020, p. 11). Thus, the underlying process of reflexively evaluating how one's assumptions and biases influence her/his understanding, decisions, approaches, etc., may further the learner's process of critically reflecting on the wider social context in which they are situated (Lipp, 2014). Nevertheless, the higher level of critical reflection goes beyond this study's conceptual framework. Instead, evidence of learners exercising self-reflexivity in the context or as a result of FDG participation will be the final element of social learning investigated.

As detailed above with regard to learning theories, this metacognitive assessment may result in fundamental shifts in perspective and thereby transformative learning. But as 'disorienting dilemmas' are foundational to the transformative learning process, either 'epochal' (sudden, often crisis-induced) or

'cumulative' (progressive series of insights), this study is not focused on this nuanced type of learning. Rather, a more processual approach toward how social learning may lead to cognitive shifts and possibly metacognitive reflexivity about assumptions and biases impacting one's thinking, processes or practices will be applied. As highlighted above, 'antithetic interactions', constructive conflict or what may be termed critical discourse amongst peer-to-peer learning participants may promote social learning (Beers et al., 2016). Therefore, participant observation within the FDGs will explore whether evidence of this form of dialogical interaction is exhibited amongst the peer learners. It is possible that such critical discourse may introduce disorienting dilemmas through the course of the FDG discussions, but analysis of the resulting learning will attempt to remember that not everything rises to the level of transformations in one's frame of reference or 'habit of mind' (Mezirow, 2018, p. 118).

3.4.4 Role of facilitation

Facilitation has shifted with the constructivist understanding and approach to build discursive spaces for networks to overlap and innovate through dialectical debate. Leeuwis and Aarts (2011) highlight the role of communication professionals in creating these spaces and managing conflict within debates as actors with different life-worlds and sociocultural contexts overlap and navigate constructing shared understandings and meaning making. Curry et al. (2012) highlight the need for good facilitation in the context of local groups of farmers aiming to learn from each other, and Prager and Creaney (2017) also emphasise the vital role that facilitators play in the context of FDGs. Specifically, Morgans et al. (2021) provides a strong empirical example of innovative facilitation techniques grounded in the theory of participatory action research to empower farmer action groups to achieve individual and collective action around reducing antimicrobial usage on dairy farms in the UK. Thus, empirical observations of facilitators of the FDGs will be collected and analysed as to how they effectuated these elements of social learning through their role in the group's discussions.

3.5 Conclusion

Farmer learning has been studied extensively to attempt to understand how and why different types of learning interventions result in more or less effective acquisition of information, cognitive change, intention to perform different practices, reported behaviour change, etc. Context within the scope of

farmers' learning, particularly individuals' life-worlds and sociocultural contexts, must be taken into consideration as influencing their agency within the learning process. Additionally, different forms of learning targeting cognitive development, value/attitude shifts and practice change may theoretically underpin and result from farmer learning interventions, such as experiential learning and transformative learning. These individually focused learning theories, however, have been criticised for failing to adequately account for the role of social interaction within the learning process, which, it is worth reiterating, is a "continual and integrated psychological and social process of knowledge creation rather than a fixed process focused on outcomes" (Lankester, 2013, p. 183). With regard to methods for stimulating farmer learning, group learning and peer interaction was found by different studies to offer a way in which diverse knowledge, experience, perspectives, etc. could be exchanged and built upon through collaborative engagement. Communication within these 'discursive spaces' not only involves exchange of meanings, but "actors (re-)order the world by weaving together (competing) storylines that can be composed of a web of frames, vocabularies and argumentations" (Leeuwis & Aarts, 2011, p. 27).

Social learning was referenced by some farmer learning literature as well as extensively in other disciplines with regard to collaborative group learning processes, but as highlighted above, there were theoretical reasons why different conceptualisations were not selected for this study. Communities of Practice theory has evolved from situated learning by apprentice-type 'newcomers' from 'old-timers' to be extensively employed within organisational theory as a method for peer learning and development amongst employees rather than top-down training programmes. Participatory processes aimed at natural resource management is another area in which social learning has been reported, but the resulting outcomes of goal-oriented collaboration and collective management solutions tend to be the indicators that learning has taken place amongst diverse actors. Thus, both of these theoretical applications were rejected as the basis for exploring how and why learning happened amongst independent farm business owners in voluntary groups. Finally, rigorous application and analysis of Bandura's social learning theory had not been undertaken, despite mention of his theory as foundational to the concept, with regard to farmer P2P learning, and specifically not within the context of FDGs. Thus, the elements of behaviour

modelling, role modelling and the evolved concept of self-reflexivity, as well as the role of facilitation in fostering social learning provide the conceptual framework for the consequent study, carried out according to the methodology outlined in the following chapter.

CHAPTER 4 – METHODOLOGY

"Under Pressure"²⁸

The group of about 20 farm owners and herdsmen stood and sat in sporadically placed chairs around the kitchen at that meeting's host farm. As it was the first meeting I was attending for that group, I had just finished giving my spiel about the PhD and asked for their consent to observe their meetings and take notes about their interactions. As per my ethics protocol for the study's empirical work, every participant then had to sign and return my consent form formally recognising that they understood the nature of the research, the data management, confidentiality and anonymity commitments, and agreed to have their statements included in my fieldnotes. The host, who was not a member of the group at that time (he joined after that meeting and was a regular attendee), had exhibited some initial gruffness of tone and body language as everyone was arriving and the facilitator opened the meeting with introductions. But his response to my consent form request left me flabbergasted.

Upon grudgingly signing my consent form, instead of handing the form to me, he handed it to the facilitator. Speaking about me in the third person in front of me, he then said in a slightly suspicious tone, "She can stay as long as she's not a vegan spy". I laughed out of impulse and then realised he was only half kidding. I quickly joked that my family would disown me if I ever chose to be vegan as my grandpa had been a beef farmer, but for the next number of minutes whilst the meeting moved on, I ruminated on that stark incident.

That tense moment was emblematic of how difficult it can be for outsiders to gain access to these private spaces or closed social networks. It never even occurred to me that the people I would be approaching might suspect that I had ulterior motives to harm their businesses, families or lives in some way. With activism against dairy farming such a prevalent issue at the moment and dairy farms across the South West on alert for people filming, trespassing and conducting smear campaigns on social media, in hindsight, I suppose there was no reason for them to immediately presume my favourableness toward farmers and agriculture in general. I tried to reassure myself that there was nothing more I could have done beforehand having put forward my initial description and request for permission through the facilitator as the group's gatekeeper. But for every meeting thereafter, I made a mental note to bring a sandwich for my packed lunch that prominently featured meat!

4.1 Introduction

This chapter outlines the methodology utilised in this study to explore whether, how and why social learning plays out within the context of FDGs in the South West of England. As illustrated in the vignette above, the process of recruiting and obtaining consent from the FDGs in the sample was far from a one-off, straightforward process. When first approaching the groups, I as a researcher

²⁸ Mercury, F., Taylor, R., Deacon, J., May, B., & Bowie, D. (1981). Under Pressure [Recorded by Queen and David Bowie]. On *Under Pressure* [Single]. Montreux, Switzerland: EMI (26 Oct).

was an outsider who had not yet gained their trust (Wickins & Crossley, 2016) and they therefore, understandably, regarded me with polite reserve and disinterest at the start. Many of the farmers eventually told me they had been approached by researchers in the past who asked them for information, they had willingly provided it and then they never saw or heard from the researcher again. This led me to two resolutions in working with these FDGs that will be expanded upon in the sections below: 1) I did not want to take an extractive approach towards these people who had opened up their businesses, lives and homes to me; I would work to build relationships in which I shared about myself and engaged in more than just an information-gleaning exercise. And 2) I would feedback as much information as I could that they might find useful about farmer discussion groups from what I saw, heard, experienced, and learned.

In exploring whether farmer discussion groups promote social learning, I designed my empirical research and data collection to address not only open contextual and conceptual questions but also methodological gaps in existing research. In a report for AHDB, Rose et al. (2018) highlighted the lack of studies employing methodologies that involve actually observing farmers' behaviour change in both technical practice and decision making rather than attempting to understand farmer behaviour or measure learning through intention to change. Ethnography is pointed to as a methodology "rarely used, but this could be one possible way of observing actual behaviours over time" (Rose et al., 2018, p. 27). This highlights another criticism about the lack of longitudinal studies monitoring farmers' actual rather than 'reported' behaviour change. Particularly with regard to learning, peer-to-peer approaches to knowledge exchange and support between like-minded actors in established networks were suggested as a way in which not just individual but collective behaviour change could be furthered (Rose et al., 2018). Whilst studies have focussed on FDGs from a structural standpoint and highlight both the benefits to and preference of farmers to learn from those they know and trust (Hennessy & Heanue, 2012; Morgan, 2011; O'Kane et al., 2008; Bell et al., 2016; Koutsouris et al., 2017), there is a dearth of evidence from inside these peer networks providing direct insights into their critical exchanges, relationships, power structures, meaning making, etc. over a period of time. Additionally, how and why they may be particularly proficient at inciting collective re-examination of perspectives, behaviour and, potentially, social change has not

been explored, despite the fact that research shows “long-term sustained engagement is needed to maintain change” rather than “information provision, for example through leaflets or one-off events” (Rose et al., 2018, p. 24, citing Alexander et al., 2015; Moe-Byrne et al., 2014).

The following sections detail the approach taken to examine the inner workings of FDGs, explore the relationship of the facilitator to the group, speak with farmers about their individual experiences over many varying numbers of years of participating, and attempt to follow-up with the groups about the emerging themes from the data collected. It begins with an overview of ethnography as the methodology framing this research project and some of the considerations that were necessary in carrying out fieldwork using this approach. This is followed by an overview of the recruitment process for the FDGs chosen for the sample. The chapter concludes with a description of the combination of methods used throughout the course of the project.

4.2 Methodology

Ethnography is a form of qualitative inquiry within the social sciences that “involves the ethnographer participating, overtly or covertly, in people’s daily lives for an extended period of time, watching what happens, listening to what is said, asking questions – in fact, collecting whatever data are available to throw light on the issues that are the focus of the research” (Hammersley & Atkinson, 1995, p. 1; Brewer, 2000; Merriam & Tisdell, 2016). This generation of knowledge serves the purpose of trying to understand human behaviour, but it also may have a practical relevance in shedding light on and arguing for human needs within society that are not being adequately met (Spradley, 1980). As emphasised by Lincoln and Guba (1985, p. 39), attempting to understand, respond to and describe the complex interactions occurring within contextualised scenarios, such as FDGs, requires that the ethnographer enter and observe first-hand as those research participants’ “realities are whole that cannot be understood in isolation from their context”. Thus, this study was situated within the constructionist paradigm whereby “[m]eaning is created through an interaction of the interpreter and the interpreted”, drawing on elements of ontological critical realism and epistemological subjectivism (Levers, M.-J.D., 2013, p. 4). Approaching the research this way meant that the researcher’s observation and interpretation

process was understood to be strongly influenced by the phenomenon observed as well as the societal context in which they were both situated; therefore, the findings were not a truth to be discovered but to be constructed through interaction between the researcher and the researched (Crotty, 1998).

Specifically highlighting the large amount of informal yet highly relevant, contextual knowledge contained in farmers' communities, Šūmane et al. (2018) provide a fundamental argument as to why an ethnographic approach was appropriate to draw out and frame the data from different FDGs. Given that they are groups of people, the functioning of each FDG would likely differ even if significant similarities existed between the groups as they are collections of individuals with diverse thoughts, values, attitudes and experiences. Each of them and their participants would have unique cultures, which "essentially refers to the beliefs, values, and attitudes that structure the behaviour patterns of a specific group of people" (Merriam & Tisdell, 2016, p. 29). Therefore, I was cognisant of the need to employ a methodology that would not simply allow for variations between the groups, but one which would be particularly "sensitive to the nature of the setting" and produce rich contextualised primary data that would help answer the questions posed at the outset of the research (Hammersley & Atkinson, 1995, p. 6).

Ethnography was a methodology that could provide this nuanced look into the collaborative learning processes and broader social, economic, environmental, physical and institutional contexts and relationships of the FDGs. As Hammersley and Atkinson (1995) said above, I needed to participate in these groups over an extended period of time in order to try to understand each group's culture and how the participants interacted with each other. Importantly in relation to my findings, there was a marked difference in how my relationship with the groups progressed over the months I attended. Thus, the temporal investment of integrating myself into these contexts carried a certain weight; I was able to more fully interpret the relationships between the participants but also to form relationships *with* the participants. Reflecting on my journey of understanding over time versus how I felt, what I understood and the interpretations and conclusions I applied to the initial meetings, if a researcher were to only attend one meeting of any of the FDGs I followed, their understanding of the group's functioning and dynamics would be limited and likely quite different.

Additionally, Rose et al. (2018) point out that ethnography is under-utilised as a methodology within research around farmer learning and behaviour. As a methodological approach for this study, it offered a framework that would allow for exploring learning and change over time within the context of FDGs. Participant observation and interviews would allow for probing into, listening for and potentially seeing actual changes the participants made over the course of their engagement versus intended changes following an event where they, theoretically and/or reportedly, had learned something. Participant observation is one of the methods used by ethnographers to “understand the social meanings and activities of people in a given ‘field’ or setting,...which involves close association with, and often participation in, this setting” (Brewer, 2000, p. 11). It involves observing people in naturally occurring settings and participating directly in that setting “to understand and explain what people are doing in that setting”, but the data collected “must be naturally occurring and captured in such a way that meaning is not imposed on them from outside” (ibid. p. 13). Therefore, during the course of the meetings, I occupied a covert, active observer but inactive participant position with regard to the discussions amongst the participants. This meant that as a researcher, I did not interject with thoughts, questions, clarifications, etc. that may have skewed the conversation amongst the participants in a way that ‘imposed’ focuses, meanings, interests, or any other unnatural interaction into the setting.

4.2.1 Ethical considerations

Ethical research considerations were essential in designing an ethnographic project aimed at gaining entry into and critical insights into the private meetings of FDGs. As described in Chapter 5, many of the groups I followed were closed groups with a set number of farms who agreed to share private business information with each other. They collaborate with each other in accordance with either explicit or implicit confidentiality agreements about this shared information, unless they state that their numbers or privileged knowledge can be shared beyond the bounds of the group with non-members. In line with general principles of ethical research, the interests and privacy of the research participants were primary throughout the course of my interactions with the FDGs (Spradley, 1980). Often this became an issue when other groups, consultants, organisations, researchers, government officials and agriculture industry players

inquired about which groups I was working with, what I was finding or whether they might be able to gain access as well. I consciously only provided vague, generalised findings and gave no identifying information about the groups in the situation other than county-level location and sector (e.g., dairy, veg growers, beef and sheep).

Additionally, in terms of access, most of the groups do not advertise their existence and/or activities publicly. Access and entry into those spaces will often be due to a geographical connection (e.g., neighbours), meeting at another event or discussion group, shared business consultants (who may act as the FDG's facilitator as well), similar farming principles (e.g., block calving, mob grazing), etc. Thus, I was very aware of my presence as an outsider and newcomer to the group when arriving at the initial meetings where the participants did not know me or seem to know why I was there, even though the facilitator / gatekeeper had contacted the group beforehand to alert them that a researcher had asked to come along and anyone objecting to it should speak up. As a normally very outgoing person who would take the initial step in going up to people at functions and introducing myself, I found in those situations since I was dependent upon the facilitator as the gatekeeper 'allowing' me to be there, I would wait to be formally introduced by the facilitator and give my personal and project introduction before asking for their informed consent. This had the advantage of making sure all participants heard the same information rather than a more piecemeal approach, but due to the nature of the groups, some participants would show up late for meetings. Thus, I had to scramble to share the same information with them and gain their informed consent without disrupting the group too much; I was quite worried about wasting their time and detracting away from the reason they were at that meeting. Rather, my intention was to fit my research alongside the FDG so it was as little of an inconvenience as possible.

Thus, in recognition of the need for considerate ethical attention to research focused on people and their intimate social networks, family issues, financial revelations, etc., careful consideration as to how to minimise and mitigate risk both to the participants and the researcher needed to be outlined. Formal approval was gained from the University of Exeter School of Social Sciences and International Studies ethics committee for the project design and methods (16 Oct 2018; see Appendix 1). At the outset of my first encounter with

each group and thereafter from participants who had not previously been in attendance, I gained informed consent from the research participants by explaining and providing a written description of the purpose of the research, detailing what my participant observation of their meetings would consist of, and how their data would be used. All FDG participants signed and returned the signature page of the informed consent form either directly or during a break in the meeting, keeping the information sheet for their reference. In line with requirements for data handling under the General Data Protection Regulation (GDPR) (in effect as of 25 May 2018), procedures were designed to maintain the confidentiality of the participants' data. All participants' signature pages were scanned onto the University's secure server and the originals were disposed of in a locked bin for shredding of confidential documents provided by the University. Following typing up the notes from each meeting, any identifying names or references to individual members of the FDGs were replaced with initials and stored on the University's secure server in the specific folder for that group. Pseudonyms were given to each of the seven FDGs' folders, with the original names stored in a password-encrypted spreadsheet.

The same procedure of asking for informed consent from interview participants was followed, explaining the research and asking for a signed acknowledgement that the participant(s) understood and agreed to how their data would be used. Additionally, the participants were asked whether the interviews could be recorded and informed that the recordings would be held confidentially on the University's secure server, and any notes or transcription of the interview data would be completely anonymised. Each interview was given an anonymous label relating to the group the member was affiliated with and which number interview it was, e.g. A1, B2, C3, etc., the coding of which was stored in a password-encrypted spreadsheet on the University's secure server. The aim was to ensure anonymity of the participants throughout the research process and in the research results, and prevent harm to both the participants and myself as a lone researcher. The latter aims were detailed within the ethics application as well in terms of notifying my supervisors of locations of meetings and interviews as they were often in remote rural areas without strong telephone or internet connection.

4.2.2 Researcher self-reflexivity

A key component of conducting ethnographic research, or more aptly stated, taking on the role of an ethnographer, is the need for the researcher to practice self-reflexivity throughout the entire project (Hammersley & Atkinson, 1995; Spradley, 1980). As a direct participant in the FDGs I followed, I interacted with the farmers in these groups often every month over the course of a year. Often the groups will do a yearly 'away' trip where they visit farms in different parts of the UK (some have even gone abroad in the past) over the course of two days. I was able to attend one group's full trip and half of another group's trip, which was invaluable from a relationship building standpoint as the purpose of those trips is not just to learn from top farmers across the country but also to socialise and relax away from the farm for a few days. These consistent interactions and the additional interviews with a small number of participants from each group led me to form a strong personal attachment to some of the groups. I like them, they like me; we would joke with each other and have a laugh during the meetings. I sat around their kitchen tables, met their spouses and children and heard about their businesses, families, lives, worries, goals and motivations.

Bryman (2016) talks about the need to clarify one's role within the research process and data analysis, reflexively assessing biases, assumptions and views one has as a researcher that may possibly colour your neutrality or objectivity in reconstructing the participants' multiple realities. This speaks to Gouldner's (1973) critical stance towards objectivity in research, or the "myth of value-free research" (Brewer, 2000, p. 128). He argues for recognition that the researcher, as well as those being researched, is not without her/his own individual sociocultural context and worldview through which they perceive, understand and reproduce knowledge. Therefore, "Reflexive sociology attributes importance to the theorist's infrastructure – his domain assumptions, his sentiments, the things that are real to him and the way these things shape his theory" (Gouldner, 1973, p. 78).

Thus, in practising reflexivity throughout the process of collecting and analysing the data, I consciously recognised that I am biased towards these groups – the people who make up their membership are switched on, nice, funny, hardworking country folk who bring up nostalgic feelings of the farming community I grew up in. I feel based on everything I've observed and heard them

speak about, I want them to succeed and I want to celebrate their collaborative spirit. Nonetheless, in recognising this bias in favour of them, I can critically appraise that just like every community where people work together and navigate interpersonal relationships, they are not perfect. During the group meetings, I tried to constantly check my observations to assess whether there were power dynamics at play in their interactions and social discourses. During the interviews, I was very aware of how I might potentially relate to the farmer(s), partners and facilitators in terms of age, education level, gender, nationality and positionality towards various political issues (i.e., Brexit) and how that might impact the way I was asking the questions, their responses, my interpretation of their responses, how I was accommodating them or not, and vice versa (Al  x & Hammarstr  m, 2008). In my notes from each farmer discussion group meeting, I also endeavoured to systematically exercise reflexivity by incorporating research diary notes about how I felt in the space, how I reacted to certain statements, the body language I could read from different participants in the groups and other observations that might affect the way I was perceiving or would interpret the data (Bryman, 2016). Throughout the writing process as I translated my collected data into findings, I actively reflected on the language I used and how I reproduced situations in relation to my role as an ethnographer and the research participants as well (Alvesson & Sk  ldberg, 2009).

4.3 Recruitment of FDGs

The process of getting FDGs on board was neither simple nor straightforward. By virtue of the fact that FDGs are often private, farmer-led and do not advertise their meetings or recruitment, they are hard to find through public channels like Google searches or governmental databases. I could only sample from groups in the South West due to funding and time restrictions as I would have to travel to each group's meetings every month from Exeter. Ideally, I also wanted a range of sectors represented by the groups rather than solely dairy or beef and sheep, for instance, as well as a mix of fully independent, consultant-driven, organisation-led, or other FDG formats. Finally, I was interested to see whether there were specialty groups which could potentially provide an interesting case for analysis, e.g., women-only, young farmers or new entrants.

4.3.1 Scoping exercise

Mapping the landscape of FDGs was the first task in order to identify potential research subjects. Following an extensive literature review on agriculture education and training in the UK and farmer discussion groups generally, I conducted a scoping exercise to determine which groups exist in the South West of England. Starting with desk-based research, some groups were identified online, e.g., the Grassland Societies and AHDB, but many appeared to hold large farm walks and demonstration events rather than critical discussions around KPIs. Some groups were mentioned in passing on online forums (e.g., The Farming Forum²⁹) or by farm consultants' staff profiles as facilitators. Nevertheless, the most significant way in which I found FDGs, and continued to find them throughout my fieldwork due to snowballing, was through word-of-mouth. I loosely categorised them within an Excel database in order to have criteria by which to narrow down the selection of the sample to achieve the range of groups envisioned above.

As described in more detail in Chapter 5, ultimately seven different groups were selected for the sample based on different attributes. Geographically, one was from Dorset, two were from Somerset, one spanned the entirety of the South West but mostly met in Devon and South East Somerset, one covered Devon and Cornwall and two were in North Devon and South West Somerset. Two were created and led by a non-profit organisation, one was created and led by a representative member organisation, one was entirely farmer-led, and three had been created in part by consultants and farmers and were facilitator-led. Four were dairy focussed, two were beef and sheep groups, and one was made up of vegetable growers, with two being women-only and another specifically for young farmers. Two of the groups were quite new (1-3 years), whilst the others had existed anywhere from 5 to 20 years.

4.3.2 Facilitators as gatekeepers

Of the FDGs selected, four had a professional facilitator and three had a coordinator; they were my initial points of contact for the groups. In addition to holding invaluable yet difficult to access 'insider knowledge', my access to the groups was dependent upon their willingness (as the 'Gatekeepers') to ask

²⁹ <https://thefarmingforum.co.uk/index.php>

whether the group would allow for participant observation at their meetings. I wanted to build rapport with the Gatekeepers as gaining the groups' trust was such a crucial element, and I did not want my request to be met with resistance due to an inaccurate framing of the intent of the project. Rather than simply focussing on the extent of my planned observations and the data I would gain from the groups, I wanted to also emphasise the potential for knowledge exchange I hoped to offer on FDG best practice. But additionally, I felt strongly that I needed to emphasise that by observing, my aim was to simply understand how the groups foster social learning (or don't) and not to critique the group according to some evaluative standard. Thus, I held a Gatekeeper Workshop in July 2018 to expressly foreground the process of recruiting the FDGs to address these issues of access, clarity of objective and rapport with the Gatekeepers of the FDGs I had prospectively selected.

Six agricultural professionals were identified through word-of-mouth within the local farming community, the Centre for Rural Policy Research (CRPR), and the scoping exercise as possessing good knowledge of the regional learning landscape and existing FDGs as well as being Gatekeepers to existing groups as official facilitator or coordinator. Of the six invited to the workshop, only three could attend (as well as a trainee working with one of them). The other three were not available at the date and time set for the workshop and therefore offered to do telephone meetings instead. The workshop was held on the University of Exeter campus and lasted three hours, which was a significant portion of time to ask people to dedicate away from their work and expense to travel, in some cases, well over an hour from the rural areas where they live and work. Thus, I was conscious of needing to make it concise, well planned out and potentially interesting in terms of research objectives that may inform their practice in the future. First, I attempted to clearly explain what the research project was aiming to explore (e.g., social learning in FDGs). Second, I facilitated a discussion amongst the Gatekeepers to gather information about and map the existing FDGs in the South West based on their collective knowledge. I specifically asked for any suggestions of groups with a particular pedagogical focus, which would be interesting from a social learning standpoint. Third, I asked for feedback on the feasibility and appropriateness of the methods I was proposing to use throughout

the project. The workshop was thus a precursor to finalising the empirical design of the project.

Subsequently, I sent a formal request to the Gatekeepers via email to ask their groups' permission to conduct participant observation beginning in Autumn 2018 through at least Summer 2019. Interestingly, the group which was fully farmer-led had a member who acted as coordinator by organising meetings, so that member was my point of contact for the group. I also preliminarily attended a few meetings during Summer 2018 where I did not collect any data but just met people so that they would have an idea who I was when I asked if the group would allow me to observe their meetings. Later in the autumn, since I had been included on their communal email list, I became aware of some concerns within the group about whether there should have been a formal vote about me having been allowed to join. Another researcher interested in FDGs had approached someone in the group asking for access either to meetings or the members for interviews, and there were concerns voiced by a few within the group that they did not want to come to meetings where there was a significant portion of those in attendance either just taking notes and not contributing or asking questions and potentially disrupting the flow of the group (all valid concerns). The group had a firm commitment to operating democratically, but having grown organically over a short span of time from a very small group to quite a significant membership, they did not have formal procedures for what to do when approached by researchers and how they wanted to collectively agree on whether to allow outsiders to access the group.

I worked closely with the new joint coordinators at that point to discuss whether these concerns translated into me losing access to the group, how they wanted me to mitigate lack of understanding about my role as a researcher and feed into their broader discussions about potential future researchers' roles within the group. I ended up presenting briefly a bit more about my role as an ethnographer and generally what I was finding through observing my groups at their next meeting and was then asked to weigh into their discussion about how they were going to deal with future research requests. The group decided they would consider them on a case-by-case basis according to the person's proposed interaction and whether there were already researchers studying the group. It is important to note that of the group's huge email list 'membership' though, only

approximately 12-15 farmers were there for that particular meeting and the farmers who raised the concerns about the need to have a procedure in place for dealing with research requests were not at that meeting. The decision to consider case-by-case was then sent out to the membership via email after the meeting, and there were no objections (and I was allowed to continue attending).

4.3.3 Initial contact and permission to observe

For most of the groups, the facilitator introduced me via email to the group and as long as there were no objections, I was able to go along to a meeting preliminarily to present a bit about myself and what the project would involve. Asking for permission directly from each group was quite nerve-wracking as there could have been dissent from one of the members and I would have had to explicitly structure and explain in great detail how I would make fieldnotes to account for and exclude those participants who had not granted permission. At worst, I would have had to leave the group if they did not agree to such a separate observation process. Luckily, everyone who I approached, whilst potentially unsure as to what exactly my role in conducting participant observation during the meetings might look like, agreed. Thus, it was imperative that I provide a clear description of my objectives but also build rapport with the group members around the understanding as to what I would (and would not) do during the meetings, how I would use and attempt to make meaning from the data and that I was not interested in their specific figures but rather the discussion they fostered between them. This speaks to the need for clear communication about the role of research and collaboration with the research participants (Bryman, 2016).

4.4 Methods

4.4.1 Participant observation

Between October 2018 and November 2019, I attended 42 of the seven FDGs' meetings where I observed the groups' interactions. As described above, the form of participant observation I chose to employ was inactive participation, so I did not join in any of the discussions during the FDGs' meetings, with the exception of two meetings. One meeting of a dairy group which was based on goal setting was held around a conference table, and the facilitator specifically requested that I join them and participate in the exercises rather than sit separately, just observe and take notes. The other meeting was where another dairy group asked me to lead an exercise around long-term visioning and

succession issues at the last meeting I attended with them. Ultimately though, I chose an inactive participation approach because I did not want to disrupt the groups' discussions with questions that I might find interesting from an academic standpoint, but which were irrelevant from a practitioner standpoint, for instance. I also needed the participants to interact as normally as possible – as though there was not an outsider listening in because I did not want them to be self-editing or refraining from speaking freely. Building rapport and trust with the participants to avoid that possibility was imperative.

In carrying out my participant observation method, I initially thought that I might try to audio record the meetings during the parts where the participants were discussing benchmarking and issues on the host farm before the farm walk. I only did so a few times and due to the nature of many of their meeting spaces – a shed or barn, loud machinery driving past, spread out and hard to capture electronically, etc., those audio recordings were of relatively poor quality. But also, the coordinator for the two beef and sheep FDGs explicitly prohibited me from even mentioning the word 'recording' as the organisation they were members of was incredibly closed to outsiders. Any possibility that something may have been said that could potentially be used externally to demonstrate discord amongst the members made audio recording unpalatable. Thus, since I could not audio record two groups' meetings and the fact that the initial trial recordings were quite substandard, my primary tool was a research diary with notes from the meeting and afterwards upon reflection regarding how I had felt in relation to the topic, space, discussion, amongst other observations.

I recorded all of my notes in a single notebook, which was sometimes challenging as we rarely had a table in front of us. Instead, I balanced my notebook on my lap sitting on hay bales in the shed or in the corner of the host farmers' kitchens or writing as neatly as possible standing up. Once outside on the farm walk, I often would take notes on my phone since it was often raining or windy or both as we walked around the yard and through the milking parlour. I was a bit conscious of looking like I wasn't paying attention though when taking notes on my phone, so if possible, I took my notebook with me. In analysing my data after attending FDG meetings, I typed up my handwritten fieldnotes to reprocess the situation and highlight the significant comments, reactions and

issues noted with boldfacing, underlining, comments about emerging themes and ideas for further analysis to which the notes contributed.

My observation notes included examples from the FDGs' discussions that demonstrated elements of social learning theory. In addition, thematic analysis of the data revealed connections to broader conceptual issues, such as community, support, conflict, collective action, change and personal / business resilience. I tried to record observations of group dynamics and explicit examples where one could hear the participants engaging with new knowledge and see them negotiate meaning, relevance and applicability to their personal context. I often noted particularly obvious examples of group agreement or disagreement based on opinions being offered and what the general tone seemed to be in relation to expert opinions. Many examples were given of participants' changes they had made over the years, and I would try to document their expressions of empathy and sharing to help the other participant struggling with a similar issue and deciding whether and how to change. Points of confusion were significant in trying to understand how the group navigated shared lack of or incomplete knowledge, and potentially the most insightful moments were when participants challenged each other's assumptions and questioned them as to how they would have done or should do things differently given the circumstances and out-of-the-box thinking.

4.4.2 Semi-structured interviews

Observation of the FDG meetings was supplemented by 24 semi-structured interviews of both the facilitators or coordinators of each group as well as farmers from five of the FDGs. I began with the five facilitator / coordinator interviews between September and December 2018 as I had had more direct contact with them as Gatekeepers in the initial months of my fieldwork than the FDG participants. I was interested in finding out more about their facilitation background and any training they had received, approach towards facilitation, group organisation and topic management, objectives around learning and group advancement as well as change in relation to farm businesses' decision making and management for resilience. I arranged each in-person interview for the time and location that was most convenient for the facilitator / coordinator, which was often at their office or home or a central meeting point. Each interview was

intended to be and predominantly went no longer than one hour and was audio recorded upon gaining each interviewee's informed consent.

From January through to July 2019, I then conducted 19 semi-structured farmer interviews after at least three months of attending their group's meetings and getting to know them. This helped me identify who would be interesting farmers from the groups to interview due to their contributions during the group discussions (e.g., knowledgeable, bold opinions, reserved demeanour), longevity in the group (e.g., founding member, new member), farming system (e.g., recent convert to block calving, no-dig), business structure (e.g., partnership, tenant, new entrant), etc. I also asked the facilitators / coordinators for suggestions as to who they would recommend I speak with. I could not interview any participants from the two beef and sheep groups (the organisational FDGs), however, as the overarching organisation again was concerned about potentially uncovering discord within the membership and the Gatekeeper did not allow access to anyone individually without express permission. I approached individual farmers from the other groups about a one-hour, in-person interview that would be most convenient for them in terms of date, time and location; every one of them was conducted on-farm. I conducted three from one of the Somerset dairy groups, four from the Dorset dairy group, two from the other Somerset dairy group, four from the Devon/Cornwall dairy group, and three from the Veg Growers group. Additionally, I interviewed three farmers who are active in other FDGs that are particularly interesting from a structural, business decision-making standpoint, e.g., cooperative, buying group, multiple groups with employees attending, etc. Each interview was again intended to be no longer than one hour (though many went closer to an hour and a half due to chatting and small talk) and recorded upon gaining each interviewee's informed consent.

For the farm semi-structured interviews, I decided that interviewing the lone farmer who attended the FDG on a regular basis would not give a full enough picture about how knowledge exchange and learning was incorporated into the wider farm and contributed to change within the business. Therefore, the interviews were setup as joint interviews with key people influencing, participating in, impacted by, or sharing the experience of the farmers' decision making (see also Riley et al., 2018). Who the joint interviews were to be held with depended on each farm's context, but most were with the spouse / partner of the farmer

who attended the FDG. He or she often worked in some capacity helping out on the farm (e.g., calving, bookkeeping, etc.), was a sounding board for the ideas encountered at the group meeting and an active participant in decisions whether to make certain changes to the operation. For example, one was a pair of brothers who form half of a multi-generational partnership, another was a farming couple who attend the meetings and farm equally, and one interview was with the lead growers for a community-supported agriculture (CSA) operation independently owned by a charity. The interplay between the joint interviewees worked quite well to bring out the multiple complexities of farming, family life, finances, location, natural resources, culture, tradition, heritage, amongst other factors influencing farm business decision making in relation to learning and (potential) change on-farm through FDG participation.

To maintain anonymity, a list of each coded interview linked to a specific FDG cannot then be linked to identifying information, such as age or gender. Rather, the interviewee(s) will be outlined and described in chronological order as to when the interviews were conducted. The first interview was with a young male farmer in partnership with his parents, and the second interview was with a young female vegetable grower. The third interview was arranged with an older male farmer in one of the FDGs and his wife actively participated in the joint interview. She assisted as needed in the dairy operation and they jointly made decisions about the business, but she did not attend the FDG meetings. The fourth interview was with a younger male farmer and his wife, who had not been fully informed as to who I was or what the research was about before I arrived; therefore, the interview was stopped and informed consent gained when she joined as she had been in the shower for the first five minutes. She did not assist in the dairy operation physically, but they made decisions together as a couple as well as with the male farmer's parents. The fifth interview was with a younger male farmer and his wife who were part of a family partnership with his family running multiple farms, so whilst they spoke about the farm and different options, she made it clear she was not from a farming background and did not particularly like the family business dynamics of dairy farming. The sixth interview was arranged with a female farm owner who had a prominent role in a FDG and her husband, who was the primary operator of their farm. The seventh interview was with a young farming male and female couple who jointly ran a very small

vegetable operation on land rented from his family. The eighth interview was with an elderly male farmer, and the ninth was with a male farmer and his wife who operated as a dynamic partnership whereby he provided the physical labour and strategic direction of the business and she handled all of the financial management involved with their expansion, but she did not attend any FDG meetings. The tenth interview was with a farming male and female couple who were in partnership with his parents, and each partner attended a different FDG within the study. The eleventh interview was with a male farmer, and the twelfth interview was with a female farmer and her husband who also farmed in the same operation, which had been established by his family and was set up as a large company with his parents and siblings. The thirteenth interview was with a female farmer and a male farmer who jointly ran a vegetable growing operation owned by an organisation. The fourteenth interview was with two brothers who were active in their FDG and farmed in partnership with their father and uncle. The fifteenth interview was with a female farmer, same as the sixteenth interview. The seventeenth interview was with a female farmer, whose husband joined halfway through and changed the dynamic of the conversation by dominating answering the questions and interrupting or talking over her. The eighteenth interview was with a young male and female farming couple who both attended the FDG and provided physical labour, financial management and strategic planning into the operation, and the nineteenth interview was with a female farm owner who provided all financial management and joint strategic planning with her farming husband. Table 1 below provides an overview of the 19 farmer / joint interviews.

Interview number	Interviewees and relationship	Attendee(s) of FDGs from joint interviews
1	Male farmer	
2	Female farmer	
3	Male farmer and wife	Only male farmer
4	Male farmer and wife	Only male farmer
5	Male farmer and wife	Only male farmer
6	Female farm owner / manager and husband (primary operator)	Both (separately)
7	Male and female farming couple	Both

8	Male farmer	
9	Male farmer and wife	Only male farmer
10	Male and female farming couple	Attended different FDGs in the study
11	Male farmer	
12	Male and female farming couple	Only female farmer
13	Female farmer and male farmer (running a farm owned by an organisation)	Both
14	Two brothers / male farmers	Both
15	Female farmer	
16	Female farmer	
17	Female farmer, joined by husband (farming in same operation)	Only female farmer
18	Male and female farming couple	Both (separately)
19	Female farm owner / manager	Only female farmer

Table 1. Overview of semi-structured farmer / joint interviews conducted

In the semi-structured interviews with the farms, I endeavoured to uncover examples of how social learning is promoted through their FDG interactions and critical discourse. In accordance with social learning theory, I inquired about the way in which FDGs promote learning through behaviour modelling amongst the participants, how role modelling is important in the prominence of certain opinions and/or ideas being considered or taken up, and how the groups' structure and participant interaction encourages self-reflexivity by the farmers in their business decision making. How learning through engagement with the group relates to resilience was another key area of questioning I explored with the interviewees, examining how they considered various domains (economic, social and environmental), timespans (short- and long-term) and scales (farm, regional, national and global) in relation to the social learning in the group.

Analysis of the semi-structured interview recordings was conducted through listening to each and taking detailed, timestamped notes of the conversation rather than verbatim transcription. This approach was purposeful to allow for active listening to the recordings more than once during the course of

the analysis, noting tone of voice and interplay between joint interviewees, re-creation of the interview environment and reflection on how I as the researcher felt in the different scenarios with the various participants (Doney et al., 2017). Throughout the iterative analysis, comments were added to the written outline of each interview as well where the conversation related to the various themes emerging and direct quotes were transcribed fully where they were particularly on point.

4.4.3 Feedback session with FDGs

The final method I employed within the project was to hold feedback sessions with each FDG around the themes emerging from my data analysis. These sessions were conducted from the end of October through November 2019 in conjunction with the FDGs regular meetings. I worked with the facilitators / coordinators to arrange how I could fit the session into the meeting agenda, typically at the end of the official discussion and farm walk. I was able to conduct this session with five of the seven groups; the two which I was unable to revisit were primarily due to their infrequency of meetings and the small amount of time I was able to dedicate to these sessions.

The aim of these feedback sessions was to attempt to abide by the resolutions mentioned at the outset of this chapter: not to be solely extractive in my approach towards the groups and to feedback hopefully useful insights about best practices within FDGs relating to learning and change. The way each session was structured was dependent upon the group's structure, but it was also influenced by my relationship to the group and its participants. For example, the groups which actively benchmarked and had a culture dedicated to in-depth sharing and challenging each other typically met on a monthly basis, so by having more direct contact with them, I (perhaps inevitably) had stronger relationships with those groups. Because they were used to highly structured, long benchmarking sessions where they performed in-depth analysis of each other's KPIs as well, I felt more confident structuring the session to dig deeper into their collective insights and potential critiques of my data themes.

The groups which were much more oriented to having expert presentations theoretically would have responded positively to me standing at the front of a room with a prepared PowerPoint and presenting the results of the data analysis. The point of this method was not to simply tell the groups what I had

found though; rather, it was to have a reflective session where I also wanted their feedback on my themes. Thus, my feedback session with one of the organisation-led FDGs looked very different from the benchmarking groups due to drastically less horizontal interaction and sharing between participants. The challenge of that session was the setup of the meeting, which was not conducive to any type of presentation or collective feedback by the group. It was held at a restaurant which was very noisy and the group was sat along a long table, so only a section of the table closest to me were able to hear what I was explaining. Thus, I was only able to provide a brief snapshot of a few themes that were emerging and a few follow-up questions for them to explore amongst themselves whilst I hurried down to the other end of the table to re-explain what they had not been able to hear. Unlike the other feedback sessions, therefore, I was not able to converse with the group as a whole but rather could only interact with the small group sat next to me as then lunch arrived. A few of the participants farther down the table wrote down thoughts and reflections as I had asked them to do from their discussion, but on the whole, it was very fragmented.

Written notes from the FDG participants produced through the facilitated activities as well as my notes and audio recordings of some of the discussions captured the data from the feedback sessions. Analysis of the FDG participants' feedback was then used to inform subsequent data analysis and development of the themes explored throughout the following chapters.

4.5 Conclusion

This chapter outlines the methodological approach framing this study of seven FDGs' learning processes. An ethnographic methodology was used in an attempt to construct meaning through interactions between and with the participants. The private, or at least non-public, nature of the groups necessitated careful consideration of ethical issues around confidentiality and anonymity. Additionally, as researcher reflexivity needs to be undertaken throughout the ethnographic process, in this study it centred around mitigating researcher bias towards the groups by continuously challenging the scenarios observed for issues of power and relational dynamics at play. 'Gatekeepers' were identified to gain access into these closed networks. To ensure they had adequate and nuanced knowledge about the project prior to presenting my request for access

to the groups, a Gatekeepers Workshop was held to discuss the aims, objectives, methods that would be used, etc. Upon gaining access to all the groups' meetings, participant observation was the initial method employed for data collection, followed by semi-structured interviews of both the facilitators / coordinators and members of the various FDGs. Feedback sessions were held with five groups after data analysis was initiated to create a dialogue with the participants around the themes emerging from the data and their different opinions, interpretations and perspectives as to what the data suggested.

CHAPTER 5 – MEET THE FARMER DISCUSSION GROUPS

“Don’t Stop Me Now”³⁰

I was really nervous walking up to the farm office. As would become the norm over the course of the next year, I had just spent a frustrating fifteen minutes lost on a country road in rural Devon. The postcode for the meeting had taken me to the general area, only to have my ‘sat nav’ announce “You have arrived at your destination” as I stared through a gate into a field dotted with cows. Following a seven-point turnaround between the hedges lining a road big enough for 1.25 cars to fit down, I finally found the lane to the farm where I would be attending my first meeting of this farmer discussion group. The facilitator greeted me as I walked up (early, so I was the first there) and offered me a coffee or tea and a biscuit, which I gratefully accepted. I waited anxiously for the farmers to arrive.

The host farm for that dairy discussion group’s monthly meeting was a beef finishing unit, selected as an example of a farm that was turning a good profit, despite the dismal beef market, through a large supermarket supply chain contract. The farmer gave me a friendly greeting, completely nonplussed by having a researcher present and being asked to sign an informed consent form as he had previously done a Nuffield scholarship. He also gave presentations on a relatively frequent basis to farmers, companies, visiting delegations, etc. Thus, the meeting room was complete with projector and conference table, more formal than any other on-farm meeting space I would visit during fieldwork, barring one or two. Normally, the meetings were held in a farm shed on hay bales, farmhouse kitchens and lounges, or off-farm at veterinary offices, pubs/cafés or town halls.

One by one, the discussion group members started showing up. They made small talk about how each other’s calving season had gone as it was November and many of them were autumn ‘block calvers’ – they would have started late August and finished calving their whole herd basically by the end of October. Cups of tea or coffee were made and the facilitator asked that anybody with a topic or concern they wanted to discuss add them to a flipchart in the corner – only a few contributed ideas. Finally, the facilitator kicked off the meeting with a welcome and asked that all the group members introduce themselves to the host. Then, it was my turn to explain who the random woman at the table was.

“Hi, I’m Beth!” I chirped. “I’m a farm girl from Iowa.” The guy sitting next to me nodded in approval towards his fellow group members at this mention of a farming background. I had cleared my first big hurdle. “But now, I’m doing a PhD at the University of Exeter and I’m interested in trying to understand how learning happens in farmer discussion groups.” A few mildly curious looks, some furrowed brows. I carried on and explained that I would be following seven discussion groups over the course of the year and taking notes during the meetings, trying to understand how learning happened within those scenarios. I assured them that everything would be held confidentially and anonymously with no identifying information used to tie it back to them. “So if you guys are okay with it, I would love to follow your group?”

I held my breath. If they didn’t agree, worst case scenario I would have to leave immediately and search for, approach and request permission from another group. A long, arduous process I was keen to avoid. Thankfully, everyone agreed and signed the consent forms. I could relax now and listen.

³⁰ Mercury, F. (1978). Don’t Stop Me Now [Recorded by Queen]. On *Jazz* [studio album]. London, England: EMI Records Ltd. (10 Nov).

5.1 Introduction

This chapter aims to introduce the qualitative sample of seven FDGs from this research study. As they are the basis for the rest of the thesis, a clear understanding of their ‘who, what, where, when and how’ is an important foundation to have. The various defining characteristics of each of the groups are described in detail to attempt to paint a picture about how many people were typically at the meetings, where they were held, what time of day, how often, what types of things they talked about, and what role socialising played within them. Key differences between the groups are also pointed out as they affected how they functioned, who was responsible for different tasks, how much investment people made to attend, etc.

Table 2 below provides a basic overview of the groups to start off with and subsequent descriptions will build upon that foundation.

Type	Composition	Location
Beef/Sheep A	Approx. 25 of 500+ email list	Devon/Somerset
Beef/Sheep B	Approx. 15 of 500+ email list	Devon/Somerset
Dairy A	15 farms	Somerset
Dairy B	15 farms	Dorset
Dairy C	10 farms	Devon/Cornwall
Dairy D	Approx. 15 members, 100+ email list	Somerset
Veg Growers	Approx. 20-25 of 100+ email list	Devon/Somerset/Dorset

Table 2. Overview of FDGs studied in South West England

5.1.1 Locations and sectors

Participant observation of seven groups, typically meeting on a monthly or quarterly basis over the span of a year, equalled: a *lot* of driving. Given the time investment to get to and from the meetings as well as petrol expenses, I had to be quite selective geographically in choosing the groups. All were based in Devon, Cornwall, Somerset and Dorset, with the average distance to meetings around 50 miles each way. I had the good fortune of carpooling to a handful of meetings, which not only helped cut costs but also allowed me to be privy to some

incredibly insightful conversations between farmers on the way home from meetings. Doubts about certain techniques or management styles were aired that had remained unspoken at the meeting. Background information about farms, individuals and groups came out as well as context as to why certain decisions may have been taken. And critical comments were exchanged about certain personality styles within the group, e.g., resistant to taking suggestions on board, argumentative, meek and/or defeated.

As outlined in Chapter 4, I performed a scoping exercise to gain an overview of the available groups throughout the South West of England before attempting to narrow down which FDGs to approach. Given the predominant farming practices, typology and climate in this part of the country, there were many more livestock-focused FDGs than arable, for instance. Thus, of the three benchmarking or CFP (comparable farm profit) groups, meaning they share full financial breakdowns of their farms according to KPIs, groups selected, they were all dairy groups that were farmer- and/or consultant-driven. This was in part due to availability but also access: the beef and sheep groups I identified did not tend to share and compare figures, whilst the dairy groups that I found and could gain access to benchmarked against each other. The two beef and sheep groups I ended up choosing were organisation-led but they were also demographically significant, i.e., one women's group and another specifically for young farmers (under 30s). Another women's group was available from the dairy sector, created and led by an organisation. My final group consisted of small- to medium-scale vegetable growers, which was completely farmer-created and -led, having originated as a book club of eight people and expanding to a membership list of over 100 growers.

5.1.2 Membership

The FDGs are broken down below in terms of membership composition and length of collaboration. I refer to the groups as private if they had a closed membership of only a certain number of farms (20 or less), or semi-public if they had much larger (e.g., 100+) email lists of 'members' to whom the meeting details were communicated and attendance was open.

Dairy A: Private group with 15 dairy farm members that predominantly ran autumn block-calving systems. Many were also low input, where the cows were only housed and fed indoors for approximately three months over winter,

depending on the weather, and grazed outdoors the remainder of the year. It had a proportionately large core of farmers that had been collaboratively learning together in the group since it was founded over 20 years ago. Numerous meetings were attended solely by the primary male farmer, but occasionally a herdsman or female partner also attended the meeting if the topic was particularly relevant, e.g., staff management, foot trimming, etc. Of all their meetings I attended throughout the year, I was not the sole woman attendee three times.

Dairy B: Private membership of 15 dairy farms that operated as spring block calving units, so their entire herds were calving for about 9 weeks from early- to mid-February through April. They were nearly all low input systems and many of the original farms who formed the group 17 years ago were still members. Again, the predominant trend was for just the male partner in each operation to attend the meetings, but contrastingly, two of the farms were led and represented by women and another was farmed by a husband and wife. She often attended on their behalf whilst he stayed home with their young children.

Dairy C: Private membership of 10 dairy farms that primarily ran autumn block calving operations. The group had been established 13 years prior, predominantly to draw together local farmers known to the consultant as low input, grass-based systems – particularly those interested in or in the process of moving towards self-feed systems. Self-feed management allows the cows to choose when and how much to eat from the silage clamp setup in the farmyard as opposed to using a mixer wagon and/or distributing feed at specific times during the day, reducing labour and machinery costs. I was always the only woman in the room for these meetings, except for the host farmer's female partner who provided the teas and coffees at the start of the meeting but did not join the discussion. However, some of the farmers brought their herdsman along if the topic was of technical interest.

Dairy D: One-year old group composed of a semi-public list of 100+ women involved with dairy operations to varying degrees. The loose requirements for membership were that their farms and/or farming vocations were located in Somerset, but farm formats varied widely in terms of size, all-year-round versus block calving, milk contracts and production standards, high versus low input systems, etc. It was not a fixed membership like the benchmarking

groups, but rather various people could join throughout the year. Each meeting was attended by between 15-20 women.

Beef & Sheep A: Six-year-old group of women involved with beef and sheep operations to varying extents that chose whether to engage based on a meeting announcement in the organisation's weekly semi-public newsletter. The newsletter reached approximately 500 people within a specific geographical area, and whilst the unifying characteristics of the participants' farms were that they produced beef and/or sheep, they again varied in size, extent they housed indoors and bought-in feed, how they sold their finished products (e.g., livestock market, supermarket contract, etc.). Each meeting was attended by approximately 25 women.

Beef & Sheep B: Six-year-old group specifically created for young farmers (under 30s) from a certain geographical area farming beef and/or sheep in similarly varied systems as the former group. Created and promoted by the same organisation as Beef & Sheep A, their membership was semi-public in terms of access to meeting announcements through the weekly newsletter and permission to attend granted by the organisation coordinator. Roughly 15 new entrants attended the group's meetings.

Veg Growers Group: Three-year-old group which started informally as a book club amongst friends who were all relatively new growers. Spread throughout the South West of England, the members ran market gardens averaging 1-2 acres for farmers' market stalls, CSAs, wholesale to local restaurants, veg-box schemes, on-farm sales, etc. Roughly 20-25 growers from the 100+ email list attended the group's meetings on a monthly basis. Growers often invited other growers to attend without needing to seek permission from the coordinators, for instance, and were subsequently invited to join the mailing list. Thus, I classify this group as semi-public since only growers were members, but there was not an exclusive closed group of people who were invited to come each time.

Type	Meeting Frequency	Composition	Public / Private	Life Span	Format	Structure
Beef/Sheep A	Approx. 6x per year	Approx. 25 of 500+ email list	Semi-Public	6 years	Expert presentation / farm walk	Organisation-led / Coordinator
Beef/Sheep B	Approx. 3x per year	Approx. 15 of 500+ email list	Semi-Public	6 years	Expert presentation / farm walk	Organisation-led / Coordinator
Dairy A	7x per year	15 farms	Private	20+ years	Farm walk / benchmark	Facilitator-led
Dairy B	11x per year	15 farms	Private	17 years	Farm walk / benchmark	Facilitator-led
Dairy C	5x per year	10 farms	Private	13 years	Farm walk / benchmark	Facilitator-led
Dairy D	4x per year	Approx. 15 members, 100+ email list	Semi-Public	1 year	Expert presentation / farm walk	Organisation-led / Facilitator
Veg Growers	10x per year	Approx. 20-25 of 100+ email list	Semi-Public	3 years	Farm walk	Farmer-led

Table 3. Breakdown of FDGs studied by defining characteristics

5.1.3 Meeting format

The three benchmarking FDGs (Dairy A, B and C) held their regular monthly meetings on a host farm for 3.5-4 hours in the middle of the day (between milkings). Dairy B and C started their meetings with a go-round of every attending members' figures at that point in the season, whether it be calving rates, grass growth, artificial insemination percentages and straws of semen used (sexed or not), kilos of silage or cake fed per animal per day, etc. For all three of the groups, the host farmer explained their dairy setup alongside the farm's CFP report and any particular issues they were having, which he or she asked the group to look out for and offer suggestions as to how to resolve. The groups then went on a farm walk, whether sunshine or gale force wind and rain, stopping at particular locations to have a concentrated discussion about available options based on the participants' varied experiences, trial and error, and wishful thinking, e.g., 'if I were you I would...', 'if I could do it again' or 'if I could have designed it from the beginning' since many were tenants and had to deal with the farmyard setup and buildings they inherited. Two groups brought their own packed lunches to eat during the meeting and the other group's meetings ended with a pub lunch, where the discussions continued but they also caught up socially. They each had an annual benchmarking meeting, where their discussions went in-depth comparing figures between farms on KPIs. Those meetings were held indoors in a meeting

room with a buffet provided and/or a bar available to purchase drinks (which nearly everyone did whether it was midday or evening).

Dairy D met in an agriculture consultancy's meeting room, either around a large table in a U-shape or classroom style. A non-benchmarking group meeting quarterly, each session covered a particular topic which either the participants had indicated they wanted to cover or that the facilitator had organised. Initially, there would be an introductory presentation by the speaker with discussion questions posed throughout as well as activities to engage the participants. Coffee, tea and biscuits were provided for the late morning meetings, but they wrapped up after a few hours so there was no shared lunch time. In part due to the recent formation of the group as well as the fact that there were new participants each time, though there were many repeat attendees, every meeting started with a round of quick introductions of their names and farms. The private benchmarking groups I followed only did this if they were visiting a non-member's farm.

Beef & Sheep A and B either visited host farms that also produced beef and/or sheep, or something totally different (e.g., large-scale veg producer and processor) that provided an interesting example from a management or processing perspective. Or they had expert presentations in an establishment local to their specific geographical area. The farm tours began with the host farmer providing a description of the farm and then leading a tour of the facilities and answering any questions posited by the participants. The expert presentations involved a prepared talk delivered for about 45 minutes to an hour, with PowerPoint and/or handout, followed by questions from the participants. The farm tour meetings were held in the middle of the day and the expert presentations were held in the evening. One meeting had a pub buffet following the talk, another had an organised meal at the on-farm café before the farm tour, another involved cakes at a café in the heart of the area where their farms were located, and other meetings involved pasties and biscuits at the end.

The Veg Growers Group meetings were all held on a host farm, strategically switching between eastern and western locations throughout Devon and surrounding bits of Somerset and Dorset. At the beginning of the year, the group decided on a list of topics for the meetings and then members volunteered

their farms to host. The grower(s) for the host farm then led the tour and discussion around the designated topic and provided a space large enough for a potluck dinner. We all brought a dish to share and often had to bring our own plates and utensils, and everyone pitched in to wash up afterwards. The format of the meeting often varied depending on the topic covered, scale of the operation we were visiting, at which point in the season it was being held (e.g., summer versus winter evenings), and whether it was a 'sit-down' type of topic (e.g., crop planning, chef-grower relationship building, etc).

5.1.4 Objectives & topics

All of the benchmarking groups identified learning as an objective in order to improve efficiency and profitability within their members' dairy operations. The Beef & Sheep groups aimed to provide a platform for peer support as well as learning; same for the Veg Growers group. Dairy D also had the specific objective to provide a space for women involved in some capacity in the dairy industry to learn and feel comfortable engaging with various topics. The facilitator told me she had been approached by a number of women over the years who did not feel comfortable either attending and/or asking questions at predominantly male-attended dairy discussion group meetings (F2 interview, 12 Nov 2018). Whether that was the reason or that double investment of the businesses' personnel time was not possible due to kids, jobs, milking, etc., many women who frequented this group's meetings had male partners in other FDGs that they did not also attend.

Each of the dairy benchmarking groups would cover a specific set of topics relevant to the host farm, e.g., calf sheds, self-feed setups, tracks (to various fields throughout the grazing platform), lameness / foot trimming, manure pits / slurry pumps, water troughs, lighting, and always parlours. Alternatively, some meetings were specially designated for visiting non-group members' farms who were role models in terms of efficiency, profitability, productivity (e.g., milk yields, solids, breeding, value-added processing, on-farm sales), staff management and/or contracting and business entity format. The members would ask questions and engage in debates as they walked around the farms about options to address areas of concern and the KPIs provided by the host farmer in relation to their own. Each of the three do an annual 'away trip'; this year they visited farms in a

different part of the South West or Midlands, but formerly they have gone as far as Ireland, Scotland, and the Netherlands.

The Beef & Sheep groups' expert presentations were about technical aspects, such as the electronic tax filing changes, mental health and wool quality grading, whilst farm meetings were focussed on the host farm's setup, inputs (e.g., feed, veterinarian bills, machinery and arable for feed or contracting costs), output (e.g., liveweight carcass targets), timelines for selling steers for finishing, etc. The participants asked questions of the expert or host and collectively agreed / complained about market prices, organic products versus conventional, 'the vegans' or the unknown future for British beef and sheep farming in light of the unsettled (at that time) post-Brexit deal (discussed in Chapter 2). Beef & Sheep A went on an away visit to Yorkshire during the year I conducted fieldwork. Partly due to a scheduling conflict, but also since I had not been specifically asked whether I wanted to attend (whereas the benchmarking groups' facilitators and farmers had invited me), I did not attend the trip with that group.

The Veg Grower Group's topics ranged from irrigation, time-saving techniques, tools and mechanisation, crop planning and bed design, speciality crops (e.g., flowers), wholesale marketing, social media, volunteer management and pest / disease management. The farm walk would be hosted by one of the members with a focus on the theme for the meeting, and the growers would ask questions and share different techniques, approaches and problems. The discussion often naturally expanded beyond the specific meeting theme into related issues the growers at that meeting were facing, such as technical solutions for how to intercrop with natural detractors to ward off the pest.

5.2 Similarities between FDGs

5.2.1 Intended outcome = learning

The predominant objective of all the FDGs I encountered over the year was to promote learning amongst the participants; specifically, peer-to-peer learning. People I encountered in FDGs often participated for many years, sometimes decades, citing learning as one of the primary reasons they continued to invest time and money into their groups. However, numerous members from different groups also confided in me that they did not often learn that much at each meeting. Rather, they would rationalise it to me that just picking up 'one

nugget' at a meeting 'makes it worth it' (Veg growers meeting, 12 Nov 2019). The time and effort invested to attend a meeting and see another way of thinking about and doing things was worth it if they identified a potential change to adapt and apply to their operations, knowing who they could go back to for more details about how that person 'did it' long after the meeting finished. Thus, examples of learning from the FDGs' meetings were central throughout my observations of the groups. Gradually though, I also became aware of broader distinctions between technical and management discursive contexts within the groups, power dynamics, personalities, histories, challenges, etc. that all impacted upon the learning process. Those distinctions were invaluable in endeavouring to understand how social learning played out in the FDGs as influenced by the learners' sociocultural contexts and the groups' structures and norms.

5.2.2 Social element

Whilst the extent to which the various FDGs observed maintained a social element differed, all of them involved members sharing meals, food, drinks, laughter, and time to chat amongst themselves in addition to the organised meeting / discussion in which they were meant to engage around a particular topic. Out of the seven FDGs, the newest group, Dairy D, was the least social both in structure (shorter meeting with just a tea break) and familiarity (new group with new attendees added each time). This element of fun, or as some FDG participants stated 'getting to see your friends', is important from the perspective of incentivising busy farmers to actually get off-farm for part of the day and wanting to take time to go to a meeting. Nonetheless, I had both facilitators and farmers warn against groups becoming too social, or in their words a 'farmer club', that was not focused enough on learning since that was the whole point in investing time and money into that type of endeavour.

5.3 Key distinctions between FDGs

5.3.1 Formation

As pointed out in relation to the groups, one of the key differences between the FDGs was the driving force behind their creation. In one case it was completely farmer-led, others were driven by an organisation that aimed to promote farmer-to-farmer interaction. The benchmarking groups tended to be somewhere between farmer- and consultant-created. Some of the farmers had known each other or of each other from living relatively nearby for a number of

years, or they may have seen each other or met at other forms of knowledge exchange and learning events. Whilst that may not have necessarily led to immediate formation of a fully-fledged benchmarking group to meet on a regular basis, share all their figures and critique each other's operations, some of the groups' origins did involve a small group of farmers taking the initiative to form a discussion group. Those eventually evolved to the point where they began sharing figures, versus others where a consultant/facilitator brought together multiple clients as well as similar farmers in the surrounding region and pushed them to engage in a totally new way.

5.3.2 Funding

Another distinguishing factor between the FDGs was the amount of 'skin in the game' they required. Again, I typically saw this delineated along the lines of benchmarking versus farmer-led or organisation-led groups. Private benchmarking group members paid a fairly substantial membership fee each year (e.g., £200-500) to the organising consultant, so only those who paid had access to not only the discussions but also everyone's figures. Other semi-public groups required attendees to pay a nominal fee of £5-20 per meeting. Thus, of the 100+ people who were notified of the semi-public groups' meetings, different people could / did show up each time and simply paid the attendance fee at the door rather than having to commit to a full-year membership fee. The Veg Growers meetings and membership were completely free.

The large membership fee for benchmarking groups would have been used to cover the facilitator's time to organise and conduct the meetings. Additionally, it contributed to the away trips those groups organised each year and potentially a shared meal at the benchmarking 'sit-down' meeting. Organisational FDGs' meeting fees often simply covered the food provided and created a funding stream to sustain the organisation's promotion of those types of collaborative learning activities. The fees for all groups may also have been used to pay expenses for any expert presentations (e.g., employee recruitment, leadership and management strategies), which in some cases were likely quite substantial. As described above, the Veg Growers' meeting meals were a potluck so that everyone internalised the cost of food and the administrative burden of organising rather than one of the members or the (co-)coordinators having to arrange a restaurant reservation or catering.

5.3.3 Facilitator

A final key distinction between the FDGs was whether they had a (professional) facilitator for their meetings or not. The benchmarking groups had facilitators, who were in many cases dually serving as an agricultural consultant for some of the members in the group, advising on technical issues (e.g., grazing management and feed supplements) one-to-one with those individuals between meetings. Those facilitators therefore had large amounts of technical knowledge around the subjects the groups were discussing, leading to complications as to 'which hat they are wearing' – expert versus facilitator (discussed further in Chapter 9).

Dairy A and B had both been started by a different facilitator over 15 years before, and either that person had moved on because of personal circumstances or the group had decided they needed a new facilitator. Dairy C had been started by its current facilitator as had Dairy D, but the latter was different because the facilitator was involved through membership in the founding organisation. The Beef & Sheep A and B did not have a facilitator for their meetings, but rather a representative of the organisation under which they were housed acted as a coordinator. The coordinator sent out the meeting notices via email, organised the venue / host and kept the group on track during the meeting with timing. The Veg Growers Group did not have a facilitator or an external coordinator, but rather, when I started following the group, they had one member-farmer who acted as internal coordinator or chairman of the FDG. During the course of the year, they underwent a transition (discussed further in Chapter 8) to new co-leadership by two other members.

5.4 Conclusion

This chapter presented a detailed breakdown of the various defining characteristics of the seven FDGs within the qualitative sample for this ethnographic study. Whilst they shared many basic similarities as to meeting format, objectives, etc., they also differed, sometimes significantly, in other ways, such as whether the membership was private or semi-private, size of the meetings, farm types of the members, how often they met, fees required to be a member versus to attend a meeting, and whether they had a facilitator leading the meetings. Learning was a unifying objective stated by all of the groups as well as providing some type of social support to peers. Reviewing my field notes from

meetings early into the year of conducting participant observation, they highlight the process I had to go through to try to get to grips with who these groups were and how they flowed. What types of questions did they ask, respectively? How did responses stimulate reactions or debate? How did the members interact with each other? How did the facilitator intervene at certain times and keep the pace? Somewhat of a pattern started to emerge: there would be an introduction to the farm's setup, size, outputs, and other basic information before proceeding on the farm walk. The groups would walk through the barns / sheds and ask questions, stopping to discuss at various points, and continue on to nearby fields or load up in vehicles to carpool farther away, e.g., to see young stock. The overview above was an attempt to condense that year-long process of getting to grips with the groups' 'who, what, when, where and how'. Their shared characteristics, but more particularly their differences are vital to the following chapters' analyses around whether, how and why (or why not) social learning played out in the context of the various groups.

CHAPTER 6 – BEHAVIOUR MODELLING

“Separate Ways (Worlds Apart)”³¹

The group members were sat around the shed on hay bales sipping cups of tea and coffee, whilst the facilitator opened the meeting with a recap of the previous meeting. Despite the fact that they were all dairy farmers, they had visited a large beef farm to see how it was setup and to gain insights into how an industry-leading farm managed contracts, costs, challenges, etc. Having attended the previous meeting, I listened intently as the facilitator asked for feedback about what they thought of the operation. One participant made a comment about the electronic scales the beef farm used to regularly have a firm handle on the rate of gain and kg still needed for sufficient carcass weight rather than ‘eyeballing it’, stating that he reckoned there was a lot of variation in how much people thought their dairy cows weighed and such a setup would help alleviate uncertainty. Another commented on the impressive investment that had been made in the facilities for staff and hosting guests. However, one of the participants derided, “Yeah but, all those calves stuffed into the pens though, shittin’ in each other’s faces”. Many others nodded in agreement and a few muttered about similar problems they had seen with cleanliness.

Having just started fieldwork, I had not visited enough dairy farms to know what typically would be expected for calf-rearing setups in terms of space, density, bedding, etc. I wracked my brain trying to remember the calf sheds. In terms of rough dimensions, a big shed had been divided up into only a few pens lined with straw, approximately 10-15 metres deep and 10 metres wide. There had been quite a few calves in each pen (possibly between 30-35), but I had been listening more to the system described by the calf rearer to indicate that the freshly born calves received colostrum so that the different staff members did not miss that essential step between shifts rather than looking at the cleanliness. Nobody had made a comment or asked a question about the latter during the visit, but given the tone and nature of their comments afterwards, it became clear to me that their concern with that issue was not simply in relation to calf health. It seemed to almost offend them that a farmer would allow his stock to be that dirty, which indicated to me a deeper connection to what it meant to them to be a ‘good farmer’. Clearly, there were acceptable norms within the group that set the standard by which others were assessed—whether they were uniformly met by all the participants, even if they joined in critiquing someone else’s cleanliness, remained to be seen.

6.1 Introduction

As discussed in Chapter 3 regarding social learning theory and the conceptual framework for this study, there are numerous learning theories which could have been used to investigate learning within FDGs. Cognitive development and enhancement may be promoted through different types of

³¹ Cain, J., & Perry, S. (1983). *Separate Ways (Worlds Apart)* [Recorded by Journey]. On *Frontiers* (Album). New York, NY: Columbia Records (5 Jan).

learning interventions, e.g., reading, instruction, discussion, problem-solving, etc. However, peer-to-peer interaction has previously been found to be a fundamental basis for learning amongst farmers, and FDGs are structured around the objective of promoting these types of interactions (Prager & Creaney, 2017; Sewell et al., 2017; Ingram et al., 2018). Thus, social learning theory was chosen as the theoretical basis for the study as it emphasises social interaction as the way in which cognitive and potentially behaviour change is brought about. Breaking down the theory into key elements in an attempt to understand how and why learning occurs within FDGs, the first element behaviour modelling was therefore explored throughout the groups' interactions.

When referring to modelling, the understanding applied within this study rejects the historical theories centred around transmitting behaviours or learning as based on 'imitation' (Rosenthal & Zimmerman, 1978; Schunk, 2012). Rather than simply relying on explanations such as Piagetian 'schemes' or cognitive structures determining one's abilities to produce and imitate thought and action (Piaget, 1962), or operant conditioning where a stimulus (modelled action) initiates a response (imitation) which is reinforced (good/bad, correct/incorrect, e.g., 'Pavlov's dog') (Skinner, 1953), modelling is understood more inclusively as performance (demonstration or explanation) by a model and observation by an observer (Schunk, 2012). What is modelled may be a physical behaviour or practice, or it may be a cognitive process or knowledge. The information conveyed and received through such modelling will be informed by the learners' sociocultural contexts and meaning will be constructed (Vygotsky, 1978; Jarvis, 1987, 1992; Bruner, 1996). This may result in cognitive, affective and behavioural changes based on what was observed, though importantly, not necessarily imitating or mimicking what was modelled (Zimmerman, 1977; Rosenthal & Bandura, 1978; Schunk, 1987, 1998).

This chapter presents the results and discussion of behaviour modelling data collected from participant observation and semi-structured farmer interviews of the seven FDGs in South West England. The data relate to the first of the three elements of this study's conceptual framework and the factors involved with learning from behaviour modelling. Following an overview of the various types of learning observed within the groups, observational learning as a function of modelling is explored. Multiple examples are presented illustrating how attention,

retention, production and motivation as subprocesses of observational learning were observed through the groups' interactions. The elements comprising social learning theory are also not entirely separate and distinct but overlap with regard to various factors that impact learning, such as goals, outcome expectations and perceived self-efficacy, which relate to both role modelling and self-reflexivity as well. These factors are explored through the data in Chapters 7 and 8, but ethnographic accounts of how self-efficacy about modelled behaviours impacts learning will also be presented here. Critical analyses of the data and theoretical concepts are woven throughout the chapter.

6.2 Behaviour modelling observed

Both enactive and vicarious learning from modelling were demonstrated through the group observations. Enactive learning involves actual doing, thereby learning by experiencing consequences and feedback (Schunk, 2012). Vicarious learning involves observing others and learning without overtly performing what is conveyed, e.g., watching and listening, in person or electronically, reading, symbolic representations, etc. (ibid.). Unsurprisingly, vicarious learning is far more prevalent as it accelerates the amount of learning that can occur through accessing others' experience rather than having to experience everything first-hand, including negative consequences.

6.2.1 Enactive learning

During the farm tour part of the benchmarking FDGs' meetings, a common form of enactive learning I witnessed was farmers grabbing handfuls of silage and smelling it to check fermentation as well as assessing the colour and weight for optimum moisture content. This was accompanied by questions about storage, pasture levels and timings for cuts, and strategic levels of feed being bought in for winter based on how full (or not) the clamp³² was at certain points in the summer. Another action I often saw farmers doing whilst we were walking through pastures was to pull handfuls of grass to check stems for ryegrass cover, clover within mixed leys and heading³³ status. This would lead to discussions and

³² A silage 'clamp' refers to the area on-farm where harvested grass and maize, wholecrop (combination of cereal and legume) or cereals are stored under an airtight plastic cover to allow for the fermentation process to slowly transform the crops into silage, changing from green to brown (see HM Government, 2018c).

³³ When grass 'goes to head', it means that the leaf has not been eaten off or cut down before it matures and the seed head emerges. The spiky, tougher stem becomes less nutritious and tasty for the

questions between the participants about positive and negative experiences with different grass mixes and the need for reseeded based on what they had pulled up and seen.

One particularly illustrative example of enactive learning occurred during a Beef & Sheep B meeting about wool quality (31 Oct 2018), where I toured a sorting facility with around ten producers from the group all under the age of 30. Surrounded by giant bales of shorn wool wrapped in colour-coded plastic based on grade and organic status, the expert / host gave a general description about wool quality grading as we moved toward a large table with multiple heaps on it. He explained the distinctions between wool that was maintained prior to shearing, to varying levels or not at all, in terms of staining, clumping and matting (*vicarious*). On a spectrum from white to black, clean and fluffy to dirty and matted, he outlined various destination uses, e.g., raw material for carpets, for which white wool was most sought-after as dyeing was either not necessary or easier. Grabbing one clump that was fairly clean of straw, mud and dung but had discolouration, he modelled the grading process and the criteria graders would apply in assigning a price per kg to that bunch of wool. The same was modelled for dirtier and cleaner bunches. Then, he invited the participants to handle different wool bunches, experimenting with how they would apply the criteria and determine the grade as a group by feeling for thickness and/or matted bits, examining the colouring and cleanliness up close and asking questions for clarification (*enactive*).

Drawing on cognitivist or information processing theory, humans are not just receiving inputs and spitting out programmed responses but rather, “the thinking person interprets sensations and gives meaning to the events that impinge upon his consciousness” (Grippin & Peters, 1984, p. 76). Bloom’s taxonomy of cognitive outcomes (Bloom, 1956), whilst debated with regard to the hierarchical versus interchangeable and/or parallel nature of the levels (Anderson & Krathwohl, 2001), highlights this process of skill development, moving from knowledge (remembering facts or concepts) to comprehension (understanding), application, analysis, synthesis and evaluation (Merriam & Bierema, 2014). Without the additional sensory information to inform the description provided by

cows as more energy is harnessed for seed production as opposed to leaf and root development and the head dries up (Shelton, 2015).

the expert, the participants still may have been able to recount the grading criteria, may have understood how those would be used to assess the wool, and even may have been able to apply those criteria to their own flocks. Feeling the difference in texture and seeing the difference up close in colour and cleanliness between the grades, however, gave the participants more sensorial information to interpret and utilise in their application, better equipping them to analyse patterns and synthesise or predict why certain wool would fetch a certain grade. This was reinforced by the immediate opportunity to apply the criteria and receive feedback to monitor whether their assessment would have matched the grader's or was 'correct'.

6.2.2 Vicarious learning

The groups often structured their meetings around themes, such as leadership, staff recruitment and retention, lean management, business expansion, succession, mental health, etc. Alternatively, the host farmers or organisations indicated issues and questions they wanted the participants to engage with, framing the context in which vicarious learning was demonstrated. During the farm tour part of the benchmarking dairy groups' meetings, again there were commonalities as to examples of vicarious learning observed. As calf rearing is critical to the overall health and productivity of the herd, calf sheds were often the subject of discussion as to where they were positioned, how temperature control was achieved, type and quantity of feedings, illness monitoring and staffing procedures, etc. Whilst the sheds would have been viewed within the tour, the explanations provided were not simultaneously demonstrated in most cases. Rather, as during a Dairy A meeting (12 Dec 2018), a semi-circular calf feeder with six teats hooked to individual jugs for the milk powder mix was shown to the group for assessment and discussion about the practicalities of it being wheeled between the pens, greedier calves who finish first trying to push the slower drinkers off their teat, etc. But actual feeding with it was not modelled. Instead, the information about how and why the calf feeder worked well drawing on the host's experience (positive and negative) was a vicarious example the learners could use to either attain or avoid a similar outcome.

An indicative example of vicarious learning occurred during the Veg Growers meeting (2 Apr 2019) where the topic was irrigation systems. In

discussing the propagation tunnel's overhead sprinklers, the host was complaining about the limited water flow through some of the spigots. The structure involved long thin metal pipes forming a criss-crossing pattern down and across the tunnel with hanging tubes about a half-metre long ending in a spigot spaced every two- to three-metres. The structure had been originally set up by the former head grower and inherited by the host rather than designed according to his wants and needs, which seemed to contribute to the frustration. He proffered various theories about why water flow may have been restricted—low pump pressure from the borehole, intersections of the pipes reducing velocity, old parts—and vocalised the possibility of needing to swap out for new equipment. An expensive solution that he wanted to avoid. Then, one of the other growers chimed in, “*Have you checked the spigot head for spiders?*” Reactions of surprise and disbelief followed, but he explained that his water flow had also been low, so thinking it was blocked and needed to be cleaned, he had taken the spigot head off. Inside was a spider, and he found the same in the other spigots with low water flow. Thus, rather than replace the heads or entire structure as faulty, that shared experience allowed for vicarious learning of a possible cause and solution to a mutual problem faced amongst the participants.

Another instance through which vicarious learning occurred was during a Dairy D meeting (28 Nov 2018) on calf health. Discussing the importance of properly administering enough colostrum to new calves with the veterinarian expert guest, the participants shared techniques and frustrations involved in the process. At that point, the facilitator pulled out a tube that had a rubber band about one-third away from the funnel at the top where the colostrum would be inserted and asked if people knew what the significance was. As explained in Dooley (2020), there were seasoned dairy farmers in the room and there were five or six relief milkers / general farmhands who had come along to the meeting with their employers. The experienced dairy farmers signalled immediately through body language (nods, smiles) and murmurs that they understood why the rubber band was placed there. One of the farmhands had worked in dairying for a number of years and she nodded knowingly, but the others stayed quiet and/or looked confused. “*This is a marker for how far down the tube needs to be in order to make sure the colostrum reaches the calf's stomach*”, explained the facilitator, citing the common mistake to not insert it far enough or too far so that it damages

the calf's stomach. I heard exclamations of 'ah, okay' and 'wow, I didn't know that' between the participants, lots of heads nodding and people taking notes. A few people confirmed that they had been wary of inserting it too far in the past and how helpful that guidance would be, especially given the complications of the moment (e.g., the calf struggling, trying to administer quickly, juggling the colostrum to pour into the funnel).

As with earlier examples, this vicarious learning relied upon the participants having a certain amount of background knowledge in order to understand what was being modelled, why the tube explanation was important and how such a technique might help in the practice's application. The development of adult learning (*andragogy*) as distinct from children's learning (*pedagogy*) has been grounded in the idea that it is situationally motivated and experience-centred (Lindeman, 1926; Knowles, 1973; Merriam & Bierema, 2014). Knowles (1980) highlighted that one of the fundamental assumptions underlying andragogy is that adults possess and continue to accumulate life experience, a rich resource from which to draw and learn. From a Vygotskian perspective, one's sociocultural context plays a significant role in influencing the construction of meaning from experience (Vygotsky, 1978). According to Bruner (1996, p. 4), "learning and thinking are always situated in a cultural setting and always dependent upon the utilisation of cultural resources". The process of construction is therefore inherently a social process mediated by tools, such as cultural symbols, language, resources (maps, leaflets, apps), etc. (Vygotsky, 1981). Thus, "learning, *especially for adults*, is a process of negotiation, involving the construction and exchange of personally relevant and viable meanings" (Candy, 1991, p. 275). Those producers with little to no experience administering colostrum prior to the meeting were socially reliant on observing their peers to help construct and give meaning to the process detailed, including the tools, actors and subjects, and likely would not have come away with the same knowledge or understanding as those with direct experience. On the other hand, those with prior knowledge and experience may not have seen the need to learn anything new due to believing their personally held, constructed meanings were sufficient; therefore, they may not have actively striven to 'learn' the modelled behaviour as much as their less experienced peers (Merriam & Berierema, 2014). Thus, adult learning is influenced not necessarily by capacity to understand, as

promoted by a Piagetian developmental perspective, but by one's own reservoir of (sociocultural contextually-influenced) experience and knowledge which affects how one constructs meaning ('knows' the topic) (Driscoll, 2005).

6.3 Subprocesses of learning from modelling

Learning through interaction with one's environment, whether directly (*enactive*) or indirectly (*vicarious*) through modelled actions, thoughts, ideas and experiences, thereby offers the potential for a large amount of cognitive change. As discussed above, Piagetian theorists consider the ability to process information and learn from these types of situations to be related to a person's cognitive structure and phase of development³⁴ (Piaget, 1972; cf. Knight & Sutton, 2004). Incorporating a dialectical perspective on adult cognitive learning, however, involves learners developing recognition of as well as the ability to negotiate and navigate the "contradictions, paradoxes, and ambiguities of modern life" in these interactions with their environment (Merriam & Bierema, 2014, p. 33; Savina, 2014). Social interaction thus provides valuable inputs from which learners may construct meaning, draw inspiration and determine how they think about and act in relation to themselves, others and their environment (triadic reciprocity) (Bandura, 1986).

From a social cognitive perspective, learning and performance are distinct processes, so we are constantly learning through interaction with others in our environment as well as through our own experiences. "Whether we perform what we learn by observing depends on factors such as our motivation, interest, incentives to perform, perceived need, physical state, social pressures, and type of competing activities" (Schunk, 2012, p. 87). The process of observational learning involves learners being exposed to information, ideas, practices and processes through modelling that then may cause cognitive change and potentially result in new or different behaviours (Bandura, 1977). As Schunk (2012, p. 134) states, however, "observing a model does not guarantee learning or later ability to perform the behaviors". Four subprocesses are involved in the

³⁴ Moving from infancy where sensory-motor response to stimuli is the phase of development, Piaget theorises that people move along a spectrum from early childhood (the preoperational stage) to middle childhood (concrete operational) to adulthood (formal operational), whereby hypothetical reasoning and abstract thinking become possible (Merriam & Bierema, 2014).

process of learning through observation that impact whether, how and why learners' cognitive processing and performance is impacted and may change.

6.3.1 Attention

The observer's attention to the modelled actions will have an impact on whether they are meaningfully perceived (Bandura, 1986). Whilst personal characteristics of the learner (as well as the role model, discussed in Ch. 7) may influence one's attention, perceived functional value is a key driver for adults in observational learning. What the observer believes is relevant, important and likely to result in useful or positive outcomes will thereby command greater attention by the observer (Schunk, 2012). Those beliefs will be informed by one's lived experience and knowledge structures (Vygotsky, 1978; Jarvis, 1992; Driscoll, 2005; Alheit, 2018). As Illeris (2002, p. 154) highlights in relation to learning by experience, "the formation of experience is always socially mediated. It does not occur in individual isolation, but of necessity requires a social context". Drawing on that conception then, social interaction occurring in an environment that reflects certain social structures and norms will dynamically influence learners' understanding and social identity (Wendt, 1994; see also Christiansen, 1999, citing Negt, 1971).

With regard to the Beef & Sheep B wool example above, prior to attending that meeting I was unaware that sheep producers in the UK are in fact required to shear their flock once a year according to the Welfare of Farmed Animals (England) Regulations 2007 (as amended) under the Animal Welfare Act of 2006³⁵ and subsidiary Defra guidelines³⁶. The wool as a naturally occurring, low-risk by-product is classed as a Category 3 Animal by-product (ABP), which is the farm's responsibility to dispose of, but burning requires a permit.³⁷ Thus, the legal option most producers undertake, rather than processing for landfill, treating and selling directly or illegally burning, is to store and transport their shorn wool to the British Wool Marketing Board (hereinafter the Wool Board). As the only Agricultural Statutory Body remaining in the UK (Jones et al., 2018), the Wool

³⁵ <https://www.gov.uk/government/publications/code-of-recommendations-for-the-welfare-of-livestock-sheep>

³⁶ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69365/pb5162-sheep-041028.pdf

³⁷ <https://www.gov.uk/guidance/animal-by-product-categories-site-approval-hygiene-and-disposal>

Board grades all the wool received and sells it in bulk on the international market. For each load delivered, the expert explained that registered producers receive the market price based on their wool's assigned grades, paid on a delayed schedule. When we had entered the facility for the tour, I quickly noticed that a small band of four young men kept talking and joking amongst themselves based on what the expert was saying. A few of the bolder ones demonstrated knowledge and experience by asking questions during the wool grading modelling. But they appeared to start paying more attention and engaging when the expert picked up on a sarcastic comment about the low price per kg not even covering the cost of hauling it there and maybe they 'should just burn it'. The expert argued that since they as producers are legally obliged to shear anyway, they may as well invest some effort into keeping the wool clean to try to get the best price possible for the by-product. Especially as new entrants getting their flocks established, he pointed out the specific exception in the Wool Board's payment policy where young producers receive approximate value upon delivery rather than delayed payment the following year. That cash flow could come in handy, especially if they fetched the higher prices for the better-quality grades. By reinforcing the relevance of what was being modelled in the form of financial benefits to the observers, their attention improved.

This example demonstrates how the young producers' sociocultural contexts were shaping their thoughts, beliefs, assumptions and thereby behaviours in their initial dismissal of the information. They were operating on the belief that selling to the Wool Board was not worth the time or hassle (the comment about burning it), which may have been based on the assumption that additional effort would be too great to justify the return. Without immediately following up on comments (which was not possible during the meeting), I could not know what their internal knowledge, prior experience and contexts were that influenced the meanings they assigned and why they reacted in certain ways. But based on their comments about cost and time, I could infer that their sociocultural contexts shaping those beliefs and assumptions prioritised maximising profit, placed low value on by-products, distrusted government regulations as wasting producers' time and money, etc. Suboptimal vicarious experiences may have formed part of their contexts as well, e.g., parents / neighbours incurring upfront costs from shearing, storage and hauling only to wait months for a check that

ended up being very low. Being confronted by new information from the expert about grades and higher prices that could be earned therefore gained their attention and challenged their beliefs and assumptions. That may have led to a reassessment of whether the sociocultural context informing the belief was incomplete or skewed in some way (e.g., the neighbours may not have maintained the wool at all and therefore been assigned the lowest grade—a specific negative result rather than generally poor returns from maintaining wool).

Dairy B, as a group of spring block calvers (meaning they aim to have all of their herd calving within a 6–9-week time period during February-March), utilised each meeting to gain insights from their peers and improve their low-input grass-based systems. They would begin with a discussion about the KPIs, e.g., grass height measurements for the grazing platform ('farm cover'), litres per day, milk solids, fat content, etc., for each farm in attendance. Then, the host farmer(s) would provide an overview of their CFP report showing the farm's income, expenses and issues that they were pleased, confused, dissatisfied and/or ambivalent about, requesting their peers to provide feedback on the following farm walk. This set the scene for reciprocal learning, not only for those visiting the host farm but also for the host to gain from having her/his peers provide counterexamples and insights about things seen/explained which might be done differently.

One significant example of behaviour modelling that occurred during a Dairy B meeting (30 May 2019) was when the host farmer was explaining how much 'strategic labour' he had for his herd size and very low-input, low-machinery system. As a spring block system, their extremely busy part of the year was during their 9 ½-week calving block and subsequent one-two month period after calving when the cows were monitored pre-breeding for body condition score and signs of heat³⁸ prior to artificial insemination ('AI-ing'), aiming to serve all cows within 21 days by the end of May. Sowing, grass cover measuring, silage cutting as well as calf rearing also needed time allocation during the spring. Thus, he, his brother and dad shared the work as partners, but even though his son was aiming to join

³⁸ The dairy FDG members would often talk about cows 'coming bulling' as a way to detect whether they were cycling pre-service. They visually observed them standing to be mounted, and most also used tail paint or scratch cards to see whether bulling was happening (e.g., paint was rubbed off). Alternatively, those not cycling could be detected early to address their fertility with the veterinarian.

the operation, the host was not quick to involve him: *“I want my kid to work away so he can learn and [our farm] isn’t his only experience”*. Instead, the farm was taking on an apprentice, a young, keen school-leaver, who worked well independently and ‘just cracked on’. Many in the group inquired about this decision (*attention*) as most did not have apprentices; their sociocultural contexts seemed to frame it as a cheaper, but likely management-intensive labour alternative. This was demonstrated through their sceptical questions about supervision and instruction. The host admitted he did not like managing staff, but it worked well because he just showed her what to do and she picked it up quickly. *“Obviously I will pay her properly - £8-10 per hour, way higher than the average apprentice rate, which should help”*, demonstrating the idea that investing in people elicits stronger buy-in to the work. He also outlined the plan for post-Afternoon when there would be less to do in the afternoons – only one person on-farm. The Dairy B members responded positively to the idea but questioned whether it was feasible: *“you live on-farm, won’t you just end up finding jobs that need done?”* *“We’re ‘lifestyle farmers’”*, he reiterated to his fellow spring calvers, *“we farm the hectare rather than the cow. It’s about strategic rather than full-time labour”*.

This example demonstrates how shared meanings are constructed through social interaction and modelling that learners have a reason to attend to. The topic of labour is highly relevant to the FDGs’ members as it has cost, lifestyle, family, operational, welfare and strategic implications for their farms. Many CFP discussions I observed involved challenges to how the farm had accounted for labour within the profit margin, particularly if family members were providing technically unpaid hours that otherwise would have had to be provided by a paid employee. Listening to the host’s modelled thought process behind taking on an apprentice and paying well, the participants’ constructed understandings towards labour investment may have been challenged to consider whether the benefits could outweigh the costs for their businesses as well. What was also very interesting about the host’s phrasing of *“We’re lifestyle farmers”* was that I understood his intention to be emphasising not only

intersubjectivity³⁹ and “socially shared cognition”⁴⁰ between himself and the participants, but also collective identity.

Building on the concept developed by Stryker (1980), collective identity relates to symbolic interactionism theory as development of the ‘self’ and ‘other’ through negotiating shared meanings for behaviours. These meanings would be in light of deeply embedded social structures, perceived objective roles within society and oneself as understood by others, e.g., “self as reflection of society” (Stets & Burke, 2003, p. 134). As spring block calvers, the role they held in the UK dairy sector was outliers, challenging the accepted ‘wisdom’ of not just this is how dairy farming is done but also ‘who I am’ as a farmer. Their collective identity was built around their commitment to fixed periods of intensive work during the year in contrast to all-year-round calvers, building simple low-input systems maximising grass growth and harnessing the sun’s energy in contrast to high-input housed operations. Thus, as ‘lifestyle farmers’, they occupy a space whereby they demonstrate a different approach to work-life balance, e.g., many FDG participants I spoke with opposed the oft-lamented norm that farming is a 24/7 obligation, arguing that holidays can (and should) be taken as a farmer.⁴¹ By playing towards these overarching meanings and assumptions about spring block calvers, the host was in effect speaking on behalf of the participants since they are the ‘same’, thereby challenging anyone who may have disagreed as not adhering to their role or not acting in accordance with being a ‘lifestyle farmer’.

6.3.2 Retention

Retention as a subprocess of observational learning involves learners relating the modelled behaviour to information previously stored in their memories, coding and rehearsing new material according to prior knowledge and experience (Schunk, 2012). Piaget’s structural aspects of learning, “the content and nature of learning, the ‘how?’ of learning”, may be used to elaborate this process, involving not just assimilation of what is seen and heard into one’s pre-

³⁹ Intersubjectivity is a cognitive skill which allows for recursive perspective taking, or the ability “to reason about the knowledge which a collaborator possesses” and use that understanding “to predict how that person will behave” (Ding & Flynn, 2000, p. 10).

⁴⁰ Social cognition is a social psychological line of inquiry that relates to collective or shared meanings and common experience as a basis within groups for social behaviour (see Tindale et al., 2004).

⁴¹ One playfully explained to me that you either choose to be an autumn block calver if you prefer beach holidays, or you become a spring block calver if you like skiing, denoting the times of the year when either block has significantly more downtime.

existing knowledge structures ('learning by addition') but also accommodation (Illeris, 2002, p. 28). Nissen (1970) expanded on the theory, describing accommodation as adaptation to one's environment, e.g., encountered through social interactions, whereby one's cognitive schemes are changed through dissociation and reconstruction (cited by Illeris, 2002). In other words, knowledge acquired previously is released from its specific context and incorporated into newly formed structures that allow for "openness, sensitivity, creativity, flexibility and so on" (Illeris, 2002, p. 35, quoting Bjerg, 1972, p. 19). Therefore, one's sociocultural context influencing her/his existing cognitive structures will shape the way in which the modelled behaviour is learned.

This was apparent from an example at a Veg Growers meeting (6 June 2019) where the group, consisting mainly of (very) small veg producers (ranging from .5 to 5 acres), partook in a farm walk and discussion about a 27-acre operation with a thriving veg box scheme. Standing at the top of a field of spring onions, we watched a small tractor creep along with an attached trailer where three employees could sit facing backwards. The trailer spanned six rows so that each employee was responsible for harvesting two, deftly pulling and adding the crops to an attached wagon. A few participants asked questions trying to understand the process, e.g., how was it decided that entire fields need to be harvested, because for the growers from smaller operations, that style of mechanised harvesting was totally foreign. The types of produce and layout of the beds with brassicas, leafy greens, roots and tubers, herbs, etc. were similar between the different size operations. The host, however, had entire fields of the same type of crop whereas smaller growers may have one long bed of a crop and then the bed next to it would likely be something totally different. Thus, harvesting at that scale was much more efficiently done by hand and at staggered times. Their comments reflected assessment of the different method used by the larger operation according to their smaller-scale viewpoint—the trailer looks like backbreaking work, sitting bent over for the length of the field and scrambling to catch all of the crops before the tractor moves on. Could one use discretion about whether certain crops were ready and leave it in the ground for later? Wasn't there wastage if some were missed and then the field was ploughed for the next crop to go in?

From a researcher reflexivity standpoint, I found their apparent negative perception of the larger-scale operation quite surprising. The farming context in which I was raised encourages farmers to strive for more acres, a bigger scale to maximise efficiency and extreme levels of mechanisation (e.g., combine harvesters, larger tractors, global positioning system (GPS) for precision ploughing and application and self-driving units). My impulse was to question how an operation of less than five acres could possibly sustain a large enough turnover to support itself, so I assumed that the smaller growers would always be seeking to increase their operations. In contrast, that situation demonstrated many of the small-scale growers' aversion to a growth-orientated mindset aimed at farming larger areas and the mechanisation that would accompany it. With reduced costs for inputs, fuel, equipment and labour, small-scale operations commanding value-added prices for direct sale to customers or restaurants not only sustained a profit but operated in accordance with deeply-held values, such as agroecological principles; combatting climate change with reduced emissions, improving soil organic matter and carbon sequestration; shortening supply chains; no waste; reducing plastic use; feeding their communities healthy food; etc. (V3 Interview, 18 February 2019). Thus, the divergence in sociocultural contexts between the larger veg grower, who incidentally also claimed feeding their local community with healthy food to be a closely-held value, and the smaller growers suggested that retention of the mechanised harvesting example may not have been high due to low intention to put the modelled behaviour into practice.

As retention involves internal coding of information observed / absorbed through modelling in relation to one's knowledge and prior experience, it was not possible to know how each participants' cognitive processing was occurring during meetings. In speaking with producers from the different FDGs during farmer interviews though, especially jointly with their partners in the farming operation (e.g., wives, sons, brothers, etc.), the coding process taking place as a result of demonstrations and explanations became clearer. One member of multiple FDGs (two benchmarking and a grassland society) recounted his process of using notes to retain and connect what was modelled. *"I'll almost always take a notebook and I'll maybe write 4 or 5 points during the day, just things to think about. Sometimes not related at all, sometimes it'll be a boring point...we'll be talking about something, and I'll be thinking, 'I wanted to come*

and talk about grazing' or I wanted to talk about...whatever...mineralisation. But most of the time it is related, ya know, just a couple of words, and then I'll think – and sometimes I'll go through my notebooks, sometimes from 2 years ago, and think 'ah yeah, we've solved that' or 'ooh, still struggling with that one' or whatever” (C3 interview, 5 Feb 2019).

Another FDG participant spoke about the variation between fellow members as to their uptake of new information. *“Even the attitude to change and knowledge, some people you can sort of see how...some people take everything in like really quickly at a meeting and recite it off – I...probably can be a bit like that and then can probably be a bit bored for the rest of the meeting, while some of the others we end up having to repeat it 2 or 3 different times, which can be a bit frustrating. But...having that understanding of, that's just how they are...you can count the number of ceiling tiles for a few minutes and then join back in [laughter]. ... That sounds a bit negative, but there is a benefit to knowing everyone's limitations” (X1 interview, 11 Jan 2019).* This explicit recognition of the variation between FDG participants' cognitive processing and assimilation/accommodation of different concepts leading to retention is important from a P2P learning standpoint. Those modelling the behaviours need to be aware of this difference and perhaps highlight ideas, processes and practices more than once and in slightly different ways in order to allow for those who need more explanation or time to process effectively. For those who more quickly accommodate new information, the facilitator could encourage them to share their assessment and ask questions to further their understanding whilst also repeating the concept for slower processors, which would maybe alleviate frustration and/or boredom from having to progress slower for the sake of the group.

6.3.3 Production

Production, as a subprocess of observational learning taking place through the social interactions and modelling within FDGs, was also difficult to identify in the context of the meetings. It refers to production of the modelled action/concept being compared to the learner's conceptual (mental) representation. In other words, the learner utilises the coded / retained information to produce what was observed, refining their skills / implementation based on practice and feedback and adapting it if relevant or necessary. The

example of enactive learning from Beef & Sheep B where the participants experimented and the expert gave feedback on the young producers' grading of the wool was a clear demonstration of production of the modelled action. As stated above though, vicarious learning was often the only type of learning occurring during the meetings, so production mostly occurred afterwards. One instance observed, however, where not engaging the FDG participants in producing the modelled behaviour appeared to be a missed opportunity was during a Beef & Sheep A meeting (30 Apr 2019) about mental health. The topic had been selected by the coordinator due to its extreme importance and sad relevance to the farming population as suicide rates amongst those who work in agriculture are amongst the highest in the UK⁴². Thus, the expert presenter was introduced as a mental health specialist who would offer some insights that could help the participants identify mental health and wellness struggles amongst their family, friends and farming peers.

Instead, the majority of the presentation ended up covering the expert's journey to become qualified as a specialist and the various services she was going to be offering through her newly established therapy consultancy. A thinly veiled plug for business. Exercising reflexivity about my frustration surrounding that presentation, I have participated in many seminars where mental health in farming has been discussed not just with on-the-ground actors but also at the civil society / policy level regarding possible interventions. One of the biggest ambiguities expressed by those coming into contact with people who might be suffering from mental unwellness is what types of signs or symptoms they should be looking for because there is an overwhelming fear of being wrong. Actors are also very worried about attempting to speak with someone and upsetting them rather than having an awareness of possible things to say to help. The expert, however, failed to provide specific examples and strategies for communication or suggestions for seeking help that the participants would be motivated to attend to, retain and potentially produce in the future in light of these common hesitations. Additionally, there was no discussion or checking for understanding, e.g., through collaborative methods that would have alleviated pressure on individuals to apply the information presented and derive solutions to hypothetical

⁴² For a comprehensive overview of the mental health crisis in the UK agricultural sector, please see Lobley et al. (2019).

scenarios. I left feeling disappointed and unsure as to whether any participants, including myself, would be better equipped to spot and deal with mental health issues following that meeting.

An interesting example of explanation and feedback on perceived information even though the meeting involved vicarious learning did occur though during another Beef & Sheep A meeting (8 July 2019). In conjunction with an environmental NGO, the FDG participated in a farm walk led by the host's agricultural consultant. As a grazing expert, the consultant explained the pasture reseeding strategy being implemented throughout the farm whilst we stood around him in a semicircle in the barn with teas and coffees. The aim was to enrich the biodiversity of the ley, providing better insect and wildlife habitat and resilience to extreme weather conditions (e.g., drought and flooding) through different varieties, rooting depths, moisture tolerance, nutrient use and provision, etc. This objective was particularly relevant given the extreme drought the producers had experienced the prior spring (2018), which appeared to strengthen their attention to the information being provided about the host's corresponding practice shift. From there, we piled into various participants' trucks to go see the pastures. First, we walked through an un-grazed highly diverse ley where some of the varieties had grown knee-high. The consultant identified each of the plant varieties and their nutrient benefits, followed by the environmental NGO representative praising the benefits to insects, pollinators, soil quality, etc. offered by the mix.

Next, we drove up to a higher field to see the herd grazing a sward that had yet to be sown with an herbal ley, discussing the difference in height, diversity, residual cover and quality. Standing in the middle of the grazed pasture, the consultant pulled a whiteboard from the cab of his truck and drew a square with 4 sections. He explained in detail the rotations they had decided on for the beef and sheep operation in terms of length (number of days), area (relative to stocking density), subdivision of fields, grass cover heights, pattern of sheep following cattle, etc. Arrows indicated to where and after how many days the cattle were to move based on cover measurements. The expert then asked for questions from the participants (all beef and sheep producers who graze their herds rather than housing indoors) about the whiteboard explanation, checking their understanding. Their questions indicated they did not have a clear

understanding of the length and rate of the grazing rotations presented, which was likely informed by their prior experience of continuous grazing, i.e., leaving their herd on a larger field for many days. The consultant thus reiterated the information, modifying his explanation based on their confusion and highlighting the benefits of intensive bursts of grazing followed by rest periods, e.g., maximum energy-rich leaf uptake by the cattle, avoided root damage from re-grazing, emergence of different plants due to dominant cover reduction.

That example shows the value in having learners use the information gleaned from modelled behaviours to demonstrate understanding and apply the idea (*production*). If those producers had been assumed to have observed and learned the new information without being asked to demonstrate their understanding and use the rotational grazing knowledge, they would have left the meeting without a clear idea of how to potentially produce it on their farms. As came through from the farmer interviews, however, clear understanding does not necessarily mean immediately satisfactory production. Trial and error may be necessary from a skill development perspective or to determine what form of production is appropriate for each farm's individual conditions and context. As stated by a Dairy B producer, "*Whenever you go to a farm, there's always something you pick up that they're doing differently. You might not do it exactly the same when you come back [home to the farm], but you can adapt it*" (B1 Interview, 1 July 2019).

6.3.4 Motivation

Motivation to learn the modelled behaviours observed through social interaction has an influence on the other subprocesses as "people are more likely to attend to, retain, and produce those modeled [sic] actions that they feel are important" (Schunk, 2012, p. 93). Through observation, learners are able to see, hear about and question the consequences of modelled thoughts, processes and practices, aiming to identify their functional value and appropriateness. This may motivate the learner to make a conceptual change in relation to the modelled behaviour, but Pintrich, Marx and Boyle (1993) argue this depends on four conditions:

1. Dissatisfaction with how one currently conceptualises the thought, process or practice;

2. Intelligibility of the new conception so s/he can understand and possibly adopt it;
3. Plausibility of applicability of the new conception; and
4. Perceived fruitfulness—that it offers new explanations and opportunities for experimentation.

Thus, learners may have low motivation to change the way they think about something if their current conceptualisation is viewed as effective and ‘correct’. Additionally, if the new concept is presented in a way which is not understandable or seems inapplicable / non-implementable to the learner, they will have very low motivation to change. This interaction of cognition and motivational beliefs is important in the context of adult learning, as learners have extensive prior experience and knowledge upon which they base their decision making and actions. For instance, a Dairy D participant spoke about the previous meeting on calf rearing (28 Nov 2018) in our interview, *“I love calf rearing, I’m very passionate about the topic, but I would generally say...I’m pretty on the ball with what’s going on. So I didn’t **learn** anything new, but I took a lot away from it. A simple one—I straightaway decided, right, stop messing about, get a Brix refractometer⁴³, which was certainly something [the facilitator] had highlighted. And one of the other women in the group...is a rep, sells them anyway...and she was like, ‘you know I can get you one same as counter price, just say’. So I went, right, okay...I **think** my colostrum’s alright, but you know what, let’s just check it. ... So the role of the facilitator there wasn’t just that...I mean...it was something I was well aware of, I’d just never got on and done anything about it. And yeah, it kind of just brought everything together in terms of the need for it, being able to get hold of this bit of equipment, and then just cracking on and doing it”* (A2 Interview, 18 Mar 2019). Thus, if the introduction and uptake of new conceptions of ideas, processes and practices is an objective through P2P processes, these motivational factors need to be taken into account in the way the behaviours are modelled (demonstrated and/or explained), recognising that learners may have

⁴³ A Brix refractometer is a simple handheld piece of equipment which measures concentrations in different liquids, so in a calf rearing context it can be used to measure colostrum quality for antibodies before administration and blood samples for immunoglobulin levels a day or so after to indicate failure of passive transfer of the antibodies to the calf from the colostrum (Deelen et al., 2014).

extensive knowledge about and experience with the topic being presented and may not necessarily be looking to change without a convincing reason.

An example of how this approach towards making the new conception intelligible, plausible and fruitful, as well as why the participants should be dissatisfied (e.g., pointing out their management inefficiencies compared to the new information), was specifically utilised to motivate conceptual change occurred during a Dairy A meeting (12 Dec 2018). It was only my second meeting observing that group and as I pulled up in the farmyard alongside their muddy trucks, I realised I had not been fully accepted yet. The members who had attended the meeting before appeared to recognise my face and nodded politely in greeting, and then went back to chatting with each other in small groups of 3 or 4 guys. I migrated over to the table with teas and coffees and said a quick hello to the facilitator, who introduced me to the host's temporary employee, a visiting dairy farmer and nutrition consultant from New Zealand. As a young female, I noticed how much more willing she was to engage in conversation with me also as a young female than the guys (which thankfully changed as I attended more and more of their meetings). She and I chatted about how she was finding the UK as I kept an eye out for participants who had not been at the first meeting to whom I needed to introduce the project and gain their informed consent. I excused myself to gather four guys together and quickly rambled off my spiel about observing their meetings, confidentiality and anonymity—they disinterestedly signed my forms. Then, the facilitator asked everyone to top up their hot drinks and take a seat on the semi-circle of hay bales in the barn facing a screen and projector.

Before the farm walk, the facilitator gave a short interactive presentation on the concept of lean management. The concept, she explained, involves not just an evaluation of the operation's practices, processes, resource-use, etc. for inefficiency or wastage of time and money, but rather a continuous cycle of measure, monitor, manage and re-evaluate—or 'plan, do, check and act'. This description made the concept intelligible for the participants to understand as a simplified cycle of actions they likely do anyway but formalised into a coherent process with a specific objective, plausibly applicable and implementable on their farms. The participants offered multiple suggestions for areas where inefficiencies may occur on-farm, which might go unnoticed without systematic

evaluation as to whether what is being done could be done differently (rather than 'because we've always done it this way') and therefore more efficiently. For example, grazing utilisation, black plastic waste, unnecessary horsepower, inefficient sheds, overuse of soils, poor fertility results, low quality silage, high somatic cell counts, cull rates, etc. By getting the participants to brainstorm areas where they could be evaluating and continuously improving, the facilitator also fostered the fruitfulness of the conception in relation to the participants' own farms (i.e., increasing profit margins by reducing inefficiencies). Thus, if the participants were not dissatisfied with their management efficiency before that presentation, the foregoing motivational conditions may have caused them to identify potential losses within their operation and want to change them.

As further explored in Ch. 7, learners' motivation may be influenced by the model's results, creating outcome expectations as to what the learner may expect from implementing a similar thought process or action (Bandura, 1997). Those outcome expectations will factor into the learners' motivation to carry out the modelled behaviour as people are more likely to act in ways they believe will result in rewarding as opposed to negative outcomes (Schunk, 1987). Additionally, motivation increases if the learner perceives the modelled behaviour will help them attain a goal.

Self-efficacy in relation to modelled behaviours also plays a significant role in furthering (or obstructing) the learning process. Self-efficacy refers to the observer's belief about her/his own capability to learn and/or perform the modelled behaviour rather than belief as to what will happen if s/he carries it out (*outcome expectations*) (Bandura, 1982, 2001). If learners have low self-efficacy about their abilities, they may have lower motivation to attend to the model, retain the information and attempt to produce it. As will be explored further in Ch. 7, how the model is perceived may be positively (or negatively) relatable to the learner's self-efficacy ("*If s/he can, I can too*" (B1 Interview, 1 July 2019)). Examples from the data, however, also demonstrate how self-efficacy is influenced by internal assessments of one's abilities and performance as well as external factors.

6.3.4.1 Confidence

Efficacy is cognitively appraised by the learner through an inferential process combining and weighing personal, behavioural and environmental factors and feedback (Bandura, 1997). As a component of one's self-concept, or

self-perceptions collected through environmental interactions involving others' reinforcements and evaluations (Shavelson & Bolus, 1982), self-efficacy denotes one's confidence that s/he "can produce results, accomplish goals, or perform tasks competently" (Schunk, 2012, p. 374). Actual positive results may contribute to higher self-efficacy, but positive reinforcement of one's knowledge and capabilities through interactions with peers may also increase confidence that positive results could be achieved. A very interesting vocalisation of this impact from peer-to-peer interaction and learning through FDGs was during a Dairy D meeting (27 Mar 2019). We were sitting around a large conference table in the meeting room of an agricultural consultancy, where the theme was strategic planning for the future (both business and personal). During the round of introductions, the facilitator asked the participants to share a bit about themselves and what drew them to the FDG. One of the participants praised FDGs as a positive way to expose people to new ideas, think about their situation and try to improve. She then emphasised, "*As my husband has gone to more groups over the last two years, his confidence has skyrocketed to make more business decisions*". I later discovered why that was such a challenge—he farms with his father, who is set in his ways and domineering, so he was given very little freedom to make any decisions within the business until a few years prior (A2 interview, 18 Mar 2019).

I followed up with an interview of that participant and her partner, and he also raised the issue of confidence building from FDG interactions (A2 interview, 18 Mar 2019). Her partner began, "*You go and see other farms and you see it, and they've done it...and it looks great and you think...wow...obviously they've had to start from scratch and I've gotta start from scratch as well. So it just gives you that thing in the back of your mind—they can do it, and I can do it if I put my mind to it. And it's just a confidence builder more than anything, as well as seeing other things...*". She interjected, "*Visually seeing things helps though doesn't it, seeing how it's working rather than just going 'I think that would work'*". "*Yeah, being more confident in terms of what you thought about...and seeing it in action already, it gives you confidence because it does actually work*". Thus, the ability to see examples of how other people have accomplished things may help motivate the observer to internalise the modelled behaviour and attempt it as well

due to the positive impact on one's confidence that it can be done, raising one's self-efficacy that s/he can also do it.

A number of other FDG participants interviewed also spoke about the confidence one gains from seeing how practices have been implemented on another farm in contrast to receiving advice from a consultant to do it. One member of Dairy B talked about the process of the farms in the group switching to spring calving when the FDG was first starting. *“Certainly in the beginning...when we were all changing to be spring calvers, that was a mammoth decision...and we took a financial hit for 2 years getting to that stage...um, so that was a leap of confidence, and it's all very well for a consultant to come and sit round your table and say, 'look, you should be doing XY and Z 'cause you will make XY and Z money', it's really difficult...that is a leap of confidence to believe in him implicitly, whereas if you go and see a farm and you can **see** how they're doing it, and if you get stuck, we can phone each other up and say, 'look, I'm in a bad way at the moment, something's not right, what are you doing about that?' And that's always good as well, and invariably, the problem that you've got, someone else in the group will have it too”* (B1 interview, 1 Jul 2019). This community aspect to FDGs is explored further in Chapter 9, but with regards to behaviour modelling, the phrase I heard repeatedly was 'seeing is believing'—one of the significant benefits identified by participants was building their confidence not just that a practice worked (or did not) but that they could also effectively implement it.

6.3.4.2 Self-regulation

This process of internalisation of social variables impacting self-efficacy also translates into mechanisms by which the learner can assess their understanding and performance, i.e., self-regulatory processes. From a social cognitive standpoint, learners observe, judge and react to their progress (e.g., towards an outcome), cyclically self-evaluating whether what they have learned is (un)acceptable as influenced by social variables (Zimmerman, 1998, 2000; Bandura, 1986, 1997). Interacting with one's self-efficacy, positive or negative evaluations can impact one's motivation to continue learning. For instance, positive self-evaluations may reinforce self-efficacy and motivation if one sees oneself as capable of progressing further (Schunk, 1991). Alternatively, low self-evaluations may not necessarily reduce learners' self-efficacy about their

capabilities and motivation to learn; rather, they may judge their approach is just inadequate and alter their self-regulatory processes (e.g., work harder, adopt a better strategy, seek assistance and/or examples from peers considered to be more knowledgeable or effective at the topic, etc.) (Bandura, 1986; Schunk, 1990).

Speaking with a long-term member of Dairy A, he emphasised, “*when I came home [20+ years ago], the business was run more as a way of life. And...profit was only looked at at the end of the year when the accountant came. All the rest of the year was really concentrated on the job that had to be done, whether it was cropping, cows...we were really busy, and doing stuff well, but nobody took a step back and joined it all up and said well as a result of this, it’s worth that. If we did it like this, it would cost us that. None of it was looked at. And...which really was...people just so focussed on doing the job, no one had a financial head on, I don’t think, saying this was good and this was bad. And so we would have some years when you’d sit there with the accountant and you’d look at the end of the year profitability and it’d be disastrous. And say hang on a minute, why didn’t we know about this before? We knew it wouldn’t be good because perhaps milk price had come down a little bit, but we’re not taking control of our destiny here...we’re just accepting the figures that fall out the bottom, we’re not doing enough to...um...determine the figures that fall out of the bottom. And I think discussion group has been a big help for that...it’s been instrumental in making things profitable. It’s transformed our business from – milk output has obviously risen...more than doubled, and profitability – cost per litre, we’ve been more efficient and we’ve sold more milk, so profitability now is a million miles from where we were 20 years ago*” (A3 interview, 10 Apr 2019). Self-evaluation of the negative outcomes from failure to exercise regulatory control over the way in which the farm’s operation was contributing (or not) to profitability thereby increased his motivation to learn through extensive interaction with and questioning by his FDG. Decision making had changed from unquestioning continuation of the status quo to judgments of outcomes in relation to known variables and standards (e.g., benchmarking) and changes focused on maximising efficiency.

Particularly in the context of FDGs, the reciprocal interactive process of not just the social context influencing the learner but also learners actively

choosing and making changes to their social environments to enhance their learning became evident (Schunk, 1999). That same member spoke extensively about the loose discussion group he and two friends voluntarily hold 2-3 times per year in addition to his formal FDG. They share all their figures and ‘quiz’ each other on every decision made—they purposely “*don’t hold anything back*” to ensure they learn as much as possible from having to defend their choices (A3 interview, 10 Apr 2019). Another FDG member described the evolution his group has undergone over 18 years of collaboration, which began as a grass-based dairy FDG focussed on technical issues. The members’ interactions and farm visits had been highly influential in helping them build spring block calving systems and maximise milk output from grass intake. “*Initially at the start it was all about the basics, managing grass and making sure the cows are eating the right amount of grass...and now we sort of moved on to the intricate business management side of things—long-term planning and looking at...a lot of us, we’re family farms and couples and stuff, so how to take staff on, set up protocols so you can leave the farm and do other things and you’re not sort of fundamental to the running of the business, that’s how it’s progressed*” (X1 interview, 11 Jan 2019). Thus, they had moved on from ‘tyre-kicking’ type farm walks and reshaped their learning environment due to eventual self-evaluations of their solid proficiency at technical tasks. Their evaluation of having inadequate knowledge and skills to handle more complex issues, e.g., communication and personality traits, developing leadership skills, etc., had led them to collectively realise the need to evolve their focus for the group to continue to be viable. Members would not have been motivated to continue investing time and money if they were not learning anything new or improving their skills.

6.3.4.3 External factors

External factors may significantly impact learners’ self-efficacy and motivation to learn as well as internal factors of confidence and self-regulation and evaluation. Self-efficacy as to whether one could achieve the modelled behaviour may be negatively impacted, for instance, by perceived barriers that would need to be overcome, thereby potentially “affect[ing] effort expenditure, persistence, and learning” (Schunk, 2012, p. 113). An illustrative example of this interplay between self-efficacy and external factors occurred during a Dairy A meeting (24 Apr 2019) on the farm of an extremely successful farmer who the

group was specifically visiting to learn about his process of expanding to own multiple farms. The host kicked off the discussion about their business' bespoke system of monitoring and measuring full cost of production (rather than margins) against their 'triple bottom line'—financial, social and environmental sustainability for "*true long-term sustainability*".⁴⁴

The participants appeared to be really impressed by the host's business approach and management, but their questions suggested low self-efficacy in relation to different aspects of it. One member inquired into how and why they measure full cost of production rather than margins since fixed costs (e.g., loan payments, rent, insurance, etc.) could easily be combined for the different farms. The host was adamant about the importance of knowing one's **full** cost of production as inefficiencies could become lost if lumped together. Everything was allocated on every unit in 'real-time' and accounted for—each farm had to not only be independently efficient enough to cover its own base fixed costs but also return on what they bought it for at a rate of £10,000 per acre plus 5% interest. This led to questioning about farm tenancies versus purchasing and whether bank managers would lend to them if they too were aiming to buy farms. Again, the host was adamant that if full cost of production was calculated, farms could be bought in 15-20 years rather than renting and loans were possible if one could demonstrate that costs were fully known and could be kept to specifications. Finally, there was some dissention about opportunities being available to be capitalised on, speaking to the rare occurrence of neighbouring farmland coming up for sale or rent, demonstrating doubt that external conditions would align even if the host's more labour-intensive accounting system were utilised.

This example demonstrates the effect which external barriers may present to learning from modelled behaviour, even if it has been shown to be quite effective and is well received by the learner. Motivation may be negatively impacted if learners view themselves as not being capable of overcoming the barriers, thereby decreasing the amount of effort expenditure and persistence they may decide to dedicate to learning the modelled behaviour. In simple terms, this may result in an explanation such as 'that sounds like a good idea, but it wouldn't work for me like it works for them'. On the other hand, I spoke with a

⁴⁴ Introduced by Elkington (1994), the term connotes balancing social and environmental outcomes with economic expectations and profits (Slaper & Hall, 2011).

producer from another FDG who was adamant about knowing one's cost of production or 'knowing where you stand' to increase resilience against external conditions, e.g., the 2018 drought in the UK, when they arise (Interview X1, 11 Jan 2019). Despite being a negative external condition, similar to the ambiguity surrounding available farm expansion opportunities, that framing indicated high motivation to expend effort and persist with learning how to build resilience. Otherwise, one may simply carry on and hope for the best as opposed to trim certain areas, which their farm could do because they knew their cost of production, and they made just as much profit in 2018 as in other years.

6.4 Recap on behaviour modelling in FDGs

This chapter demonstrates that the behaviour modelling element of social learning theory was a vital component of all the FDG meetings observed within this ethnographic study. Enactive learning was utilised in some instances where the participants needed to personally engage with the modelled behaviour through touching, smelling, handling, etc. in order to enhance their accommodation of new information and retention as well as production, e.g., the wool grading meeting. Vicarious learning, however, occurred much more frequently in the form of the host farmer explaining to the other participants their knowledge of a concept and/or experience with implementing an idea, process or practice. As we have seen through multiple examples and interviews with FDG participants, observational learning resulting from these enactive and vicarious learning interventions will also be significantly influenced by learners' sociocultural contexts. Meanings are constructed by drawing on one's previous experience and knowledge as shaped by the cultural norms and shared meanings in which they are embedded. Thus, it is imperative for P2P processes to acknowledge and build upon these understandings; otherwise, attention, retention, production and motivation may be negatively affected.

Behaviour modelling in FDGs was found to promote the subprocesses of observational learning in many instances. Emphasis on the modelled behaviour's functional value to the observers as well as shared meanings between the modeller and observers helped maintain their attention. Additionally, relating the modelled behaviour to relevant issues faced by the learners may have increased their retention or accommodation by their existing knowledge structures to

dissociate and reconstruct / code the knowledge for future production. Examples of FDGs leading to production of the modelled behaviours in the course of the meetings were not frequent due to the vicarious learning and cognitive processing involving reflection (see Chapter 8) and therefore delayed, possibly adapted production. Nevertheless, the process of checking for participants' understanding of how the idea, process or practice might be implemented on-farm was shown in certain cases to be quite critical to assess for future successful translation of the observed behaviour into practice. Motivation is a complex and pervasive element influencing learning from behaviour modelling, affected by self-efficacy, self-regulation and external factors. FDG meetings focussed on presenting ideas, processes and practices so that they were intelligible and plausible for implementation prevented undercutting the observers' motivation to pay any attention and retain the information. Had they not also emphasised why the participants should be dissatisfied with their current conceptualisation and perceive the modelled behaviour as a fruitful option for experimentation to address their issues, motivation to attend to, retain and/or produce it may have been lessened as well.

CHAPTER 7 – ROLE MODELLING

“Respect”⁴⁵

I was sat around a circular conference table with approximately 15-20 women in an agricultural consultancy office in rural Somerset. We were completing an exercise about future professional goals that the facilitator had asked us to do off the back of a values and visioning exercise (‘where are you now, where do you want to get to, how are you going to get there?’) and going around the table sharing our responses. The young farmer sitting next to me appeared to be in her early twenties. She had described earlier in her introduction that she was in a farm partnership with her father wherein he had given her the majority share and management responsibilities straight out of agricultural college. With regard to her aspirations for the future, she spoke about wanting to grow the business, but there would be complications involved with bringing her husband into the farm in some capacity because they did not work well together. Plus, there was the issue of wanting to have a family—looking ahead, she was very unsure how she would balance all of her commitments. “Maybe I’ll keep working full-time managing the dairy and [my husband] could stay home with the kids?”, she postulated.

One of the other women chimed in, “That was very open-minded of your dad to transfer over management and control and go into a 51/49 partnership with his daughter”. Others, including myself, nodded in agreement, mild surprise and admiration, and the young farmer responded, “Well actually, Dad and I work really well together and I think unlike other young people, I want and ask for his advice on why things should be done in a certain way. But the final decision is up to me.” She then recounted a (sadly) funny story demonstrating how supportive her dad was of her taking the reins and the misconceptions she dealt with as a young woman in charge. Every time a new rep (feed, vet, etc.) would show up on farm, they would ask ‘Where’s your old man?’ without even bothering to ask who was in charge. So she would point across the yard to where her dad was working and then go and hide (preferably up a hill) for when the person inevitably reached her dad and was told that, in fact, the farmer they needed to talk to was her. Laughs followed as we visualised the rep trudging up the hill with his tail between his legs to try and rectify his mistake and convince her to buy whatever he was peddling. But there was a melancholy undertone; the story was indicative of the (literal) uphill battle she as an ambitious, successful young farmer would likely face for years to come due to ongoing perceptions about her gender in farming.

7.1 Introduction

As discussed in the previous chapter, Bandura’s (1986) social learning theory centres around the concept of triadic reciprocity, whereby learning is carried out through continuous interaction between the individual and their environment, both affecting and being affected by their behaviour. It is therefore

⁴⁵ Redding, O. (1967). Respect [Recorded by Franklin, A.]. On *I Never Loved a Man the Way I Love You* (Album). New York, NY: Atlantic Records (29 Apr).

unsurprising that the people in the individual learner's environment are quite important in influencing what and how they understand ideas, processes and practices. Framed by their sociocultural contexts, actors model behaviours and learners perceive and construct meaning from them (Bruner, 1996; Howe et al., 2000). As Schunk (2012, p. 101) points out, "People attend to a model in part because they believe they might face the same situation themselves and they want to learn the necessary actions to succeed." As explored later in the chapter, the modelled behaviours' usefulness in helping learners achieve their goals is therefore important, particularly as motivation to learn behaviours which one does not believe s/he will need to know may be quite low (Merriam & Bierema, 2014). That assessment, however, is not just about the nature of the behaviour itself but about who is modelling it and how. Illeris (2002, p. 72) states, "In learning, one can distinguish between the cognitive or epistemological aspect, which is concerned with the content of learning, and the emotional, affective, motivational and psychodynamic aspect, which is concerned with the dynamics of learning". Learners will vary in how they feel about different modelled behaviours and whether they are motivated to learn from different models based on how they perceive various factors about them and/or feedback received about their behaviour.

Thus, this chapter explores issues that relate more to the psychodynamic and sociodynamic elements of learning that influence the cognitive process. The following sections highlight the many examples observed as well as illustrative data collected from farmer interviews that evidence learning being influenced by role modelling within the FDGs' interactions. Role modelling, as explained in the theoretical and conceptual framework (see Ch. 3), is related to *who* is demonstrating or explaining the idea, process and/or practice and the perception of the observer of various factors. Following an overview of how model prestige and competence were shown to impact the subprocesses of behaviour modelling discussed in Chapter 6, e.g., attention and motivation, the next section will outline the impact of vicarious consequences to models, providing positive or negative reinforcement to observers. Finally, the impacts of goal setting, outcome expectations and self-efficacy on learning in relation to role modelling will be discussed. Conceptual analyses are presented throughout the chapter in conjunction with the results and discussion.

7.2 Factors affecting perception of role models

7.2.1 Model prestige and competence

A learner's environment is filled with instances where behaviours are modelled by various people, presenting a range of views, from matching to slightly divergent to contrasting, on what, how and why to do or think about ideas, processes and practices (Bandura, 1986; Piaget, 1980, cited by Illeris, 2002). The question becomes: who does the learner pay attention to in order to cognitively process and assimilate or accommodate their modelled behaviour? What motivating factors influence the observer to want to learn from certain models and why? Common sense would dictate that people are more likely to pay attention to models who appear to know what they are doing, or demonstrate competence, than those who do not. "Model competence is inferred from the outcomes of modeled [sic] actions (success, failure) and from symbols that denote competence" (Schunk, 2012, p. 101). Thus, whether or not someone is perceived to do behaviours well conveys a message about the functional value of learning from her or him. Particularly regarding high-status models or those exhibiting the attribute of prestige, their modelled behaviours may likely be viewed to carry greater functional value for observers as success or positive rewards may be expected and thereby command more attention and motivation to learn (ibid.).

7.2.1.1 Competence

In the context of the FDGs researched for this ethnographic study, there were clear indications throughout the various groups that members regarded other participants and external role models as possessing competence about certain ideas, processes and practices. This was demonstrated by actions, such as specific questioning of them for their opinion and advice during meetings, but also through statements made by interviewees denoting from whom they felt they learned due to their knowledge and experience.

A few members of Dairy B named a fellow member as a role model demonstrating competence due to the fact 'he makes the most money', but the sentiments behind that seemingly unidimensional statement ran much deeper. During many meetings with the group, I observed that member being asked what he thought about ideas being debated, e.g., whether the convenience of a calf feeder wagon outweighed the cost, by both the facilitator and fellow participants. His answer was almost invariably no, arguing against what he saw as

unnecessary expenditures. One of his peers explained, “[he] has been repeatedly and consistently very low cost of production and I think a very effective operator...he is quite loud and quite...demanding in that you’re spending money when you shouldn’t do...sort of thing, from that point of view. But he’s someone I admire a lot ... So he has been historically one of the people that’s quite loud but has very much got the focus of spring calving” (Interview B3, 2 Jul 2019).

Thus, a key criterion revealed as to that role model’s perceived competence was in relation to spring calving systems. As discussed in the former chapter, spring calvers choose that system of production in part due to its low-input requirements, capitalising on high grass growth and grazing for low cost of production, but also as ‘lifestyle farmers’. There are intensive bursts of work and the smaller crossbred cows they prefer may not be as high-yielding as Holsteins, but this allows for periods of less work during the second half of the year when serving or breeding season is finished and cows are outside grazing with only morning and afternoon milkings to be done (or once-a-day (OAD) for some herds). Thus, these systems are based on being simple, low-cost and thereby efficient and profitable. The role model’s strict adherence to the principles of spring calving was therefore one of the reasons he was perceived as highly competent with regard to the system everyone was individually implementing and his fellow members were motivated to seek and pay attention to his opinion.

Another instance where it was demonstrated very clearly that fellow participants considered one of the FDG members extremely competent was during a Veg Growers meeting (5 Mar 2019) at a farm affiliated with a charity, which worked with children in need of therapeutic and wellbeing services. As described in Dooley (2020), the topic of the meeting chosen by the growers for their programme of events was around community engagement. The host farm had been approached about hosting due to their thriving volunteer programme, which operated on a once-a-month basis (first Thursday of every month) as well as ad hoc for random jobs, huge farm walk attendance (e.g., 100+ persons), training courses offered, market stall at the local community farmers’ market, etc. Two interconnected things in particular garnered much surprise and admiration from many participants around the table as to the host’s community engagement strategy: the frequency and amount of volunteer help the host was able to secure and the farm’s social media following.

Sitting around a large cluster of tables with about 15 participants, I watched and listened as they incredulously questioned the host about the process of gaining 'regulars' and how she handled volunteers who were 'wet', i.e., need to be shown everything and supervised to the point where having volunteers could be more of a time commitment than it is worth. She admitted for the latter it took work to set up the jobs and there was not much labour return as they may be coming more to socialise, but as long as it was once a month rather than every week, that in itself had value. Regarding regulars, it took time to come to know them and trust that they would do it right, but now a few volunteers were welcome to come on weekends if a job needed done. One grower joked, "*Wow, without you there? I need those volunteers!*" Whilst this indicates that in part the success was attributable to the qualities and characteristics of the individual volunteers (e.g., trustworthy, skilled, trainable, etc.), it also demonstrated the host's perceived competence in advertising for, training, retaining and gaining significant value from volunteers. As small market gardens founded on principles aiming towards better ecological impact as well as healthy and nutritious products with which they could feed their local communities, community engagement was an element in line with the ethos of the growers in attendance. Thus, they were motivated to learn more about and improve by attending to the host's experience and knowledge on that topic.

7.2.1.2 Prestige

The FDGs I followed often held meetings on farms both of members and non-members who were chosen and approached for consent to host the group because they were considered particularly competent or held in high regard within the wider (farming) community, based on their overall KPIs or a specific component on which they excelled. For instance, Dairy A's visit to the primary farm (see Chapter 6) of a non-member in the neighbouring county, where the owner had expanded to own multiple dairies, was a targeted visit based on the host's prestige within the farming community for his excellent KPIs. Interestingly though, he greeted everyone with the sentiment that he wanted them to figure out something he was doing wrong, because if he hosted a group on his farm and they didn't leave him questioning whether he was doing something right, it was a waste of his time. Thus, external perception of the role model may vary from how they perceive their own operation if s/he is constantly critiquing and striving to

improve. Another example of a targeted learning intervention was when Dairy B specifically visited a farm on their annual away tour to observe and learn about the owner/operator's professional labour recruitment and training programme. He and his partners excelled at attracting talent from outside the industry and had received wider recognition for it as such external recruitment is a common challenge cited within the new entrants discourse (Ingram & Kirwan, 2011; Ilbery et al., 2009; Williams, 2006; ADAS, 2004).

A key example of the "influence of affectivity on the cognitive" was observed during a Dairy B meeting (25 Apr 2019) I attended on the farm of a tenant farming couple who had won a prestigious award the year before. As explained in Dooley (2020), the participants alluded to that award quite a few times during the course of the meeting in response to the host's insistent questioning of the operation and asking for feedback from his peers on what needed to be changed. The sentiment uniformly expressed was, "*You must be doing something right*", partly teasing that a decorated farmer would be so keen to change his operation that had won him an award, but also recognising his high level of competence that had led to the prestige. Reflecting on the host when asked about role models within the group, one of his peers stated "*he's quite quiet, but he's obviously doing a very good job, and started from nothing and built it up. And uh...obviously making very good money in the system with his constraints...the land constraints that he's got [being a tenant on a council farm]*" (Interview B3, 2 Jul 2019). This statement added to the above cognitive perception of the host's prestige—facing system constraints and having to start from scratch as opposed to taking over a well-functioning operation contributed to his peers' affective perception of his achievement as even more impressive, admirable and respectable.

Another clear demonstration of FDG participants considering the person modelling behaviours to hold a certain prestige was during a Beef & Sheep A meeting (25 Oct 2019). We were touring a large beef finishing unit affiliated with a well-known farm shop in Devon and the host was the young farm manager. Standing in a loose semi-circle around the host in front of the covered pens stretching the length of the yard (approximately 50 metres), the participants asked questions about entry and finishing weights, concentrates and feed levels, suppliers and buyers, etc. Many in the group vocalised praise and admiration for

the cattle condition and carcass weight the host was able to finish them to in just a short period of time from when they entered the farm to slaughter. A few of the participants with beef herds asked whether the host ever bought cattle to finish from the livestock market where farmers from their area sell off their animals, jokingly suggesting he could buy theirs and provide a good price rather than the fluctuating prices per kg they normally faced at auction. The group, however, also referred to the farm shop's reputation for high-quality meat that was supplied by the farm, thereby denoting the external prestige and feedback that informed the participants' perception of the host and what he was able to do as a finisher.

This perception of role models' prestige and competence strongly relates to Bourdieu's concept of symbolic capital, whereby an individual's economic, social and cultural capital "are socially perceived and recognized as legitimate bases for claiming esteem, honour, prestige, respect and recognition within a given field" (Conway et al., 2016, p. 168; citing Bourdieu and Wacquant, 1992). Stemming from his fundamental social theory of practice, Bourdieu highlights the relationship between these four forms of capital (affording one power) and one's habitus, or dispositions, "within the current state of play of that social arena", or field, as "(Habitus x Capital) + Field = Practice" (Maton, 2008, p. 51; Bourdieu, 1984, p. 101). In short, an agent's position within a field is determined by her/his accumulation of symbolic capital, and the practices used to acquire different types of capital to collectively constitute it are determined by the agent's habitus. The concept of symbolic capital is particularly relevant to the study of social learning theory in FDGs and role models within the learning process as it is constituted by social capital, e.g., social connections and networks, and cultural capital, or knowledge and skills, that are gained and accumulated within the agent's field.

As seen above, those who other participants were motivated to learn from demonstrated high levels of cultural capital through their knowledge about and skills in farm management, business planning, marketing, overcoming constraints, etc. Social capital, as explored more in Chapter 9, was also demonstrated through the members' deep interpersonal relationships within the FDGs as well as extensive networks of other farmers, groups, consultants, organisational representatives, researchers, amongst others upon whom they could draw for different issues. As Conway et al. (2016) explored in relation to farm succession, therefore, symbolic capital is accumulated over the course of

one's farming career through social interaction with peers in one's environment (Christian & Bloome, 2004). Importantly, this confers status, which is not an inherent trait but relational and dependent upon others' perception that one possesses certain elements of capital to legitimately deserve recognition and respect (Webb et al., 2002; Glover, 2010). Thus, higher amounts of symbolic capital tend to relate to whether learners perceive the model as one from whom they are motivated to attend, retain and produce behaviours.

7.2.2 Vicarious consequences

One of the major components within Bandura's social learning theory as to how and why learners are influenced through their interactions with their environment is the reinforcement or feedback, positive and negative, received by modellers of different ideas, processes and practices (Bandura, 1986). Common sense would again dictate that learners would seek to emulate modelled behaviour if the modeller is perceived to have been rewarded or praised; conversely, negative consequences may be avoided by perceiving that such thoughts or actions result in punishment or financial loss, for instance. This response facilitation is where modelling socially prompts others observing to respond or think about, plan for or act in a similar fashion (Schunk, 2012). The motivation to act accordingly may be induced through their interpretation of cues around the appropriateness of the modelled action.

A standard example of response facilitation through interpretation of positive or negative feedback occurred within Dairy A-C as benchmarking groups. During their benchmarking meetings, they discussed everyone's CFP in turn, vicariously learning about financially (dis)beneficial approaches upon comparing why one producer's costs were lower and/or profits were much higher than everyone else's. As one producer from Dairy B explained about this opportunity to exchange knowledge and experience with FDG peers, "*when we go through the CFPs, and Joe Bloggs' has only got 0.2 of a penny for insurance and mine's 0.8, we want to know why his is so much lower and why mine's so much higher. And there are a lot of figures like that that we had no idea...you know, farming—you're quite insular. And you've no idea whether it's a good price or a bad price what you're paying, you just pay insurance, for example, when the renewal comes around. You never questioned it...but we learnt to question all our costs*" (B1 Interview, 1 Jul 2019).

An interaction demonstrating learners' perception of a role model's behaviour in relation to vicarious consequences happened during a Dairy C meeting (7 Nov 2018). The FDG was being hosted by a young farmer who had switched from beef to dairy a few years before. As explained in Dooley (2020), he was operating a flying herd, which means he sold off his calves and bought in cows from other herds.⁴⁶ This was in contrast to how closed herds operate, which rear their own replacement heifers from calves born on-farm, thereby controlling how they are fed, immunised, and importantly, various diseases to which they are exposed. The risk with flying herds is that the incoming cows will introduce disease onto the farm, which can be extremely costly and time-consuming, e.g., the regulatory nightmare of mandatory testing and oversight faced by numerous herds across the country that have been 'shutdown' with bovine tuberculosis (bTB). But also, from an animal health and welfare standpoint, the producers do not want their cows to incur illness and suffer, need antibiotics, or worse, have to be culled, which of course has a productivity and profitability angle as well. Thus, it is far more common for dairy herds to be closed, especially due to bTB restrictions, not just within the FDGs I followed but throughout the South West.

Packed into the kitchen of the farmhouse, about 20 participants stood against the wall, leaned up against the counter or sat at the island in the middle of the room and perused the host's CFP. Following the facilitator's introduction, the host leaned back against the sink with his arms folded across his chest, framed by large windows overlooking lush pastures, and began describing his operation. When the fact that it was a flying herd was introduced, there were about 4 or 5 farmers who reacted quite viscerally with their body language and began interrogating his rationale behind designing his operation that way. "*Aren't you concerned about TB? You don't know which herds they're coming in from and what they might be bringing!*" exclaimed a traditional closed herd farmer who had been in the business for over 30 years. In a tone bordering on obstinate, the host defended his choice with a shrug and a quip that coming down with bTB is 'all luck anyway', referring to a neighbouring closed herd farm that had recently tested positive. From a business model standpoint, he touted how he was able to

⁴⁶ Herds need replacement heifers or cows for those which are culled for voluntary or involuntary reasons, e.g., low production, diseases, extreme lameness, poor fertility, nonconforming calving, etc. (Olechnowicz & Jaśkowski, 2011).

avoid all the costs for rearing calves and buy in ‘empties’ or cows not in-calf that would be able to ‘start putting milk in the tank’ immediately rather than waiting 9 months for heifers to calve and then start lactating. He emphasised that rearing calves was stressful and time-consuming, in response to which one producer prodded, “*yeah, but it’s also rewarding*”. “*Maybe to you,*” retorted the host, “*I like being able to come in after milking at 7:30 and enjoy breakfast*”.

These drastically divergent positions demonstrate the importance of sociocultural contexts and understanding where learners are coming from in terms of knowledge and experience in order to understand how it may influence their perception and ascertainment of the functional value of modelled behaviours by a role model, potentially with a different sociocultural context (Valsiner, 1997; Littleton, 2000). Affect or emotions feed into this process as well, “consist[ing] of evaluations of environmental conditions perceived cognitively with their subjective meanings and the individual action potential as a standard” (Holzkamp-Osterkamp, 1978, p. 15, quoted by Illeris, 2002). The producer decrying introduction of cows into the herd which pose a risk of disease transmission was reasoning based on the value of risk avoidance and disease mitigation, informed by his sociocultural contextual knowledge (and experience) of the negative consequences from shutdowns, e.g., stress, frustration, despair, etc.⁴⁷, and historical frame of reference, e.g., having farmed through the UK’s 2001 foot-and-mouth epidemic (Haydon et al., 2004). The producer emphasising the rewards of calf rearing was indicating his sociocultural context included positive reinforcement and a sense of satisfaction and pride from feeding and caring for a calf to become a healthy, fertile cow within the herd. The host was making decisions based on his sociocultural context that valued work-life balance and therefore less labour-intensive ways of bringing replacements into his herd, which was facilitated by his lack of risk aversion that was further reinforced by positive feedback (good profit margins). In the car on the way home, I overheard the discussion between a few participants and the facilitator, which summed up his risky business model with the frank insight, “*it could go really well until it goes really wrong*”. Hence, though the host had not incurred negative consequences

⁴⁷ In an interview with this FDG participant a few months after that meeting, it was confirmed that his herd had been shut down with bTB for many months; thus, that personal experience was part of his sociocultural contextual frame. C2 Interview, 5 Feb 2019.

from operating a flying herd at that moment, the participants who were opposed to his modelled behaviour perceived that there was too much risk that he would eventually suffer consequences vicariously experienced by others (or themselves) to be motivated to attend to, retain and produce a similar system.

In addition to economic consequences, the *social* appropriateness or positive/negative feedback received by the role model may be another factor influencing learners' perception of modelled actions. I observed a discussion amongst Dairy B (22 Aug 2019) about carbon footprinting⁴⁸ that demonstrated how social feedback was a factor. All of the producers in that group operate grass-based systems and at the facilitator's request, they report average farm covers, fertiliser applications, grazing rotations, etc. for sharing prior to their monthly meetings. Thus, as a group they have a generally good overview of the efficiency of their systems with regards to nutrient inputs and grass utilisation in relation to growth. During the group's discussion about recording and monitoring, someone asked whether anyone was doing carbon footprinting and if so, what programme they were using. This elicited strong opinions from a few producers around the room who were against the idea that such data was either useful or meaningful for farmers to be burdened with collecting and reporting. One well-respected producer within the group interjected with the comment that if milk buyers and/or farm assurance schemes (e.g., Red Tractor) were not requiring such data collection and collation already, they would be in the future. Therefore, their farm was utilising a basic feature in their farm management software to monitor carbon footprint. *"It's coming, so why wouldn't we want to get ahead of it to maybe have some say in how it looks when it does. We can say 'we've already been doing it, so these are the things that should be included and not'"*. Many of the other participants nodded and murmured in agreement. Her argument made it clear that they were not doing it from an altruistic environmental perspective, instead acknowledging the growing societal concerns and consumer demands for increased transparency and reduced emissions throughout the supply chain. Thus, the modelled action was responding to the shifts in social appropriateness (i.e., doing one's part to combat climate change) and anticipating potential

⁴⁸ Carbon footprinting is a method whereby businesses account for their greenhouse gas emissions, or their 'footprint', caused by their operations. What is often contested is what should be included within the scope of possible emissions, e.g., extending beyond the farm gate to transport and energy for imported feed and inputs, etc. (Adewale et al., 2018).

positive consequences that may result from doing it. The observers or fellow group members, who would also be subject to those hypothetical future schemes, may have found such reasoning motivating to attend to her explanation and consider whether they should take up that action as well.

7.2.2.1 Inhibition and disinhibition

The function of inhibition and disinhibition in relation to modelled actions is more around negative consequences and either strengthening or weakening observers' inhibitions to perform certain behaviours. Inhibition refers to when the person modelling the behaviour has incurred negative consequences, which prevents observers from performing it or acting in a similar manner (Schunk, 2012). A very common example would be when the group members shared experiences where decisions made cost them too much money for what they saw in return or lost them money. Those vicarious examples were shared to deter people from making similar decisions.

One example during the Veg Growers meeting (2 Apr 2019) centred around an important crop for many of them: salad. High-quality salad was a huge money maker within their businesses due to the special supply arrangements many had with local restaurants seeking to market themselves as sourcing local food. Thus, they were able to command premium prices for undamaged salad leaves that could be used for decorative plating purposes or 'first use' (rather than needing to be 'hidden' in dishes due to less than perfect appearance). An issue generally faced then was how to wash the leaves in a way that would pose the least risk of damage. At the salad washing station on the farm, the host described their process of the leaves being washed by hand, but given the delicate nature of the task and the large amount of salad they produced and sold, he complained that it was time-consuming and labour-intensive. The group then offered techniques used on their farms, e.g., a well-received idea was repurposed wooden frames with thin wire mesh tacked to the bottom to act as a sieve. One cautionary example shared, however, involved the leaves being submerged in water for the first wash and then transferred into another container for a second wash before being dumped into a final container for rinsing and drying. The multiple transfers between the containers had actually caused leaf damage, so the principle of avoiding too many transfers was modelled to inhibit other producers from adopting a similar process.

Disinhibition involves actions that are risky or prohibited being modelled as not having incurred negative consequences, thereby encouraging observers to forgo their inhibition and perform the action due to the likelihood of a similar outcome (Schunk, 2012). The Dairy D example from Chapter 6 regarding the depth necessary to insert the tube to administer colostrum to calves involved a risky act that could result in negative consequences if done improperly. The group participants' prior experience and sociocultural context may have involved a calf's stomach being pierced in the past, either by themselves or through stories from personal acquaintances to whom it had happened. Or they may have felt fear (affective) that they would harm the animal and thereby incur judgment or shame (internal or external) for poor animal husbandry, all of which may have framed their observation of that modelled behaviour. Thus, to hear that the possible negative consequences would not be experienced from inserting the tube to the depth of the rubber band may have motivated the attendees to pay close attention to, assimilate/accommodate the information and possibly change their behaviour to adopt that strategy.

7.3 Additional elements influencing learning from role models

As seen in Chapter 6 in relation to the subprocesses of retention and production, actively assimilating or accommodating what is observed expands upon one's existing knowledge structures. Then, putting cognitively developed concepts into practice is assisted by the attention one pays to the modelled behaviour and motivation to learn it. As seen from the examples above, these subprocesses to attend to, retain, produce and feel motivated to learn may be influenced by the person modelling and their experience with the modelled behaviour. Theoretical approaches related to adult learning or andragogy, however, are also based on certain assumptions about adult learners. One of the assumptions is that "most adults are motivated to learn in order to deal with an issue or problem of immediate concern" (Merriam & Bierema, 2014, p. 53). In other words, rather than being subject-centred learning for postponed application as in the case of formal school learning, adult learning is more often problem-centred so that knowledge sought out or learned is for immediate application.

Building upon the discussion regarding factors which impact learners' perception of role models (e.g., competence, prestige, vicarious consequences),

the following sections focus on the learners' perception of role models' behaviour in relation to their own learning journey. They explore various elements that may influence learners' affective and motivational response to role models and the information, knowledge and experience purveyed through their modelled behaviours.

7.3.1 Goals and problem solving

One of the elements that may impact the way in which learners perceive role models' behaviour and motivate them to learn from it centres around their goals and problem solving. If a learner has determined a goal and s/he then perceives that the role model's ideas, processes and/or practices would contribute to achieving that goal, s/he will be more motivated to attend to, retain and produce the modelled behaviours (Schunk, 2012). When referring to adult learning contexts, goal-directed learning may contribute to a formal degree, e.g., National Vocational Qualifications (NVQs)⁴⁹. More often, however, adult learning occurs in more informal contexts as described in Chapter 3, which are aimed at developing both professional and personal qualities (Illeris, 2002). "In practice, this typically occurs through problem-oriented and to some extent participant-directed projects with a concrete professional content that also involves, recalls and deals with relevant personal function spheres" (ibid., p. 90; citing Illeris et al., 1995; Andersen et al., 1996). As expressed within the cultural historical tradition, this activity or goal-directed endeavour is where "the learner actively seeks influences that can be used in a particular context which the person concerned is interested in" (Illeris, 2002, p. 121; Leontjev, 1981).

One's social environment with role models offering various experience and knowledge, therefore, has a significant part to play in one's learning process (Jarvis, 1992). Thus, if the observer is seeking knowledge for immediate application to a problem and/or goal and perceives the modeller to have faced a similar problem to the one s/he is experiencing, the learner may cognitively process and adapt the model's successful approach or negative result to her or his own situation (Schunk, 2012). For instance, during the Veg Growers' meeting on the topic of irrigation (described in Chapter 6) (2 Apr 2019), the problem of drip irrigation along the beds was raised in addition to the already explored issue

⁴⁹ <https://www.gov.uk/government/publications/criteria-for-national-vocational-qualifications-nvqs>

of overhead irrigation in the propagation tunnel. As detailed in Dooley (2020), the host outlined the problem he and his trainees had with their current system for rolling tubing out alongside each of the beds. The job always ended up being much more complicated than anticipated and preferred—to prevent the tubes from twisting and tangling, two people had to work on it together, thereby requiring a double investment of time and labour. By contrast, he pointed out how one of their fellow group members had an excellent drip irrigation set-up. As her farm's better process had been mentioned two or three times already during the meeting when the host was describing something about his irrigation system that was not working or needed to be changed, he jokingly exclaimed, "*wait, why the hell are we not doing this at her farm?*" Everyone laughed but listened intently as he described how the absent role model had rigged up a bar to which she affixed the irrigation tubes. That way, one person was able to unroll the tubes and place them easily alongside the beds without the twisting and tangling complications.

These sentiments demonstrate the motivation to seek ideas, processes and/or practices from a role model in order to solve a problem or achieve a goal (e.g., improve one's irrigation system). But also, the joke about why the absent role model was not hosting the meeting since her irrigation system worked better than the host's illustrated the idea that FDGs focussed on a particular topic would often be held at an exemplary farm. The participants could then observe modelled behaviours that were effective for the host and cognitively process them to determine whether and how they might adopt them for their own operations. Nevertheless, I attended many meetings where the host was putting forth a problem s/he was encountering on-farm for the group's help in solving it. Many participants of the various FDGs expressed to me during the year that coming together and hearing about things other people were struggling with provided a sense of solidarity and comfort that 'you're not the only one'. As described above as well, learning from negative consequences or what does not work may be as important as what does to inform learners' progress towards a goal or in solving a problem.

Goal setting as a specific activity was also carried out at one of the Dairy D meetings (27 Mar 2019) as discussed in Dooley (2020). Led by the facilitator, I participated with the members in an exercise where we assessed our values, articulated goals and determined short-/long-term strategies for accomplishing

them. The aim was to elicit reflexive thinking about what the participants wanted to accomplish in their businesses as well as personal lives and how that aligned with their personally held values. There were a few farmers at the table who ran very profitable operations and through the discussion, it became apparent that the other participants were quite motivated to inquire after and attend to their modelled behaviours. One of the farmers described how she had made her partner write out a number of goals he wanted to accomplish by the age of 40 on post-it notes and then stuck them in a drawer. After one year, he reviewed them and despite having thought she was crazy for making him undertake that goal-setting exercise, he discovered he was making progress toward each of his goals. She emphasised that the process of actually writing them down had provided clarity and the impetus to work consistently to achieve something concrete, to which the facilitator reiterated the phrase, "*It's just a dream until it's written down, then it becomes a goal*".

Another participant shared the 10-year goal that she and her partner had set to train up staff so that they could get to the point where they could back off a bit and not be so full-on seven days a week in the farming operation. This strategic business management and planning had stemmed from a 'cliff-edge moment' they had experienced a few years before when they finally secured a milk contract with a set price for their specialty herd. Prior to that, she explained, they had just been treading water. There was no possibility to think about broader issues or alternatives—no matter how hard they worked, they were not making any money. Gaining more control over the business' finances, however, had brought about a 'mindset shift' towards having a better awareness of how to work smarter, not harder, and had therefore allowed them to be open and willing to take new opportunities. Another producer concurred, emphasising that it takes stepping out of your comfort zone to do things differently, "*whether the result is better or not, you work that out...but stick with 'we've always done it this way' and you won't make progress. And you also won't if you surround yourself with those type of people*". These modelled behaviours provided examples and arguments that challenged the other participants' attitudes towards risk, change and progress, demonstrating the importance of goal setting and willingness to change and experiment with solutions to problems. As explored in section 3.3 as well, the statement above also highlights the importance of one's environment with regard

to role models and their contribution to a learner's sociocultural context, which frames their acquisition, processing and utilisation of modelled behaviours (Gergen, 1994).

7.3.2 Outcome expectations

Again, drawing on the assumption that adult learners often strive to learn in order to solve problems they foresee or have encountered, another element which may influence one's motivation to attend to, retain and produce a role model's behaviour is outcome expectations. As stated in Chapter 6, outcome expectations are the learner's beliefs about the anticipated outcomes of certain actions. Simply stated, it is the belief that if X is done, Y will occur. In relation to goals and problem solving, one's outcome expectations are important. Schunk (2012) highlights that a learner may not be able to effectively plan for or create cognitive maps for how they might go about attaining their goals if they lack available options with coinciding outcome expectations. Even if it seems that a practice may help one attain a goal or solve a problem, the motivation to learn it will likely be quite low if the learner does not believe that the practice will result in the desired outcome. Similarly, if the learner believes that the practice will bring about a certain outcome but that, nevertheless, the outcome will not help achieve her/his goal or solve the problem, motivation to learn it may also be low.

Beliefs as to which outcomes will occur from different actions may be strongly influenced by role models within the learner's environment demonstrating certain outcomes from their actions. This introduces another reason that learners may (or may not) be motivated to learn from a role model—their perceived similarities; for instance, certain shared characteristics (age, years farming, risk-taker, financially prudent, etc.) or operational elements (owned/tenanted, cow cross/composition, block calving versus all-year-round). The functional value of the role model's outcomes and vicarious consequences perceived by learners may thus be influenced by whether they identify with or see the model as being similar enough to themselves to desire and/or produce the same outcomes. The interactions during the Dairy C flying herd farm visit detailed above exemplified this element. One of the older farmers who had questioned the host's approach as resulting in positive consequences to that point (profitability) but posing a huge risk of negative consequences (significant losses from costs and potential culls) sidled up to me during the farm walk. He politely asked how I

was finding the meeting and I gushed at him about how interesting it was to see how they interact and learn from each other, to which he shook his head and said, *“Oh, well, these guys are very radical...sometimes these groups are good to show you what you don’t want to do”*. That characterisation of radical, compared to how he viewed himself as running a very simple closed-herd autumn block calving system, indicated he clearly did not identify with the host and made it quite improbable that he would be motivated to pay close attention to the modelled behaviour as something he would consider for his operation.

The argument may be raised against learners selecting role models based on their perceived similarity to themselves as risking ‘group think’ or lack of diversity of views that would fail to push people to question whether they should be doing something different through a divergent modelled behaviour (Tindale, 2004; Azmitia, 2000). As discussed extensively in Chapter 8, however, I viewed multiple instances throughout the course of observing the FDGs where there was significant disagreement around certain aspects between participants even though they would be considered categorically similar farmers or share a collective identity (see Chapter 6; Stryker, 1980). Particularly the interviewees from the Dairy A-C benchmarking groups highlighted that challenging and being challenged by your peers was one of the primary reasons for attending FDGs. As a producer from Dairy C explained to me about one of his FDG peers, *“he is the sort of person you want in any discussion group, he’s um...he’s spring calving once-a-day, so he’s already a little bit out there. But when he speaks, I don’t always agree with him, but he’s always got a good point that everyone hasn’t thought about. You know...outside of the box thinker, and very business focussed. I rate [his] opinion a lot”* (C3 Interview, 5 Feb 2019). Thus, similarity (or lack thereof) may be a reason that participants would be motivated to attend to modelled behaviours by various role models based on their demonstrated outcome expectations and related vicarious consequences. Those outcome expectations, however, would then be used to assess whether the action should be taken up, needs to be modified to or would not fit the learner’s operational context (Jarvis, 1992).

7.3.2.1 Expansive learning

Understanding this social learning process where one’s cognition is influenced through interactions with one’s environment benefits from insights

from Engeström's theory of learning through expansion, whereby a problem serves as a stimulus for creative processes to occur within Vygotsky's zone of proximal development (ZPD) (Engeström, 1987). In line with a constructivist view of learning, through interaction with one's environment the learner may encounter a problem for which their knowledge and experience, or cognitive structures, do not have an existing set of alternatives on which to base outcome expectations. Therefore, the learner may undertake "[a] process involving a creative innovation that is important for the development of the individual and that transcends the limitations of what has previously been developed", or expansion to seek alternative solutions (Illeris, 2002, p. 55).

There were numerous examples throughout the FDG observations when a topic was mentioned which had been discussed at a previous meeting and multiple participants commented they had changed their behaviour in light of what they had learned at the meeting. For example, the Dairy D strategic goal-setting meeting above was the second meeting of that FDG, following the initial calf rearing interactive presentation with the veterinarian. As discussed in Chapter 6, a Brix refractometer had been modelled at that first meeting (28 Nov 2018) as an incredibly useful small piece of kit to help calf rearers quickly test the quality of their colostrum before administering it so they knew the calf was receiving the optimum level of antibodies. The facilitator followed up at their second meeting and asked whether anyone had changed anything with their calf rearing after the first meeting: 4 or 5 participants said they had gone straight home and ordered a Brix refractometer based on what they had heard and discussed at the meeting. This demonstrated that their outcome expectations were high that the piece of kit would result in effective measurements that they could easily implement based on the role modelling at the prior meeting and which were 'worth it' to their operations. Those types of learnings build on existing cognitive structures and allow for assimilation of the new idea, process or practice to solve a problem highlighted by the learner's interaction with their environment, e.g., how to ensure colostrum administered is of sufficient quality.

By contrast, interactions during the FDGs may highlight problems for which the participants' cognitive structures do not have existing sets of alternative solutions, thereby requiring creative expansion within their ZPD. In the case of rote standard school learning, whereby the teacher/authority figure introduces a

concept just beyond the learner's scope of existing cognitive structures (their ZPD), the question becomes what information is imparted upon the learner to shape their cognitive development (Vygotsky, 1978). A criticism of Vygotsky's conception is the potential for power imbalances within traditional schooling situations leading to the teacher's sociocultural context determining the learner's conception as opposed to the learner undertaking creative processes to explore and develop their own solutions using a variety of different influences (Illeris, 2002; citing Dewey, 1902). Harkening back to the statement above about surrounding oneself with peers who do not abide by the mantra of 'because we've always done it this way', learners may expand their cognitive structures through social interactions within FDGs that promote creativity and individually driven development of sets of (new) alternative solutions. This purposeful expansion formed the basis for empowered social learning within most of the FDGs.

An example of this expansive learning from role modelling around a problem or issue for which the learners stated they had no knowledge or experience to address it was witnessed at a Veg Growers' meeting (7 May 2019). The group visited a non-member's flower-growing operation, which the co-coordinators had pitched to the almost solely veg-producing members as an opportunity to learn about something new. I overheard one of the producers murmur to one of her peers as we walked through the multicoloured beds, "*I didn't think there would be this many people for a meeting about flowers...I'm impressed*". It was really interesting watching the exchanges between the host and the FDG members—armed with basic growing knowledge, the veg growers could ask informed questions about sowing, watering, harvesting, perennials, pests, weather impacts, etc. As the host led us through the beds and described numerous plants, however, the veg growers laughed amongst themselves that they had not even heard of multiple varieties she named off. There was resounding surprise and curiosity when the host responded to a question about harvesting flowers by describing the process of searing, in which the ends were burned or boiled to keep the sap from going out of the stem and preserve the flower. The veg growers' existing cognitive structures around harvesting and preserving their produce did not involve any such practice, so the host's explanation offered an expansive concept if any of the participants were interested in adding flowers to their market gardens.

On the other hand, the host described her entry into growing and renting the plot as a lucky opportunity that she had jumped at because it would never come up again. Thus, at the age of 23, she made the leap to leave her jobs as a waitress and trainee florist to grow flowers for her own arrangements for events (e.g., weddings) even though she did ‘not knowing what she was doing’. Multiple times during the meeting she made self-deprecating jokes about her lack of knowledge and experience, e.g., having learned about tubers from YouTube and being terrible at saving seeds because her method of storing them was “*in a packet like under my bed*”. One of the participants asked her about pests in her soil and she lamented about her struggles with a ‘really bad worm’—that elicited many questions about its shape, size, colour, movement, etc. and the growers conferred and agreed that it sounded more like a form of pincer beetle. Suggestions were proffered which she eagerly listened to but commented she would need to investigate more to choose which option she felt confident undertaking. Thus, the host’s limited training and experience with growing required significant expansive learning from various sources to creatively come up with solutions to the myriad problems she faced, e.g., deer nibbling plant shoots, a shared borehole with the neighbouring livestock operation, watering and weeding in the hoop house, the inherited layout of the garden, windbreaks, successional harvests, etc. Both of these instances demonstrate the process of expansion participants may need to undertake in building their cognitive structures for new and different practices.

7.3.3 Self-efficacy

Self-efficacy was explored in Chapter 6 in relation to the behaviour modelling component of social learning and how the learner perceives her/his ability to retain and/or produce a modelled idea, process or practice. Explored here, an additional element is how learners’ relationship to and self-assessment in comparison to role models may influence their self-efficacy. Thus, unlike the section above regarding expectations that an action will or will not produce certain outcomes as influenced by one’s environment and role models’ demonstration of those actions-outcomes, this section relates to whether the learner feels s/he would be able to carry out the action as the role model did and attain the same outcomes.

As will be covered in more detail in Chapter 9, one of the primary reasons people argued FDG participation was invaluable was the ‘huge social element’, e.g., Dairy D meeting (27 Mar 2019) discussion about FDGs’ benefits. But also, I heard numerous times that people valued the ‘opportunity to learn from likeminded people’. In speaking with one of the producers from Dairy A about his learning experience from others in the group, he emphasised the importance of surrounding oneself with people who demonstrate a growth-oriented mindset in order to push your own mindset and confidence. *“I respect certain peers who I interact with, many within our discussion group . . . I **really** respect their opinion, and they respect you asking sometimes. So I was talking to another farmer [in the group] last night, you know, on quite a confidential level about interest rates—and you interact and surround yourself by those people which give you confidence to do that [risk-taking] . . . and the problem is, a lot of farmers don’t do that”* (A1 Interview, 12 Mar 2019). His and his partner’s goal for the operation was to expand and take on another dairy, which he spoke about as being a total shift from how he was raised and how his father had operated their family farm. Risk-taking and incurring debt was strictly avoided, so despite his high self-efficacy as to his management skills as an exemplary dairy farmer, he was much less certain as to his abilities to navigate the huge undertaking of acquiring another farm and carrying a large debt burden. His statements, however, reflected the learning and support he gained through interactions with peers he considered role models within the FDG, whose shared knowledge and experience and modelled behaviours around strategic decision making he respected and relied on to help achieve their goal. This not only helped build his self-efficacy in believing that he could take on challenges and manage risks effectively, but it pushed him to metacognitively develop as well in terms of being able to think about his thinking and identify patterns, forecast and strategise multiple scenarios (Mezirow, 1991).

The Veg Growers example presented above regarding community engagement was also instructive as to how learners self-assessed in relation to the role model host and how that influenced their self-efficacy. The host explained that a key reason their farm was able to engage so many volunteers on a regular basis was due to their active social media strategy. Many people around the table looked perplexed—all attendees, as well as the vast majority of the wider Veg Growers group, were at most 35 years old. Nevertheless, commiserations ensued

about how they did not understand how to use social media platforms and questioned whether they would have anything to say that people would actually be interested in. A 20-year-old grower even stated she did not know how to use a computer at all, which was not the first time I had heard young growers in the group self-identify as technologically illiterate. The host interjected to assure them that people who would follow their accounts simply want to know about and share in their lifestyle. One grower in her 20s enthusiastically agreed and described her farm's Twitter and Instagram accounts, citing different purposes they each served, e.g., Twitter for short posts about upcoming events and volunteer opportunities, whereas Instagram was to keep people engaged through daily pictures of jobs and/or produce in the garden.

The growers who considered themselves technologically illiterate thus had very low self-efficacy in relation to how they perceived the host's and fellow group member's highly coordinated, successful social media campaigns. There was a lightbulb moment, however, during the discussion when the host provided examples of things they could snap quick pictures of around the farm and post on Instagram, e.g., sunrises from their view amongst the beds, blooms, insects, etc. One of the growers who had been very ambivalent in her questioning and body language thereafter reflected, "*I always thought it had to be very complicated*" and indicated she would consider trying to start her own accounts. The enthusiastic colleague offered that she could run some sessions for her peers in the FDG on the basics of using social media platforms, and those present emphatically expressed how helpful that would be. Thus, these interactions challenged the conventional assumption that younger farmers would be more tech savvy than older farmers as too reductive. A large majority of the FDG's membership displayed very low self-efficacy when confronted with an example of their peer(s) modelling technology usage and expressed either disinterest in attempting to learn and/or hesitation that they would be able to gain the same following and maintain the practice. The training sessions offered by a peer, however, seemed to encourage many to consider dedicating more attention and motivation to understanding how it might be useful for their businesses and the potential for improved competency and thereby self-efficacy.

7.4 Conclusion

The examples from participant observation and interview quotes presented in this chapter demonstrate that role modelling was another element of social learning widely demonstrated throughout all of the FDGs studied. Unlike behaviour modelling, which was extremely prevalent as a method within the groups to stimulate peer-to-peer learning (e.g., farm walks, CFP benchmarking, etc.) and more easily observable, exploring role modelling throughout the group's interactions required more inference on my part as the researcher. Based on affective statements made about the person modelling the behaviour, positive and negative indications could be interpreted regarding the observer's perception of their competence and/or prestige. The discussions around the modeller's vicarious consequences from various processes or practices provided insights into whether the learner perceived the feedback positively and was therefore motivated to attend to, retain and produce (adapt and/or adopt) them. Or alternatively, reactions to behaviours modelled that had received or were expected to elicit negative feedback could be inferred as relating to low motivation and likely low stimulation of those learning subprocesses.

Various additional factors were observed as having an influence on learners' affective and motivational responses to role models, including their goals and whether they viewed the role model as having experienced a problem similar to their own and demonstrating a viable solution. Thus, the information, knowledge and experience purveyed through modelled behaviours is quite important to learners' cognitive processing, but this will also depend upon psycho- and sociodynamic factors, e.g., whether s/he perceives the person as similar or relatable in terms of values, attitudes, intentions and motivations, which are shaped by one's sociocultural context. Thus, as discussed in Chapter 6, there were instances observed where the modeller emphasised elements of the group's collective identity that bolstered her/his status as knowledgeable and/or experienced, e.g., spring block calving, or those in contrast, e.g., social media / technology skills. The latter is quite interesting because many of the veg growers I spoke with over the year emphasised one the reasons they had chosen to work outside with their hands and grow food was a strongly held aversion to the idea of sitting behind a desk and having to not just understand but be fully immersed in modern technology. The group's collective identity centred on shared

constructed meanings as to lifestyle and ethos, primarily the rejection of a certain style of food production, but also ethical clothing, primitive housing, an (often vegetarian or vegan) seasonal homegrown diet, etc. Simultaneously, however, a producer couple I interviewed stated quite frankly, “*We are running a business, and there has to be a market for our idea. Otherwise, it’s just a hobby*” (V2 Interview, 6 Mar 2019). Thus, modelled behaviours that contrast or challenge a group’s collective identity in certain areas may garner attention and motivation if a different shared meaning is emphasised, i.e., business benefits that may result from engaging their community around local, healthy food online.

Additionally, interactions which address or introduce problems that go beyond the participants’ existing knowledge structures and require expansion within their zone of proximal development should be supported by providing space for creativity to explore different solutions. It might be that certain thoughts and/or behaviours require more time or modelling for learners to cognitively process and determine whether and how it may contribute to their goals / objectives. Viewing modelled behaviours from role models that the learner perceives as similar to herself or himself may additionally promote certain outcome expectations, or those who demonstrate different or contrary behaviours may stimulate cognitive subprocesses and motivation to learn if an element of one’s (collectively shaped) identity is emphasised to benefit from it. Self-efficacy is another factor which could require support through demonstration of role model’s similarities to the learner, broken down methods that make a complex solution more manageable, confidence-building through the discursive process, etc.

The power of role modelling in relation to these elements is exemplified in a producer from Dairy C’s explanation about his switch from Holsteins to crossbred cows ten years ago. “*We were high input, high output, we did achieve both things...but we didn’t actually make any money. The more milk we produced, the more knackered I was, it seemed less money we had...and less time for anything...they always went out to grass in the summer, but they always got a bit of silage as well...we did everything for the black and whites...but couldn’t make it work*”. His partner interjected, “*then you went on a farm walk and saw somebody doing a really really good job, and the only difference was he had a different type of cow...and therefore a different type of system to suit the cow...and he was*

*making a lot of money. And through this discussion group that he went to, he came home and said, 'We're going to do that!' It was a real lightbulb moment, going to see someone who was doing a really good job, and it wasn't a retrograde type of thing, he was high standards, high welfare, you know...but he was making **shedloads** of money. And it just changed how we thought we should go." "Yeah, we were on a cliff edge. Same time the bank manager came in and said, technically, you are excellent. But I got people who farm the same as you and make far more money than you. So all those things came together and until I went to this farm to see it, I couldn't see how."*

CHAPTER 8 – SELF-REFLEXIVITY

"Man in the Mirror"⁵⁰

It was my first meeting with this group. Being in the initial stages of observing their interactions and beginning to understand 'who was who' and how they related to each other, one of the older members of the group kept challenging the host farmer about his system. I observed him to be quite well respected by his fellow members as I later learned that he is a quite successful, dedicated low-input dairy farmer, but they also seemed to appreciate his bluntness if he disagreed with someone's approach or opinion about different topics. The back and forth continued with 'what if' questions around risk exposure and 'yeah, but' responses until finally he exclaimed, "That's fucking insane!" Instantly, he shot me an alarmed look across the room, looking for my reaction to the fact he had sworn in front of me. Immediately, I understood. I was the only woman at the meeting, it was the first time I had ever joined them, and I was quite young compared to a lot of the participants. They were operating under the sociocultural constraints around language and gender that discouraged swearing in front of a woman. They would have had no way of knowing how unoffensive swearing was to me, particularly in light of my formative experiences on the farm with Grandpa Toby, who too often got disapproving glares from my mother for unwittingly teaching his grandkids 'bad words'.

Quickly processing what that look signified, I determined two crucial points: 1) they were conscious of an outsider observing their interactions, and 2) there was the potential for self-censoring based on point number one, especially given my gender. As an ethnographer, I needed to observe naturally occurring processes, which would not be possible if simply by being present I influenced the participants to change their behaviours. I needed the guys to not even think twice about swearing if that was how they would normally interact with each other in those spaces. So, I quickly shrugged off the jokes about there being 'a woman present', gave the guy an approving nod and in order to encourage them to communicate naturally with me and, more importantly, each other, I pleasantly resolved not to censor my swearing around them at all.

8.1 Introduction

As outlined in the conceptual framework (see Chapter 3), self-reflexivity was the third element of social learning theory used to analyse the peer-to-peer learning interactions occurring within the FDGs observed. A quick recap of what this element entails and how it differs from reflection is useful to set the context for the remainder of the chapter. Bandura's original theory incorporated what he termed self-regulation, which was stimulated through interaction with one's environment as to whether the modelled behaviour was understood and

⁵⁰ Ballard, G., & Garrett, S. (1987). Man in the Mirror [Recorded by Jackson, M.]. On *Bad* (CD). Los Angeles, CA: Epic Records (31 Aug).

performed in accordance with what the learner had observed (Bandura, 1977). This process was fleshed out to incorporate not simply post-production reflection but also preparatory and synchronous monitoring of oneself before and during production of the modelled behaviour for satisfactory cognitive processing, retention and utilisation of the modelled knowledge or skill (Schunk, 2012). Thus, we can see quite clearly that time plays an important role in the self-regulation concept as it does in reflection, which connotes looking back on something for assessment according to varying criteria (Illeris, 2002). Purposeful reflection also has a forward-looking focus around inciting change based on the assessment. As stated in Dooley (2020, p. 3), “Reflection has been described as a cognitive process of active, deliberate thinking aimed at rational, logical problem-solving or reflection-in-action—understanding new perspectives and ideas and building knowledge through experimentation” (citing Schön, 1983). Through the process of observing modelled behaviour, therefore, the learner may be motivated to reflect actively and deliberately on the information, outcome expectations and vicarious consequences, think critically about how to accommodate new information and whether and how to effectively use it.

Reflexivity goes beyond this concept to incorporate critical assessment of not just whether the modelled behaviour was understood and/or performed ‘correctly’, or whether one wants to replicate or adapt the learned information (Schunk, 2012; Prager & Posthumus, 2010; Kolb, 1984). It is a self-aware scrutinous process whereby the learner questions whether it is the right idea, process or practice in accordance with one’s values, beliefs, and intentions (Illeris, 2002, citing Ziehe, 1985; Giddens, 1990). These factors, influenced by the learner’s sociocultural context that give rise to assumptions and biases, are not static; rather, interaction with one’s environment may challenge their validity, applicability and desirability (Pillow, 2003; Bandura, 1986). Béres and Fook (2020, p. 11) highlight that reflexivity involves being “aware of who we are as whole human beings and how this influences the way we think and behave”. This evaluation of one’s frame of reference, or thinking about “the types of knowledge we create, what we think is important, and the interpretive frameworks we use”, introduces metacognitive processing through social learning processes (ibid.).

The prominent learning theorist Knud Illeris (2002, p. 95) elaborates about the difference between reflection and reflexivity with regard to learning:

[R]eflexivity is, like reflection, in most cases a particular form of accommodation. Both forms are characterised by having the nature of displaced elaboration, i.e. to some extent there is a time lag in relation to the influences causing them. But what is special about reflexivity is that it involves the organisation of the self...not necessarily limited to internal processes, but [it] can also occur through interpersonal communicative processes...as an aid to gaining insights into one's own self-comprehension by observing the reactions of others, and listening to their evaluations.

This evolving perspective of the reflexive learner provides the frame for the chapter, which explores the role that the FDGs played in encouraging learners to undergo self-reflexivity in their learning process. First, descriptions and examples are explored to demonstrate how the groups' interactions and discussions generally facilitated learning through the use of collaborative competences. Examination of whether and how their collaborative processes exhibited critical thinking and advanced cognitive skills throughout their shared meaning making also forms part of the foundation. From that basis, different perspectives are shared from FDG participants as to shifts resulting from peer interactions invoking the need for dialectical thinking and the process of "reflection upon the nature of reflection itself" (Giddens, 1990, p. 39). This leads into examination of examples to determine whether/how they illustrate the interplay between the groups' social interactions and self-reflexivity by the participants. In many instances, the learner was confronted by and had to negotiate divergent viewpoints and contrasting practices that if considered in isolation may have only been cognitively assessed. But in these collaborative contexts with established social communication norms aimed at fostering debate through constructive criticism, higher-level metacognitive responses were often not only the intended outcome but the result. Critical discourse therefore emerged as a crucial component of the learning process promoted through peer-to-peer interaction in the FDGs, fostering self-reflexivity.

8.2 Collaborative learning processes

As detailed in Chapter 3, collaborative learning is a process whereby actors learn through interaction, joint exploration, sharing of different experiences and knowledge and construction of shared meanings with each other (Warsah et al., 2021). Peer-to-peer learning is collaborative learning between peers, which the previous chapters have shown in the context of the FDGs observed involved

behaviour modelling of ideas, processes and practices of mutual interest, with different peers perceived as and therefore acting as role models on various topics. In order to lay the foundation for exploring whether the interactions occurring throughout the course of the FDGs promoted metacognitive development and self-reflexivity, thereby fostering social learning, we first need to understand how the groups fostered cognitive engagement and enhancement toward their common objective of learning.

In highlighting the essential role interactions play within collaborative learning, Warsah et al. (2021) point to two different types of interactions taking place: cognitive and socioemotional. Cognitive interactions are where learners are “actively involved in the processes of thinking, reasoning, analyzing, and elaborating with one another concerning the learned material” (ibid, p. 444-45). Socioemotional interactions, on the other hand, involve processes whereby learners come to “understand each other, complete their competences, be empathetic, and feel the essence of their collaborations with each other” (ibid., p. 445). Through these various interaction processes, collaborative learning has been found to positively impact cognitive learning (Chee et al., 2018; Fawcett & Garton, 2005) as well as learners’ social and emotional functions (Tolmie et al., 2010), psychological development (Marzano et al., 2001), and collaborative competences through the engagement process (Chatterjee & Correia, 2020).

Elaborating on the learner competences found to underpin effective participation and learning in groups, participants must be capable of communicating clearly, managing and resolving conflict, problem solving and decision making (Valdes-Vasquez & Clevenger, 2015). These competences support learners in carrying out general collaborative learning actions, such as asking questions of their fellow collaborators, discussing different ideas, explaining concepts, debating approaches and conclusions, and constructing knowledge together through shared experiences and insights (Ruys et al., 2014). Collaborative learning studies have also shown that learners’ critical thinking skills improve by engaging in this type of learning process (Hunaidah et al., 2018; Kusumawati et al., 2019; Lee et al., 2014; Saiz Sanchez et al., 2015; Sulisworo & Syarif, 2018). Critical thinking is a desirable learning outcome as it emphasises “purposeful, reasoned, and goal-directed thinking”, developing learners’ “heightened awareness of multiple points of view and context” and the need to

“evaluat[e] one’s own thought processes before reaching a conclusion” (Halx & Reybold, 2005, p. 294-95). Thus, critical thinking relies on strategic employment of cognitive skills, such as analysing, reviewing, projecting, hypothesising, interpreting, reasoning (inductive and deductive), inferring, evaluating arguments and identifying assumptions (Yeh, 2012; Halpern, 2003; Hughes et al., 2010; McCarthy-Tucker, 2000; Moore & Parker, 2009; Norris & Ennis, 1989).

The following subsections will discuss examples of how various forms of collaborative competences, actions and (high-level) cognitive skills were demonstrated by the FDG participants in their learning processes, laying the foundation for critical thinking and metacognition.

8.2.1 Collaborative competences and actions

All of the FDG participants possessed and utilised varying and various amounts of collaborative competences that contributed to coming together on a regular basis, interacting and covering different topics with the intended purpose of learning. As the FDGs were voluntary, these adult learners were under no obligation to collaboratively seek out learning opportunities not only from their peers on a one-on-one basis but additionally in a group context. Therefore, their decisions to continuously engage in that type of learning format in itself demonstrated a basic willingness and motivation to communicate with others about shared concerns, different experiences with certain practices and knowledge acquired from various sources.

The Veg Growers Group provides an excellent example of a collection of individuals with significant collaborative competence who sought to collaboratively learn from one another without any external prompting or organisation. Despite not having a professional facilitator, their meetings proceeded smoothly according to a loose format of an initial farm walk illustrating a particular topic and then dinner and discussion. Nevertheless, as with every group studied, there were variances in individuals’ communication styles and personal characteristics that demonstrated variations in their communication competence within the group.

The original chairperson wanted to step down halfway through my fieldwork period; thus, they held a discussion about the future fate of the group (13 Nov 2018). The chair had expressed to me how worried she was about

whether there would be anyone willing to take over the position. The fear was that the group, despite being highly valued by the members, would potentially dwindle away without that driving and organisational role. During the discussion amongst the group about what the duties entailed, she revealed that finding hosts for each month had been one of the most challenging jobs due to the general expectation that hosts were responsible for leading the discussion. Many people had been nervous about and reluctant to stand up in front of their peers and lead the meeting. I had observed five meetings by that point in following the group, and there was a strong rapport amongst the members who regularly attended. Neither the hosts nor the participants appeared visibly nervous about engaging in their exchanges. As with every group, there were certainly recognisable people who spoke freely at each meeting, asking questions, clearly communicating examples and ideas about alternative ways that different actions could be carried out, etc. There were also some who rarely, if ever, spoke up in front of the group, instead communicating with colleagues in smaller groups as we moved between areas of the garden or afterwards during dinner. When the chair stated that in front of the group, however, I was surprised that any of the group members would be uncomfortable or not confident to host a meeting, which 'only' involved explaining their setup and being asked questions by their peers.

Trying to reflexively assess my reaction, I remember thinking that the people around the table at that meeting were either young business owners or training to potentially accomplish that goal within a relatively short period of time. As small business owners, they juggled multiple responsibilities, such as bookkeeping, marketing, sales, management, on top of the intense, long hours needed for all the technical jobs in the garden, e.g., sowing, weeding, harvesting, cleaning, packing, etc. The idea that any of them would fear presenting about their business and answering questions as to why they made certain decisions or carried out their practices in a certain way was unfathomable to me given how well they knew the subject matter and their entrepreneurial competence. However, I was coming from the perspective of having worked in research around agricultural and environmental law and policy for over a decade and having facilitated numerous meetings and discussions. Personality characteristics aside, the amount of experience I had with the concept of standing up in front of a crowd of people and presenting ideas, being asked questions and making arguments

for different positions potentially far exceeded most of theirs as it was part of my formal jobs over the years. Upon reflection, it was understandable that someone who chose a career growing food and working with their hands outside might lack the motivation or self-efficacy to engage in public speaking and critical questioning.

In a roundtable discussion, the attending members discussed the role that the future chairperson(s) could play in leading the meetings to alleviate that pressure and potentially make people more willing to agree to host. Interestingly, however, concerns about power dynamics were raised, in light of the group's dedication to democratic principles, if one (or two) person(s) were always speaking rather than different people choosing what and how to present ideas. However, the members simultaneously recognised that the meetings needed to be structured, so they brainstormed that someone at each meeting could be designated to time-keep, each meeting could start with a round of introductions, and topics could be decided through a consensus-based approach. Thus, they agreed that the chairperson(s) could help guide the discussion for those who were less confident as hosts, but no single person would lead each meeting. This account illustrates not just the communicative competence of the group members to present information and ideas for how they could accommodate different needs to be able to function well together, but also express concerns about whether they adhered to the group's agreed norms and principles.

Problem-solving was one of the key collaborative competences demonstrated by the FDGs studied. The typical format involved an informal expression of concern made by either the host or one of the members about a problem being faced on-farm and then the group subsequently offered knowledge and experience-based suggestions about potential solutions. Often, the host farmer would specifically highlight issues s/he wanted her or his peers to help with before the start of the meeting, with the shared expectation being that the host would have multiple strategies or a clear idea of potential solutions that could be adopted/adapted by the end of the meeting. Examples of problems I witnessed the groups engage in problem solving about dealt with breeding and fertility, feeding levels and concentrate types, silage cutting and making, propagation tunnel use and design, bed structures and (inter-)cropping plans, pricing and distribution of veg boxes, etc.

A representative example of problem solving occurred during a Dairy B meeting where one of the issues the host wanted help with was the problem of which farm machinery to keep or sell (28 Mar 2019). Having 'too much horsepower' or unnecessary machinery within the business was negatively impacting its efficiency, and as a benchmarking group, the host's fellow members could contribute solutions to reduce that comparatively high section of the farm's CFP. Sitting around the kitchen with our teas and coffees, the facilitator asked the host to give an overview of the number and types of different machinery on the farm, which he noted down on the flipchart in the corner of the room. The host prefaced the discussion with the comment that multiple different sources had advised streamlining from three to two tractors, but she was unsure which ones, whether all should be sold and two different acquired, etc. The problem-solving process then built upon that basic foundation of information with the participants asking questions about the function of each of the pieces of machinery within the business. They inquired about how frequently each was used, by whom, and for what purposes, following up with additional questions based on the answers. This continued during the farm walk as we viewed the different pieces and the setup, e.g., the yard and sheds that would need scraping, the silage pit and feeding routine, to understand how machinery fit into the way the farm functioned.

Through their questioning and observations, the members uncovered that one of the tractors was old, infrequently used and only for a single purpose. One member proposed that, in fact, the host could downsize to only one tractor that could be used all year since *"it's a personal choice how much you want rather than need...because you only need one"*. Debate ensued about this suggestion as there was significant disagreement about the quickness of different jobs and whether they could all be done with only one piece of equipment, namely, a JCB® telescopic handler. Multiple members claimed it was the most important if not the only piece of machinery needed due to its ability to be used for multiple purposes. Another member disparaged, however, *"Never get one because you'll never get rid of it. It's expensive to buy but it's even more to run. You could pay someone hourly instead"*. Whilst out in the yard viewing the machinery and discussing the time comparison between a mixer wagon and a JCB®, one of the participants argued that instead of burning diesel with a couple of machines, the host's employee could just push ten loads from the silage pit with the telehandler and it

wouldn't take that much longer than the mixer wagon. The host admitted she did not have a frame of reference for how much time the job took or how it could be done differently, so one of the participants stated he would forward her a photo of feeding out with a JCB® to help her have more information on which to base her decision. During the final part of the meeting, the options for streamlining the host's machinery were recapped by the facilitator. In conjunction, the host acknowledged her pros and cons for each choice that would factor into the final decision.

The group's problem-solving competence was vividly demonstrated throughout this exchange. In order to gain more information, the participants asked questions aimed at understanding the context behind the host's problem. Through this process, wider issues of employee competence (lack of autonomy, low foresight and decision-making capacity and inability to entrust complex jobs) became apparent. This was important to inform the debate moving forward due to the varying levels of capacity within the farm team that would be necessary for the different solutions proposed to be carried out effectively. Conflicting experiences and insights about pieces of kit were shared, leading to a richer constructed understanding as to their benefits and drawbacks, as well as varying conceptions about the role and function of equipment within the farm business. As with many problem-solving processes observed, money was not the only factor—convenience, efficiency, ease of use, fit with the system, etc. demanded an integrated assessment of which solution(s) would fit best with that context.

Collaborative competences were not as well demonstrated by groups when their meetings were centred around expert presentations though; namely, Beef & Sheep A & B and Dairy D. During those types of meetings, the flow of information typically reverted to the traditional education and extension approach of knowledge transfer from the expert to the participants as opposed to knowledge exchange with the presenter and amongst the participants (Koutsouris, 2012). A vivid example occurred during the Beef & Sheep A meeting focussed on mental health (30 Apr 2019) mentioned in Chapter 6. The meeting was held in a beautiful, small café in a remote rural town. Four or five participants sat around five sturdy wooden tables packed into the space. Prior to the start of the meeting, I watched as the participants at each table spoke animatedly to each other, seeming to be at least friendly acquaintances or possibly neighbours

(members of that FDG were restricted to a specific geographic location). I introduced myself to the woman sitting next to me at our table at the back of the room, and she was quite pleased to make conversation with me as it was her first time attending the FDG. She had just moved to the area with her husband who was from there and she professed to feeling a bit out of place since she was not from a farming background and did not know anyone there. The three other young women at the opposite end of the table nodded politely but talked amongst themselves for the entire duration of the meeting, making no attempt to interact with either her or me.

The coordinator initiated the meeting with a brief introduction of the topic and speaker, and the expert began presenting about her journey to becoming a certified counsellor and the various services she would be providing through her new practice she was setting up in that area. The presentation went on for approximately 30 minutes and then she asked the participants whether they had any questions. One participant asked about how to convince someone they needed to seek help for their mental health if they were resistant to it and there was a follow-up comment from another participant about how difficult it is to have these types of conversations with farmers as they just put their head down and keep working but may not be talking to anyone about how they are feeling. The presenter delivered an answer about how all conversations would be confidential and the reasonable rates she charged for her sessions, but there was no more exchange about this highly complex issue of farming having very high rates of mental unwellness as well as a cultural resistance to seeking formal support (Lobley et al., 2019). The expert did not ask the participants about situations they had encountered or strategies they had tried with successful results, which would have incited reflection and peer-to-peer learning from each other's experiences. Rather, the coordinator wrapped up the Q&A session with the traditional thank you to the speaker and 'let's show our appreciation in the usual way', and the individual tables broke into separate conversations. I was only privy to the conversation happening at the table where I was seated, but it certainly did not involve the participants sharing what they knew about or had experienced regarding mental health and farming.

This example is illustrative of an instance where collaborative actions, e.g., asking questions of fellow collaborators, discussing different ideas, explaining

concepts, debating approaches and conclusions, and constructing knowledge together through shared experiences and insights, were not only absent but discouraged due to the structure of the learning intervention. The fact that the expert presented information to the participants for a long stretch of time without incorporating questions failed to reinforce the individual learners' attention, retention and production. But also, failing to encourage interaction amongst the participants diminished the social learning potential. The participants may very well have possessed collaborative competences which would have allowed them to engage in that type of learning process, but there was no prompting or opportunity to utilise those competences in that scenario. Thus, unless the small groups at each table independently exercised the above actions during their conversations following the presentation, it is highly unlikely that collaborative learning outcomes, e.g., critical thinking around different viewpoints on how to effectively deal with mental health issues in relation to farming, were achieved.

8.2.2 Cognitive skills for critical thinking

As highlighted above, collaborative learning processes have been found to improve participants' critical thinking skills through having to engage with different points of view and evaluate their validity in relation to one's own knowledge and experience as well as external information in order to form a reasoned conclusion (Halx & Reybold, 2005). Observations of the FDGs offered many examples of instances where critical thinking was necessary to determine whether new ideas, processes or practices offered a valid alternative to the participants' current way of thinking about or doing something. Through those instances, advanced cognitive skills employed to carry out the critical thinking were evident as well.

An example from a dairy A meeting on farm succession within the host farm's business illustrates how critical thinking was fostered through the group's collaboration on the topic (27 Feb 2019). The members convened in the new shed that had been built since their previous visit a few years back and chatted as they drank teas and coffees. The facilitator welcomed everyone and introduced the host family and the topic of 'future proofing' their business before handing over to the older generation male farmer and one of his sons to give an overview of the operation. They explained the situation with father, mother, and two sons all in a limited partnership, with dad interested in stepping back and the

younger son taking the lead role in managing the business. They spoke about concerns for the long-term security of the business as it expanded, the working relationships within the family and how the sons' eventual marriages might affect the arrangement. The facilitator led the group through a SWOT analysis, a participatory learning tool where the participants contributed post-it notes within four quadrants (strengths, weaknesses, opportunities and threats) about their assessment of the host farm. A key threat analysed by the group was the part of the grazing platform owned by an uncle and how that would continue to factor into the business' strategic operating plan.

The hosts introduced the possibility they were considering purchasing that parcel of land from uncle, exercising the skill of projecting forward and hypothesising that by buying him out rather than continuing to rent would provide long-term security to the business. Their argument was that having any part of the base acreage necessary to support the herd size they were aiming for outside their direct control introduced an element of risk in case the relationship went sour and he refused to rent to them in the future. Their peers acknowledged the risk but challenged the reasoning that the risk necessitated massively increasing the business' debt burden. Under the parameters of the existing plan for expansion, the farm's capital was already going to be stretched trying to generate enough profitability to support more incomes (having previously only supported one family). Group members who had similarly taken out loans for expansion drew on their experience and knowledge of repayment rates and cash flow to evaluate the option and recommend that the hosts not try to repay too quickly, e.g., opting for a 40-year repayment as opposed to 25-30 years. *"You'll kill yourselves trying to generate enough cash flow to repay, and why?"* Another member offered the suggestion that they could try an interest-only loan at first to get things in line to then repay, inferring they could carry the loan if they had a grace period to expand the herd and generate more milk. An assumption was identified that they were limiting their options to the existing ground and could explore other acres to rent besides the uncle's, or they could budget for buying in silage to make up the difference. The latter argument was evaluated as a steady option but costly to the business without building equity and therefore less attractive.

This collaborative process of analysing the farm's succession situation and different options to future proof the farm business demonstrated their collective

ability to apply critical thinking skills to problems posed by their peers. Rather than simply offering different opinions on whether the proposed option to buy the uncle's land was good or bad, for example, the participants reasoned, inferred, projected, hypothesised, and evaluated the various elements and complexities of the host's situation to propose tailored solutions. Another example observed during a Dairy C meeting centred around a debate as to where to place the silage pit or 'clamp' for a self-feeding operation (7 Nov 2018). The host's dairy operation had been converted from beef about five years prior to the group's visit, installing cubicles for the cows on either side of the main aisles through the shed and a clamp on the edge of the concrete yard to allow the cows to eat from when they preferred rather than feeding out with a machine at certain times of the day. The face of the clamp was thus exposed with the tight plastic cover on top being slowly pulled back as the cows consumed more and more of the large reserves. A wire stretched across the length of the clamp to stop them from freely gorging, moved forward every day by a few inches to allow limited access to the face. The members performed the typical silage assessment, picking up handfuls to inspect and smell, but as it was torrentially raining accompanied by gale force winds, we quickly retreated to the shed to discuss the setup.

Interestingly, the terrible weather at that moment illustrated the pitfalls of how the silage pit had been placed. Partly, the rain hitting the face was due to the intense, sideways blasts of wind, but the facilitator also initiated a group discussion about whether the clamp was facing the wrong direction. It is recommended that self-feed clamps face northeast to avoid rain coming from the south/west⁵¹; the host's was sitting at a northwest angle and as we observed, was more exposed to the elements. In order to maintain the dry matter content of the silage and quality of feed intake by his cows, thereby affecting milk production quality and quantity, his peers reasoned it would be in his best interest to reconsider where he positioned his clamp. They hypothesised about different possible locations around the shed. One member pointed over to the back side of a shed about 10-15 metres away sitting at a 90-degree angle from the current clamp. "*Why couldn't you put your clamp against that building? It would be shielded from the weather and facing more northeast?*" Various other members

⁵¹ See Balsom, A., *10 tips for switching to self-feed silage*, Farmers Weekly, 14 Nov 2017, <https://www.fwi.co.uk/livestock/livestock-feed-nutrition/10-tips-switching-self-feed-silage>.

noded in agreement and asked the host for clarity about the flow around the yard in order to project how that option might play out. His concern was that given the end of the shed the cows exited from to eat from the current clamp, that suggested position would be too far (lameness was a particular concern on his farm). Another member inquired whether there was a reason the cows couldn't exit from the opposite end of the shed. If that option was possible, it would reduce the amount of concrete yard between them and the clamp. The host paused and acknowledged the validity of the argument.

That instance demonstrated the application of critical thinking skills to a problem involving physical infrastructure on-farm, which involves many more constraints to change than processes or practices. Significant labour investment and capital expenditure may be involved with making alterations, but most options must fit with the existing structures rather than designing or building from scratch. Thus, the clamp needed to fit with the host's existing yard—he was not going to knock down a building to be able to place his clamp at an exact north-easterly angle next to the shed. The group's analysis of possible locations therefore needed to work within the confines of what was practical, affordable and easily changeable. The alternative that would require the cows to exit the shed at the opposite end, however, revealed the host's embedded assumptions or frame of reference through which he was evaluating each argument; namely, that they would maintain the current cow flow. The argument from his peer caused him to move outside that frame of reference to reassess whether the existing structures were the way it had to be or whether they could be altered to reduce the risk presented by the different options for change.

Other FDGs' discussions were observed to incorporate critical thinking skills as well when analysing options for change within the hosts' operations and evaluating arguments presented by their peers. Similar to the example above about collaborative competences amongst the groups though, there were less observed incidences of demonstrable critical thinking during meetings featuring expert presentations. For instance, a joint meeting between Beef & Sheep A and B involved a PowerPoint presentation by a tax expert on the new electronic filing requirements being brought in by the UK Government⁵² (6 Feb 2019). The talk

⁵² UK Government (2020). *Making Tax Digital*, HM Revenue & Customs, <https://www.gov.uk/government/publications/making-tax-digital/overview-of-making-tax-digital>.

was held in the back meeting room of a traditional old pub in rural Somerset; the smell of the post-meeting buffet supper wafted through the room. Tables of various sizes were packed into the space and filled with people, totalling around 45-50 attendees. The expert was the focal point, standing at the front of the room with a big screen behind him, which was emblematic of the meeting's structure—imparting knowledge to the participants about the new rules and electronic filing system.

As the expert went slowly through the information on the slides, he flipped back and forth between the Government's electronic filing website to demonstrate where to find and how to do the various things he was describing. From my perspective, it appeared to be a very basic tutorial for people unfamiliar with technology, which was how some participants self-identified when they asked questions following the presentation. I watched people's body language as they listened to the information and watched the visual demonstration—little groups of participants at the various tables turned to look at each other and raised their eyebrows, shrugged their shoulders, some looked down at the table rather than forward to where PowerPoint was projected, and others let out little snorts of laughter or shook their heads in apparent exasperation at certain points when another bit of (perceived) complicated information was presented. After the close of the meeting, I overheard two participants joking with each other about the presentation whilst standing in the queue for the buffet supper: "*Well, that was clear as mud!*"

Again, the structure of the intervention did not build collaborative learning into the process or specifically aim to encourage critical thinking amongst the participants. Rather, it was a 'show-and-tell' type of presentation (F2 interview, 12 Nov 2018), whereby new information that for many was beyond their existing cognitive structures needed accommodation within the zone of proximal development (Vygotsky, 1978). Along those lines, the handful of questions asked of the expert after the presentation primarily focused on clarifying the process rather than an in-depth assessment of the different recordkeeping options or similar analyses of how this changing approach could potentially benefit their businesses, for instance. As acknowledged with regard to collaborative competences, simply because critical thinking skills were not demonstrated by the participants during the observed learning intervention, it does not mean they

were not being put into practice internally to cognitively process the information. Nevertheless, not only the lack of discussion but also the expressed confusion and gaps in comprehension would suggest that advanced cognitive skills were not being effectively employed within that space, but rather more basic cognition around assimilating and attempting to accommodate new information.

As shown through the examples above, higher level cognitive skills were actively utilised when FDG participants engaged in discussion and collaborative learning rather than passively listening, absorbing, processing and clarifying new information. Thus, social interaction is a critical factor in deepening the learning process by fostering critical thinking about a common topic. As the following subsection shows, interaction may not only require participants to methodically analyse issues and various approaches toward solving them, but it may give rise to instances where dialectical thinking is necessary to negotiate and navigate how to reconcile the information.

8.2.3 Development of dialectical thinking

In speaking with FDG participants about their learning process within the group, many described their cognitive development or evolution towards what has been termed dialectical thinking in educational theory (Basseches, 1984). Dialectical thinking is particularly relevant for adult learning as it allows for consideration, reasoning and conclusions based on various complex, contradicting conditions (Merriam & Beriema, 2014). As explored in the previous section, learners should be able to transfer knowledge between contexts, develop specialised knowledge and skills that become part of one's personality and impact cognition, project about future scenarios and monitor their implementation, think critically involving examination of underlying assumptions and behaviours, etc. (ibid.). A critical factor, however, is the ability "to deal with *paradoxical situations*. Doubt, ambiguity, uncertainty, systems thinking and self-reflective thought tend to give rise to paradoxes. ... [A] paradox can only be resolved by moving outside the frame of reference (or personal model of reality) that contains it, and beyond the cognitive strategies that are creating it" (Mackeracher, 2004, p. 121 (emphasis in original)).

In exploring members' learning from FDGs, I had a lively, fascinating joint interview with a participant of Dairy C and his partner over their kitchen table about the paradox they faced when taking over from his father a few years prior.

He told me, “*When I was thinking about getting into farming, I thought about doing what my dad did, but bigger....But then AHDB did a workshop up in Leicestershire on joint ventures...[a farmer/consultant] opened up his books to everyone there and I was blown away by his figures! I come from a background where you work hard, you live a lovely life, but you don’t really get any returns. You just sort of tick along. After that meeting, I came home, looked at our system and said, ‘hey guys, maybe we should be rethinking things?’ I started going to two different discussion groups, way before we even started doing anything...so I could go to different farms and see what they were achieving*” (C3 Interview, 5 Feb 2019). His partner chimed in, “*yeah, you had quite a few conversations with farmers about their systems, not just about cows, measurements and stuff like that but figures – everything. I didn’t expect that from farming.*” He affirmed, “*It did amaze me. One of the discussion groups let me come along for two years when I wasn’t even dairy farming yet, listen in and ask questions...then when we got to the point of thinking of really going for it, I just asked, ‘can anybody come to the farm?’ And some of them turned up, informally, just on their own time for a day/half a day. It was brilliant, everyone had a different opinion about how they would do things and where everything should go. But that’s how we built our concept for the farm...their examples and suggestions and decided what we wanted to do not just from an economic point of view (which looked amazing), but also lifestyle (I liked the idea that we would work hard for a certain number of months during the year and then have good down time during parts of the year), animal welfare (I liked the way we would be producing food), the system...it made sense to be a grass-based farm because of our location (we’re not going to grow crops here and it’s good ground for producing cheese) and I don’t like the idea of animals being inside.*”

This example is illustrative as to the development of dialectical thinking in many ways. The farming couple was facing a significant paradox in relation to the type of system his father had been running and the introduction of information that cast doubt and ambiguity over whether that existing frame of reference and the cognitive strategies creating it needed to be expanded beyond. The idea “*hey guys, maybe we should be rethinking things?*” exemplifies the notion of critically analysing whether a new farming setup should be explored rather than continuing on with the existing structures simply because implementing them would be more

familiar and/or easier. In speaking with multiple members of FDGs and touring other farms during meetings where various approaches were discussed, the exercise of dialectical thought by the farmer meant that more than what would be the most profitable system was considered. Examination of underlying assumptions and behaviours around how calving should be done, machinery needed, feeding systems and content, etc. guided him through the process of reflexively analysing how his operation should be designed to reflect the type of lifestyle he wanted, welfare standards he wanted to adhere to, how he wanted to care for his land and provide feed for his cows, amongst other considerations. Thus, his sociocultural context and frame of reference provided a basis of knowledge and experience, but the new information provided the opportunity to exercise dialectical thinking with regard to paradoxes he faced (e.g., wanting to make more money but also maintain a certain standard of welfare and production) and undergo expansive learning within his zone of proximal development, i.e., expand his cognitive structures (Engeström, 1987; Vygotsky, 1978; Illeris, 2002).

Another FDG member and his partner who I spoke with from Dairy A told me about their journey of setting up a second dairy unit and the invaluable contribution other people's critiques had made to the decision-making process. *"I'd taken probably 20 people around the new farm, and then a friend walked in and I explained what we're doing, and he was like, 'why are you doing it like that?' He ripped it apart. And I stopped and thought, 'yeah, why the bloody hell didn't I think of that?' Because you can't see the wood for the trees...and again, it's a respected person you're listening to. So we've probably changed our directional plans three or four times; the core idea stays the same – number of cows, system, parlour...well, even the parlour we've changed based on what people have said, but all that helps you make decisions"* (A1 Interview, 12 Mar 2019). He and his partner emphasised flexibility in decisions and approaches, as well as surrounding oneself with likeminded people who encourage one to continually assess, challenge, change and strive for growth. *"One of my favourite sayings is 'you become the average of the five people you spend the most time with.'"*

This exchange highlighted various ways social interaction with his peers had developed the farmer's dialectical thinking. Building on a foundation of respect that harkens back to the element of role modelling under social learning theory (discussed in Chapter 7), the farmer was interested to hear the critiques

of his peers about his operation and critically assess whether what they were proposing was in fact something he had not properly considered, was unaware of, did not understand, had chosen incorrectly, etc. External and/or objective insights may stimulate dialectical thought within a paradoxical situation, e.g., the uncertainty around beginning a new venture and ambiguity as to how exactly to structure it. The farmer had significant background knowledge and experience upon which to base his decisions, he had the cognitive structures available to design a functional, appropriate farming system and had done so. Interaction with others in his environment though, and the sociocultural contexts they brought to the table in analysing the same problem, led to varying suggestions as to how to solve it. In particular, the incident he recounted about the friend with the significantly divergent opinion caused him to reflexively analyse his decision (*“why the bloody hell didn’t I think of that?”*), examine whether he needed to move outside his frame of reference and existing cognitive strategies, and reconsider his design.

8.3 Self-reflexivity and metacognition

As the above examples demonstrate, the farmers’ interaction with their social environments and discourse with their peers were instrumental in causing them to not only reflect on their experience and knowledge, but reflexively assess their thinking process and the parameters defining it. Self-reflexivity, as a deeper form of reflection involving ‘turning back on oneself’ (Weick, 2002) or ‘centring analysis upon oneself in a situation’ (Bolton, 2001), is understood to foster engagement with one’s tacit knowledge that may have previously been taken for granted and analysis of one’s knowledge claims and practices, or metacognition (Lipp, 2014).

An example of this type of reflexive thinking being applied to one’s own thinking and practices occurred during a Veg Growers meeting about tools (11 Sept 2018). The theme had been chosen to foster sharing between the members about different tools used in their operations that were quite effective and/or helped maximise their efficiency. Thus, everyone brought along their favourite hand tools to show the group and the host farm laid out their bigger tools for perusal and demonstration. One of the defining moments of the meeting was when one of the growers who worked on the host farm led us over to a shed

located at the base of the approximately half-acre of beds. “*This is where I keep all of the tools I use on a frequent basis*”, she said. The significance was not immediately apparent, but then she described her reflection one day whilst weeding; it had been a busy day involving multiple different jobs and tools, which every time she switched had required another trip across the yard to search for the particular one needed for that job. After about five times, she wondered to herself ‘how much time do I waste every day walking back and forth across the farm to the big shed in order to get tools?’ That led her to question whether there was a better, more strategic way in which it could be done, which prompted her to speak with the other staff. They similarly found upon reflection that they were haphazardly searching for different tools on a regular basis; therefore, they collaboratively decided to rearrange their tool storage more strategically.

Whilst the host’s initial stage as she described it may have been more of a reflective process, the reasoning she provided signified a much deeper reflexive assessment. She spoke critically about her blind adherence to the way things were positioned without questioning whether there were larger problems with it. Before, the inefficient and disorganised setup had been wasting time and energy that she and the rest of the staff could have instead dedicated to the myriad tasks to be completed on a daily basis in the garden. She was not simply reflecting on whether or not the practice of tool storage had been done well or she needed to change her technique; rather, she was reflexively evaluating whether her behaviours matched her underlying values and assumptions about working smarter, not harder and maximising efficiency within the business. I listened as many others in the group responded to the insight, expressing how simple and obvious it seemed but they were highly ambiguous about whether their operation’s setup was as efficient as possible. Thus, they vocalised the intention to also evaluate their practices in light of the shared goal of avoiding wasted time (and thereby money) and energy.

This example highlights three important things about self-reflexivity. Firstly, self-reflexivity is not only prompted by social interaction but may arise internally through a critical assessment of one’s own thoughts and practices. As learning processes are inherently social, however, interaction with diverse knowledge and experience may often stimulate reflection as to how something is done or thought about as well as potentially reflexivity about the assumptions and

biases behind one's thoughts, processes and practices. Secondly, whilst reflexivity may be built into one's professional practice and carried out according to a structured framework (see Taylor, 2006; Lipp, 2014), it may also develop organically through an evolutionary process involving expansive learning towards more complex knowledge. Learners may have varying levels of openness and capacity to engage in reflexive assessment of their assumptions and biases, which may change over time through metacognitive development. Thus, thirdly, reflexivity is not a mutually exclusive process but rather enhances reflection (Lipp, 2014). As introduced in Chapter 3, Lipp (2014) argues that over time and as expertise increases, learners will be able to effectively "develop insight and self awareness [sic] based on knowledge generated both technically and practically" and thereby move beyond reflection to engage with emancipatory knowledge, aiming towards empowerment and emancipation as outcomes of reflexivity (Lipp, 2014, p. 23).

The following subsections explore the ways in which self-reflexivity was encountered through the FDG observations as well as interviews where members recounted their processes of learning to develop reflexive capacity and metacognitive skills through social interaction and engaging with divergent viewpoints.

8.3.1 Social interaction and self-reflexivity

As demonstrated through the farmers' scenarios described in subsection 2.3, undergoing examination of oneself and one's choices through self-reflexivity is not simply an internal process. It occurs through interaction with others, whereby one engages in "interpersonal communication processes, in which one uses other people as a kind of sparring partner, and performs...*mirroring* actively and externally as an aid to gaining insights into one's own self-comprehension by observing the reactions of others, and listening to their evaluations" (Illeris, 2002, p. 95). Thus, mirroring contributes to self-reflexivity through active social interaction that allows the learner to observe how others perceive one's understanding, attitude towards and implementation of ideas, processes and practices, which feeds into internal analysis of whether s/he should adopt, adapt or reject it in light of one's self-conception (both current and aspirational) and sociocultural context. This continually developing perception of the self through accommodation (and potentially transformation) of self-experience and self-

relating, i.e., relating oneself to oneself, as well as external feedback from interactions with one's environment is important within the learning process (Illeris, 2002; Piaget, 1972; Mezirow, 1991; Vincent, 2008⁵³). But also, internal choices about "life course, lifestyle and identity" as well as personal qualities, e.g., "independence, self-confidence, sociability, sensibility and flexibility" impact upon reflexivity, influencing one's accommodative and/or transformative processes that integrate both cognitive and emotional factors (Illeris, 2002, p. 95).

The example above with the farmer from Dairy A, who emphasised the need for flexibility in one's approaches and decision making, provides insight into his personal qualities that inform his accommodative processes. He is not rigidly confined to his existing cognitive structures, but rather seeks input and critiques that actively challenge them and push him to consider different options and change. Similarly, the farmer from Dairy C, who emphasised the importance of lifestyle throughout his accommodation of various information, knowledge and experience from the FDGs and assessed them in relation to designing his farm's operational setup, can be understood to have been self-relating, or assessing whether these options fit with 'who I am' or 'how I want to live my life'. Many educational learning theorists emphasise the importance of reflexivity throughout individuals' learning processes as contributing to personal development, but they acknowledge the personal effort demanded to carry out these processes, thereby signifying a large amount of motivation needed by the learners (Mezirow, 1990, 1991; Illeris, 2002; Merriam & Berliema, 2014). Phrased another way, to be a reflexive learner and thereby undergo personal development, one must be motivated to exert effort to carry out these processes. These forms of accommodation do not happen naturally or without effort. Additionally, they "cannot always be immediately comprehended as being forward-looking or positive. Personal development and reflexivity may also involve the development

⁵³ "[O]ne's sense-of-self may be usefully conceptualized as a dialogical structure that makes subjective behavioural choices that are not consistent but based in individual experiences, preferences and the moment's opportunities; our rationality is essentially socially embedded and defined by the situation in which it is articulated. Agents embody a variable and changing flow of orientations over time, as they reconcile future possibilities with pre-existing constraints and the conflicting possibilities that the present offers. They may usefully be conceptualized as variably orientated towards the past (reiterated habitual aspects), the future (imagined alternative possibilities) and/or the present (bringing past habits and future possibilities to bear 'within the contingencies of the moment'; Emirbayer & Mische, 1998: 963)." (Vincent, 2008, p. 879).

of resistance, defensiveness, distortions and blocks that in various ways can be rigid and restrictive for the person in question” (Illeris, 2002, p. 96).

The strategic goal-setting meeting held by Dairy D (27 Mar 2019) demonstrated this interplay between social interaction and self-reflexivity. The exercises led by the facilitator provided the foundation for interactions amongst the group members to address paradoxical situations that required dialectical thought and incited self-reflexivity by the participants. As described in Dooley (2020), we assessed our values and how those informed our short- and long-term goals and strategies for accomplishing them. Just a few seats down from me at the table, there was a mother-daughter pair who operated a very large dairy in Somerset. In going around the room and discussing what people had indicated for their short- and long-term goals, the mother stated she wanted her husband and herself to step back from the business over the course of the next ten years and to let the younger generation gradually take over more control. Her daughter followed with the goal of gaining more certainty about what her role within the business would be moving forward as she had an older brother who was (either assumedly or explicitly) considered the primary successor. Another participant, who worked as a feed representative, chimed in that she was also ‘the girl’ and she felt very resentful that just because she had a brother, the assumption by her parents was that he was going to take over the farm from them. There had been no conversation where both siblings were approached about who was interested in farming; she had not even been asked whether she was interested in playing an active role in the dairy even though it was large and required staff. That was why she had ‘seen the writing on the wall’ and gotten a job off-farm.

The daughter lamented that she too had been born the ‘wrong gender’ in terms of farm succession and hoped that because their dairy was quite large, she would have a place within the business. Her mother thought for a moment and then wondered aloud whether she and her husband had approached the succession process as well as they should have. Having just reflected in the previous exercises on her values that guided how she operated not just her business but her personal life, she could reflexively assess and question whether their assumptions and behaviours around the paradoxical situation of how to structure the transition of their farm to the next generation aligned with her commitment to family, equality, fairness, etc. From a researcher reflexivity point

of view, I found this exchange fascinating to witness; sadly, not from the daughter's perspective of being overlooked in favour of the automatic assumption that the male offspring would take over the farm, which is an extremely common theme in farm succession planning (Shortall, 2006, 2005; Luhrs, 2015). Rather, to hear the mother verbalise her realisation that she could reflexively look at her and her husband's assumptions and behaviours that had been applied to their family's succession process and identify contradictions with her value system. My assumption about that type of challenge would have been that the person would respond defensively or struggle to admit that they may have been wrong. Instead, the mother's personal qualities guiding her self-reflexivity may be assumed to include a capacity for growth and personal development, including a willingness to admit fault and self-critique, as well as an openness to criticism.

8.3.2 Divergent viewpoints

Through the concept of social interaction informing self-reflexivity, we have seen that inputs from other actors provide a source of external insight. As we have begun to see from the examples above, a key factor that arose was whether and how divergent viewpoints, different sociocultural contexts and negative feedback were negotiated within the FDG participants' interactions. Along the lines of social constructivism, whereby learning is carried out through interactions with one's environment shaped by sociocultural structures, P2P learning may confront learners with alternate ideas, processes and practices that challenge their existing cognitive structures and incite self-reflexivity. One of the farmers from Dairy C who I interviewed jointly with his partner described a FDG meeting he attended back in 2004 where the group was led by an expert from an agricultural organisation who was passionate about feeding grass. *"At the time,"* the farmer said, *"I just couldn't be bothered"* (C2 Interview, 5 Feb 2019). Over a drink in the pub before the early evening meeting, he described, *"I told him, 'Well, grass is for cows to lie on' and he just went, 'Oh! You're so wrong!' and gave an impromptu talk on the value of grass. And at the end I was like, 'huh, I eat my earlier point'"*. His partner joked, *"And now, you're the person going around going, right, you, **grass!** [laughter]"*. *"So with that information, I came home and said shit, we're missing a trick here! But what I didn't realise at the time was, the cows I had – Holsteins – they're not interested in eating grass. Whatever you do to them...if you say, 'come on girls, today you're going to eat grass, there's not much*

else'. They'll go, oh alright, and they'll eat it and give lots of milk, and then three months down the line you think, oh they're a bit thin. They just don't...if you were going to drive up our lane...would you drive a Formula 1 car up my lane? No...well, that's what I was trying to do, drive a Formula 1 car around my fields. And they didn't like it, surprise, surprise, and they used to break. Everything went wrong...until I worked that out, it took me until 2010 to work that out, after banging my head against the wall trying to get my cows to eat more grass...and they did, but it wasn't very successful. It's about having the whole scheme...more joined up thinking. So I eventually said to the chap who gave that talk before, 'That was a great talk you gave, but you missed a bit – the fact that you have to have the right cow'.

This example demonstrates the critical role that the alternative viewpoint or challenge to the farmer's existing frame of reference played in causing him to reflexively analyse his farming system and change the fundamental structures framing his decision making. Moving from feeding concentrates to operating a grass-based system was stimulated by the challenging, divergent viewpoint presented by the expert, but as I saw and heard many times over the course of fieldwork, changes made that are simply transposed from one operation to another may not work for that system and need to be adapted (Prager & Posthumus, 2010; Prager & Creaney, 2017). Thus, despite his attitude and behaviour having changed towards grass, specific examination of the assumptions on which his system was based was necessary to most effectively implement that change (e.g., evaluating whether he had the right cow).

Throughout the farmer interviews, one of the common points many emphasised to me was the importance of who was proffering the divergent viewpoint as well. Peer-to-peer learning, such as through FDG interactions, was viewed as significantly more favourable to many participants than paying for consultants to provide advice. A member of Dairy A said, *"I could pay a consultant a fortune to come and tell me what I should be doing, and he's never done it, not got any experience from it and has not got a clue. I think I can learn more from the discussion group...We will quiz each other as to why you're doing this? How much money have you made out of doing it? How much is it costing you? There is nothing better than speaking to someone and being truthful and saying, 'I did this, and it didn't work'. But suggestions a consultant might give, they work all the*

time, 100% of the time, whereas I find talking to someone who's actually done it, it's a lot more useful" (A3 Interview, 10 Apr 2019).

A member of Dairy A described a recent example of a role model in his FDG changing the way he served the cows by getting someone in to do the artificial insemination rather than himself or a staff member doing it. The fellow member encouraged him to do the same, saying *"it's the best thing I've done, it's freed up time, it's brilliant!"* The farmer recounted his hesitation, *"I was so against it, I thought there was no way I could trust someone to do it as well as I would. But then I asked whether it was still going well, and both [the role model] and another friend said yeah. That friend uses the same [veterinary] technician as me and he assured me he was really good [at AI-ing] and said I should go for it, so I finally went for it...and I instantly saw the benefits. Financially, performance-wise, for my life, in the team. Yes, it cost money, but I think we're going to get that back. And it changed part of my life!"* His partner interjected, *"there were several of you doing it on-farm, and it was fitting around everything else. These [AI] people are dedicated to that, coming in at a similar time every day". "Yeah," he said, "and it's the certainty of having someone you trust to do it, who's good, who's impartial because he would tell me if he did it crap...it stems back to something I heard a New Zealand farmer say ten years ago, 'It's important you get your cows in calf because you want her to produce milk next year, and make sure you're producing good quality forage. You do those two things right, you'll have a successful dairy business.' So you've got that in the back of your mind, this is really important to get these guys into calf, it prevents you from doing a bad job and just carrying on...this part of the business is really important. Then, one person tells you about what he's done and it's worked for him, and you think, 'hang on, let's talk to another friend, and he's using it', and it all kind of comes together."*

Thus, as seen in Chapters 6 and 7, the value of the divergent opinion may vary based upon whether the learner perceives the person to have sufficient knowledge and experience to not only motivate them to pay attention, but also motivate learners to expend effort to undergo self-reflexivity in response. Learning from one's peers may therefore be more effective at stimulating dialectical thinking due to learners' receptiveness to having them not just offer divergent viewpoints but challenge decisions, provoke justifications, counterargue, etc. based on their first-hand knowledge and experience. The

preceding example also demonstrated how the divergent viewpoints of role models who the farmer respected caused him to reflexively assess the assumptions framing his resistance to changing his AI practice. He was operating under the assumption that “*no way I could trust someone to do it as well as I would*”, which may have been fed by biases, such as service providers would not be as careful or effective as someone with a vested interest in the outcome. His peer’s insistence and challenge to that assumption as well as positive reinforcement from the peer’s and another friend’s experiences finally provoked him to try the practice change. Upon making the change, there was also reflexive assessment as to how the resulting benefits went far beyond economic to instead complement and enhance his values embedded within how he ran his dairy operation—lifestyle, team satisfaction, herd health, etc.

8.4 Self-reflexivity promoted through critical discourse

The previous section’s introduction of the importance of divergent viewpoints within social interactions to encourage self-reflexivity speaks to a crucial component of whether and how social learning theory was found to be occurring within the FDGs studied. As discussed above, dialectical thought and reasoning involves consideration of various contrasting and possibly conflicting factors and assessment of their various strengths and weaknesses in relation to the topic under analysis (Merriam & Beriema, 2014). Transfer of this into dialogue, where contrasting or divergent viewpoints are discussed amongst a group of people, may be referred to as dialogical reasoning (Wegerif, 2000). Additionally, the dialogical turn with regard to cognition and learning refers to the dynamic construction of meaning through dialogue in such social interactions (Edwards & Potter, 1992; Wells, 1999). Leeuwis and Aarts (2011) highlight the importance of communication between network actors within ‘discursive spaces’ through different discourses, representations and storylines that collide and possibly conflict, requiring negotiation and eventual coherence, complementarity and/or congruence in mind-sets and discourses for meaningful change and innovation to happen. Whilst FDGs might be considered micro networks of independent practitioners, they are more focused on collaborative, peer-to-peer learning than such collective innovation processes that involve diverse sets of actors and institutionalised incentives.

Nevertheless, this idea of “dialectical debate and joint learning” is highly relevant to the communicative exchanges observed within the FDGs. Dialectical debate whereby the participants evaluated the strengths and weaknesses of different practices or ways of thinking about the topic under discussion was a form of interaction amongst most of the groups. But as examined above with regard to reflexivity, dialectical debate may stop short of the critical evaluation of assumptions and biases behind the positions being put forward by the different participants in relation to social and individual values, norms and intentions⁵⁴ (Mezirow, 1990). Thus, the concept was developed to incorporate what Beers et al. (2016) termed antithetic interactions. They discovered through a six-month observation of a case aimed at sustainability transition and analysed for social learning that the antithetic interactions, where proposals were introduced and debated or opposed amongst participants, “most often resulted in learning and impact” (ibid., p. 40). The observed “harmonious” interactions (Leeuwis, 2000) or synthetic positions led to learning outcomes as well through sharing and building upon each other’s knowledge, but the results demonstrated it is important to have constructive conflict and “disagreement for social learning” (Beers et al., 2016, p. 40; Leeuwis, 2000; Cundhill, 2010). Therefore, in the context of this study, the participants’ interactions were analysed as to how critical discourse was undertaken by the participants, signifying when they were critical of or challenging each other’s statements, processes, practices, etc., to collectively promote learning instead of passively listening, only speaking in agreement and/or silently disagreeing.

An exchange amongst Dairy A participants that I witnessed during a meeting (12 Dec 2018) provides an example of critical discourse over divergent viewpoints offered by different participants, which promoted self-reflexivity by the host. The group was discussing staff buy-in when implementing lean management on their farms in terms of not just convincing them certain ways of maximising efficiency should be done but collaboratively creating standard operating procedures for the farm built around a collective understanding of what they are trying to achieve and how. There was quite a bit of joking about ‘staff’

⁵⁴ The use of the term ‘critical’ in this context does not specifically incorporate the elements of critical learning theory into the analysis of these discourses, e.g., raised awareness and critique of power dynamics, inequalities and hegemonic structures influencing learners’ sociocultural contexts, capacity to engage, etc. (Brookfield, 1990; Béres & Fook, 2020).

being family in some cases and whether someone could ‘sack my old man’ if he did not buy-in to the changes. Then, the host commented that in all seriousness, finding loyal employees upon whom one could rely to buy-in to the farm’s goals was very difficult because they may get bored after a few years and leave. As described in Dooley (2020), the facilitator turned to one of his employees who was also participating in the meeting and asked what made her loyal to her employer. She answered, *“I don’t want to stay anywhere I’m not progressing”*. This sparked comments by the group about needing to make sure to have clear pathways for progression within the business and integrate that into the lean management strategy-building process. How to carve out advances in job roles, gradually have employees take on more responsibility and empower them with decision-making authority over some things.

One of the participants then interjected, *“yeah, but progression might not be everyone’s goal. I’ve got a guy who has milked cows for me for over 20 years. He doesn’t want more responsibility. He wants to milk cows. He likes the steadiness of the routine and doing the same job every day. His achievement he’s proud of when we do our annual employee review – he’s on time every day. He values being reliable and punctual”*. I looked around and saw heads nodding and heard some murmurs of agreement, including the host. Another participant chimed in, *“Yeah, not everyone can be a manager”*. The facilitator acknowledged this introduction of divergent viewpoints into the discussion and asked for thoughts in relation to the earlier points about other staff who do want to progress. A few participants spoke about the difficulty of managing people with different personalities and working styles—what works for one person might not work for another. Eventually, the host commented, *“I guess what’s key is understanding what staff want”*. The divergent comment had thereby flipped the trajectory of that discussion from everyone agreeing about needing to ‘think progression’ for all staff to introducing a counterargument which pointed to the need for everyone to exercise more dialectical thought around their assumptions and potentially behaviours in managing staff.

Harkening back to the host’s vocalised bias that loyal staff are difficult to come by, the critical discourse had prompted him to reflexively assess his statement in light of his management approach. In speaking with him and his partner about their operation a few months later, the farming couple were

committed to a holistic view of every person working on the farm. *“I mean my job now, we have five staff, is being a counsellor. I learn more about psychology now every day than I do about farming. They’re all different. I treat every member of staff differently by the way they work and the way their mind works. And I think farmers need to be more aware of that when they’re managing teams...I am nothing without my staff. Nothing. I can’t do it. Farmers moan about, ‘oh we can’t get the staff, can’t get the staff’. Bollocks, you can get the staff, you just gotta be nice to them. Like, you ask them how they are in the morning, and how their evening was – I’m not really bothered, but you have to ask to show interest. And some farmers would just grunt at their staff, wouldn’t they? You gotta get on with them and know what they want out of life...out of the job and the trajectory of their role within the business. They’ve gotta know what I want too...and you’ve gotta say thank you at the end of every day. Which I always make sure I do, regardless if they pissed me off or not because it doesn’t cost nothing...and farmers are very very bad at getting that side of the business”* (A1 interview, 12 Mar 2019). Thus, his people management approach within his business was actually nuanced towards each staff member based on their goals as well as the business’, so the earlier instance where he was lamenting employees leaving due to poor loyalty did not necessarily fit with his expressed guiding principles (Nettle et al., 2006). His reflexive statement *“I guess what’s key is understanding what staff want”*, rather, aligned with his attitudes and beliefs about the importance of managing for synergistic relationship outcomes rather than simply for retention.

I witnessed a different sort of interaction during a Beef & Sheep A meeting (21 Feb 2019) where the FDG participants were touring a large vegetable production and processing facility that was family-owned and operated. The organisational coordinator of the group had arranged the farm / factory tour to showcase to that group of producers from a different part of the farming industry that family farms could grow into hugely successful businesses through modernisation and investment. As we made our way through the initial sorting part of the facility, the host described the business’ contracts with various large retailers. The farm / brand supplied 80% of one of the retailer’s stock of broad beans and a high proportion of swedes as well, but they also exported a proportion of their produce to France. A smattering of questions about machinery, employees and growth timelines were asked. Then, one of the participants asked

whether he was concerned about potential impacts from the impending Brexit, which he sneeringly dismissed with a shake of his head and the quip, “*people still need to eat, so there will still be demand for our products*”. Another participant chimed in, expressing the view that all the talk about changing trade conditions was scaremongering, to which about half the women indicated agreement. The participant who had asked the question initially did not challenge his response and the tour of the facility moved on.

Before presenting my evaluation of the exchange, I must reveal my own reaction and reflexively assess it. Standing at the back of the group, I tried to keep my face neutral (a skill which my family can attest I have never been very good at) and not show my incredulity and frustration at what I perceived to be a very ill-informed line of argumentation. As an agricultural lawyer who has studied and worked on international trade rules for many years, the proposition that Brexit absolutely would not affect his business was nonsensical. My assumption was that he either did not understand how tariffs, quotas and regulatory barriers function, or he was politically entrenched in a pro-Brexit position and therefore refused to acknowledge any risk it presented. In addition, I have also lived and worked in the European Union for a number of years and feel quite strongly opposed to the UK’s withdrawal from it. This stems from my assumption that ‘it is better to be in the club’ than on the outskirts with no direct influence over the process of creating the rules to which agricultural products will likely have to adhere anyway for trade purposes. But also, I have many friends all over Europe, so I must acknowledge my bias against those who want to leave. It stems from my personal beliefs in cooperation, cultural exchange, acceptance and openness, but I also doubt the logic and reasoning of those who bought into the propaganda. Those factors were therefore framing my interpretation of and reaction to that collaborative exchange in the moment and later reflexive assessment.

It is possible but unlikely that every producer in the group felt satisfied by the host’s response; as beef and sheep producers in a ‘less favoured area’, they were highly dependent upon the existing subsidy support structure of the CAP (Lobley et al., 2019). Additionally, their products, particularly sheep, were dependent upon exporting to the European Union. The trade projections at the time about the catastrophic consequences of a possible ‘No Deal Brexit’ (which

thankfully is not a concern anymore as Parliament approved the deal on 30 Dec 2020⁵⁵) were therefore directly applicable to their businesses. For those in the group with a divergent viewpoint (e.g., that Brexit did pose serious risks to their businesses due to the potential introduction of tariffs and/or the regulatory delays that could happen at the borders), the host's modelled behaviour of focusing on consumer demand as opposed to system constraints such as trade rules may have caused them to reflexively assess their views, but if so, none of them indicated it. Or their perception of the host may have been affected, potentially improved, e.g., viewing his lack of trepidation as a sign of strength, or diminished, e.g., questioning his modelling capacity due to ignorance of potential threats to his business. As he was the host and external to the group, one of the reasons that potentially nobody pushed back against his opinion was politeness and not wanting to cause offence as visitors on his farm. However, multiple group members from the other FDGs spoke to me about instances and I witnessed them visiting farms external to their group and still asking tough questions. Thus, the structures of that collaborative process at the Beef & Sheep A meeting may be interpreted to have suppressed the participants' willingness, capacity and/or expectation to engage in critical discourse by either failing to encourage or actively discouraging dialogical reasoning and effort towards shared meaning about such risks.

In contrast, a group interaction I witnessed during a Dairy B meeting (25 Apr 2019) was specifically structured to encourage the participants to exercise critical discourse with the host. During the farm walk, the host had pointed out the neighbouring fields that he had been approached about renting, which would almost double his grazing platform. As such opportunities rarely arise, his frame of reference was telling him to 'jump at the chance' due to his sociocultural assumption that farmers should not pass up the chance to expand if land became available next door. However, he was struggling with the choice. Earlier that year, he had faced a serious health scare that had made him stop and evaluate his work-life balance. Thus, he expressed to his peers that it had made him realise he needed to learn to step back a little from the everyday grind of the business and structure his system to make that happen (i.e., get the right staff in place).

⁵⁵ UK Parliament, 30 Dec 2020, *European Union (Future Relationship) Bill*. House of Commons, Bill 236. Available at <https://publications.parliament.uk/pa/bills/cbill/58-01/0236/20236.pdf>.

But then the possibility to expand arose. Sat with the 15 or so participants in his kitchen, I listened and watched them take in his overview about the personal struggle he was facing, many nodding along with his sentiments about feeling he needed to step back and spend more time with his partner (e.g., take day trips, to which she rolled her eyes in jest as she loved milking and was a self-admitted ‘workaholic’). Then, the critical discourse commenced.

One of the members inquired about his succession plan—was he looking to expand because the plan was to bring on one or both of their kids? “No”, the host strongly disaffirmed, describing how he and his partner had saved for their kids’ education but were adamant that if they wanted to get into farming, the kids would need to build up equity and either forge their own paths or buy into his business as opposed to being taken on as a familial successor. This was informed by the host’s sociocultural context and lived experience, having undergone a nasty succession fight over his family farm and come away with nothing, requiring him and his partner to seek a council farm tenancy and build it up with no help. His peer reasoned then that there was less need for him to expand because they did not need the business to provide for another person/family’s cost of living; it would just be increasing the size of his business, which was already highly profitable. The host conceded the point. Another one of his peers challenged him about the contradiction between his assertion that he wanted to work less but the fact that if he expanded, that would mean a larger herd and more work. The host responded, “*yeah, but I love what I do*” and then expressed the commonly held fear that if he did not have farming to keep him active and engaged, “*what would I do with myself?*” (See, e.g., Conway et al., 2016). He referenced a friend from the local police force, with whom he had volunteered, who had retired and shortly thereafter, passed away. He worried that if he lost his sense of purpose, the same might happen to him. His peer passionately counterargued, “*We all need to live each day as if it was our last...you don’t want any wishes that you had done more than work on your deathbed. No regrets!*” That comment appeared to resonate strongly with not just the host but others in the room, who I knew from personal conversations with the members had experienced extremely tragic, untimely deaths in their families. That critical questioning about his decision-making factors demonstrated a dialogical approach that was fostered by the structures of the group’s

collaborative norms. The participants were actively encouraged to challenge each other to construct shared meaning / problem-based solutions (learning how to step back and build a better work-life balance). This speaks to an assumption underlying the concept of andragogy—adult learning is not only aided by “life experiences which can be drawn on in a learning situation, but which also stimulate the need for learning” (Merriam & Beriemma, 2014, p. 49). Importantly though, this example demonstrates how their interactions integrated critical discourse about whether the host’s decision making was aligning with his values, e.g., spending quality time with family and looking after his wellbeing, thereby fostering self-reflexivity as opposed to simply considering the strongest option for solving his problem.

8.5 Conclusion

Thus, as can be seen from the examples above, a key distinction between the FDGs emerged over the course of the observations. Some specifically aimed to promote interactions where the actors were encouraged to exercise not just critical and dialectical thinking skills through dialogical reasoning with each other, but critical discourse about value conflicts, contradictions with sociocultural norms or changes, assumptions on which their decisions were based, etc., resulting in self-reflexive assessment. Other groups’ structures framing their collaborative interactions either did not promote or constrained this type of discourse, which led to a dearth of evidence that the participants’ interactions through the FDG promoted self-reflexivity and thereby social learning. As self-reflexivity is inherently an internal, metacognitive process undertaken by a learner, it must be acknowledged that simply because evidence of deeper reflection on their thoughts, statements, assumptions, processes, practices, and the like were not observed did not necessarily mean it was absent. Nevertheless, as FDGs are aimed at stimulating collaborative P2P learning through discourse amongst the participants, those lacking in critical discourse, which was found to promote reflexive assessment by participants through challenge, provocation, counterargument, etc., suggests that those social interactions were less likely to result in self-reflexivity. As alluded to above and explored in more detail in the following chapter, the various groups’ structures and norms for interaction were critically influential in stimulating (or not) critical discourse, which suggests that

existing norms may be modified accordingly to promote social learning amongst
FDG participants.

CHAPTER 9 – PROMOTING SOCIAL LEARNING

“Bad Influence”⁵⁶

The frustration amongst the beef and sheep producers was palpable as they lamented the dismal prices paid by supermarkets for their products and therefore the tiny margins with which they had to operate their businesses. The group stood in a loose circle in the middle of a huge warehouse filled with machines and conveyor lines used to clean and package the large volume of vegetables produced by the host’s family business. Despite commanding a very high percentage of total production share for two types of veg with a couple of UK supermarket chains, the host also derided the unequal bargaining power primary producers have in being able to negotiate a fair price for their products. I listened with interest to this exchange between drastically diverse farm business owners, not just in terms of system type and product but also size, scale and profitability. Contrary to my assumption, the participants had found a point with which they strongly identified with the host rather than seeing themselves as facing completely different challenges, e.g., disparate versus concentrated bargaining power within the supply chain, and thereby struggling to apply lessons learnt from the farm visit.

A few participants contributed questions and comments as to how the situation could potentially be improved for the producer end of the supply chain, e.g., increase consumer awareness of the costs of production in comparison to the proportion of the final purchase price received by the producer. Suddenly, an older woman in the group brusquely interjected, “Y’know what we need – a war! That’d drive up prices.” An uncomfortable moment of silence followed. Nobody seemed to want to agree. I looked around at the other participants, noting some confused looks and shifting in place, but also nobody disagreed; instead, to gloss over the awkwardness, someone quickly changed the subject. I stood there aghast, unsure I had heard what I thought I had just heard. Had someone actually suggested that the initiation of a violent armed conflict was a good idea based on the proposition that it would drive up food prices and therefore their businesses would benefit? I struggled to hide my outrage at the shocking insensitivity of such a suggestion, presumably founded on the assumption that a war would cause supply chain disruptions and food shortages that could be capitalised on.

I had come across the concept of ‘dark’ bonding social capital through the course of my literature review in preparing for fieldwork and concurrently exploring themes that could help explain the examples cropping up during the course of my observations. Basically, it refers to situations where negative outcomes result from interactions within networks of similar people due to strong social pressure to conform, avoid certain topics, ‘keep the peace’, etc. Thus, outside-the-box thinking or creative solutions may be constrained, or, as in this instance, faulty reasoning or potentially harmful biases and assumptions may go unchallenged. I ruminated on the concept in relation to what I had just witnessed; sadly, if ever there was to be an example of bonding social capital taking a dark turn, this one was definitely dark. The only person who would suggest that a war would be a good idea...was someone who had never lived through a war.

⁵⁶ Cray, R., & Vannice, M. (1983). *Bad Influence* [Recorded by The Robert Cray Band]. On *Bad Influence* [Album]. Oakland, CA: HighTone Records.

9.1 Introduction

As described in Chapter 8, evidence of interactions demonstrating self-reflexivity by the participants was not found for some of the groups, whilst others regularly made statements, asked questions, carried out analyses, debated alternatives, challenged underlying reasoning, etc. that pointed to not just advanced cognition but metacognitive processing. Self-reflexivity was therefore found to be the determining factor as to whether social learning was occurring within the FDGs. Since social interactions incorporating critical discourse were found to promote self-reflexivity, this chapter endeavours to unpack the underlying structures and characteristics of collaborative P2P learning processes that may be necessary and/or emphasised to foster this style of engagement.

Empirical examples presented in the first half of the chapter demonstrate how collaborative norms amongst the groups influenced participants' agency within the learning process. Trust amongst actors, found to be important within collaborative processes (Prager & Creaney, 2017), is also affirmed by empirical data from this study as foundational to critical discourse. Nevertheless, insights into group dynamics and variabilities in trust relations were uncovered amongst FDG members which add nuance to this factor. Finally, shifting and expanding communication norms and consequent (meta)cognitive development over time contributed to the evolution of the groups into social learning spaces and the participants into reflexive learners. This speaks to variations in capabilities and sociocultural contexts, but it also signifies the potential for development and change—group learning processes should be regarded as dynamic rather than static. The second half of the chapter thus explores the role of the facilitator in capacity building and engaging various skills to foster critical discourse and guide the FDGs towards individual metacognitive development and social learning. Tensions are also highlighted in terms of sensitively managing critical discourse processes to account for varying sociocultural contexts and complications with integrating new members into groups' shared communication norms. Examples demonstrating how power dynamics within the FDGs negatively impacted collaboration and critical discourse illustrate the vital importance of creating 'safe spaces' to foster social learning processes (King et al., 2001).

9.2 Structures for critical discourse

Critical discourse, as discussed in Chapter 8, builds on dialectical thinking that relies on the exercise of various advanced cognitive skills. For instance, intersubjectivity, or individuals' ability to understand the perspective of another, is a cognitive skill underpinning collaborative learning interactions (Habermas, 1991; Ding & Flynn, 2000). It is a "shared understanding based on a common focus of attention and some shared presuppositions that form the ground for communication" (Rogoff, 1990, p. 71). This was witnessed in the example in Chapter 8 where the Dairy B participants demonstrated intersubjectivity through acknowledging and speaking from the host's perspective about affective factors, e.g., his love for farming and fear about losing his purpose, surrounding his decision whether to expand his grazing platform or step back from the business due to health concerns (see Conway et al., 2016). That ability provided his peers with a richer context on which to base their critical discourse rather than challenging the reasons behind his uncertainties solely from their own perspectives. They could instead provide external insight informed by his frame of reference, goals and values.

Divergent viewpoints, also a key element of this style of interaction, often stemmed from presentation of perspectives based on different sociocultural contexts and/or negative experience and feedback. Communication is thus another key cognitive skill underpinning not just critical discourse but collaborative learning in general. Talking and sharing knowledge, experience, needs and building upon one's understanding through listening is necessary to construct shared meaning amongst the communicants, but also "to solve emerging problems, to generate and modify solutions and to evaluate outcomes through dialogue and action" (Murphy, 2000, p. 139). With regard to peer-to-peer discussion, however, the status of the participants may impact upon their engagement in productive dialogue, e.g., unequal status in terms of actual or perceived knowledge and experience on a topic may inhibit certain participants from speaking or disinhibit others to dominate the conversation (Tolmie et al., 2000). Thus, learners' attention to divergent viewpoints may vary based on the perception of the presenters' knowledge and experience but also their communication style, such as through challenging others' statements, provoking justifications, counterarguing, etc. As will also be explored in the discussion below

around the role of the facilitator, studies have shown that having someone viewed as an expert within the collaborative context may reduce communication and P2P learning (Sewell et al., 2017).

Importantly, these types of deeply challenging, critical interactions do not occur without effort or motivation by the learner (Beers et al., 2016). Disengagement from 'hard conversations' or avoiding situations where one is continuously provoked for justification and critiqued for mistakes would not be unexpected for various reasons, e.g., interactions would be easier, less confrontational, less uncomfortable, one does not have to admit fault, blame, or flawed assumptions or biases (Merriam & Bierema, 2014). If certain structures are present to frame the collaborative learning interaction, however, they may create the space for participants to comfortably, confidently and effectively interact in this manner, thereby promoting self-reflexivity. Thus, groups' 'ecologies', or established norms, expectations, resources, etc., are highly influential as to the way in which they interact or carry out their critical discourses (Crook, 2000).

9.2.1 Agency

As outlined in Chapter 3, agency is a theoretical concept integral to how people learn as a social endeavour. Along the lines of Habermas' (1991) theory of communicative action as ultimately leading to the search for agreement between actors, Crook (2000) highlighted Schwartz's (1999) application of agency within the learning process, specifically that collaborative learning processes and the individuals that constitute them are motivated. Development of understanding around collaborative interactions moved beyond an emphasis on the cognitive skills explored above to consider how affective factors and agents' motivation may affect the quality of the collaboration (Crook, 2000). Thus, according to Schwartz (1999, p. 198), individual 'effort after shared meaning' is critical for joint problem solving, but Crook (2000) maintains that such effort is impacted by how collaboration is structured, experienced and felt. He speaks of 'ecologies' of collaborative processes, or their social, cultural and material conditions causing variability in the participating individuals' outcomes (ibid.).

One of the Dairy C members interviewed described a scenario he experienced in another FDG to which he belonged (C2 Interview, 5 Feb 2019). *"In '98, they had a farm walk in the summer and it was on this chap's*

farm...pissing down with rain. [My partner] came along with me, and we rode 'round his farm on his tractor and trailer, absolutely drowned come the end...and by the end of the meeting, nobody had asked him a single difficult question!" His partner interjected to clarify, "not rudely, just pertinent questions". "Yeah, yeah...because he had these heifers there, they were bigger than my cows and hadn't even been served! I wanted to say something, but it was only the second meeting I'd ever been to, so I thought, well obviously it's not how it's done in this group. We did come out thinking, well this is an odd discussion group". "Well yeah, there were no other women there for a start, so I never went to another one again", laughed his partner, "and that group hasn't gotten better at asking questions because if there's ever a farm walk with that group and he's [pointing to her partner] there, they all just...". "I ask 98% of the questions", he sighed.

This example speaks to the nature of the collaborative process for that group in terms of the agency promoted (or inhibited) by its structures. To assume 'agreement' had been reached following that meeting of pleasantries would be a mistake. There was no demonstrable effort after shared meaning; rather, the host modelled his knowledge and experience and the attendees retained what was understood, agreed with and/or relevant through assimilation or possibly accommodation (Illeris, 2002). Approaching the situation from a dialogical perspective, the lack of challenging questions amongst the participants failed to engage participants in dialogue that would have examined the strengths and weaknesses not just of the host's behaviours and statements but others' thoughts, suggestions, critiques, etc. through their contributions. It also demonstrated low motivation by the participants to engage in a collaborative process that would demand effort to construct shared meanings regarding debatable topics, e.g., quantity and type of supplements, heifer growth rates, initial fertility cycles, etc. Most significantly though, it highlighted that the group's ecology or norms for interaction did not promote critical discourse or strive to encourage self-reflexivity by the participants. The farmer's comment about "*well obviously it's not how it's done in this group*" is emblematic of the process by which new members become integrated into groups' existing ecologies and learn about what is expected and/or discouraged in their social learning processes. He watched and listened for 'hard questions' by others in the group because that was his sociocultural contextual understanding as to how FDGs were supposed to

operate, but when those did not happen, the group's ecology impacted his behaviour during the meeting. He affectively interpreted the tone of the discussion, that pleasantries were what the group were comfortable engaging with and striving for rather than challenges. Thus, it inhibited the farmer's agency to challenge the host or provoke justifications for decisions about which he held strongly divergent opinions.

Indeed, the ecologies, or their established norms of communication, that I observed between the various FDGs were specific to each group in the way they interacted. A distinctive example of the farmer-led Veg Grower group's ecology arose at their meeting on fostering strong chef / grower relationships for direct sourcing into restaurants and achieving value-added prices (13 Nov 2018). I sat with the approximately 25 participants around a table in a converted farm building where an industrial kitchen had been installed for a restaurant. The chef who ran the restaurant was at the head of the table alongside the lead grower for the farm's market garden that supplied the restaurant's vegetables. We listened as they bantered about the need for good communication between growers and chefs regarding different varieties and their potential uses, harvesting expectations in terms of timing and batch quantities, minimum order bulk quantities, etc. There were numerous questions initially to the hosts that resulted in critical discourse between the participants, but one in particular explored how to handle conflict over chefs needing veg to look a certain way for 'first use'.

First use is where the veg is not cooked into a dish but displayed as part of the presentation or as a raw component, e.g., garnish or salad leaves, that would be visible to the customer. Obviously, the veg used for those purposes would need to be of top quality to appeal to the customers' eyes as well as taste buds. The chefs to whom the growers sold, therefore, demanded no blemishes on that veg, additionally since it commanded a higher price than veg to be used for cooking. A handful of growers were lamenting how that could be quite tricky due to pests, but a divergent viewpoint was offered by a grower who emphasised relationship building as the key to overcoming that challenge. Her chefs were not bothered by small holes in her mustard leaves from flea beetle, to which many expressed shock, adamantly stating they would never sell leaves with even tiny holes in them because they were 'conscious of how it looks on the plate'. The grower countered that the products their group sold were delicious and lasted so

much longer than the “*limp baby mix of pointlessness*” they would get from supermarkets, so that quality was valued regardless of whether it looked perfect.

The participants continued to share ideas and approaches back and forth until one grower enthusiastically suggested that they could all circulate their price lists, which of course would mean that they could see what each other were charging for their products. An almost palpable tension immediately sprang up in the room. A few people hesitantly acquiesced, but most kept quiet and shifted uncomfortably in their seats. Another question was asked, and the discussion moved on. It was maybe a 20-second moment within the span of the meeting, but it was incredibly poignant in defining the group’s ecology. I remembered that grower from previous meetings asking a lot of questions, so perhaps he was relatively new and unaware of the group’s established norms of interaction. Or perhaps he was confused by the limits of what members were willing or expected others to reveal. The group had organically formed to share knowledge and help each other in their business endeavours, but as much as the group espoused egalitarian, cooperative principles in their dealings with each other and as to how they ran their businesses, they were ultimately still businesses in need of clientele. The request for information beyond what they were comfortable sharing introduced a paradox—do we share our prices and therefore sacrifice competitive advantage, or do we set a boundary in terms of off-limits information within the larger group context⁵⁷ and contradict our ethos? Thus, this observation demonstrated that the group’s structures and norms framing their interactions promoted participants’ agency to engage in critical discourse, but it was constrained in relation to certain topics perceived as ultimately too sensitive.

Overall, the private dairy benchmarking groups (Dairy A, B and C) were comfortable, confident and effective at critical discourse, including about their figures. They challenged fellow members for explanations, provoked justifications as to why they chose to do something one way versus another, debated alternatives and critically examined potential outcomes. I remember the first time I saw this type of exchange at the Dairy B benchmarking meeting (31 Jan 2019), I felt distinctly anxious and self-conscious about not only being present but

⁵⁷ Interviews with members of the Veg Growers group revealed that smaller sets of growers, e.g., with friendships beyond the confines of the group, shared more in-depth information with each other, such as figures.

actively taking notes during the private group's discussion when there was such intense disagreement between the members. The topic of labour efficiency was introduced into the discussion and the group began brainstorming ways to improve. Poor training and delegation were identified as a few of the reasons that might be contributing to inefficiency, to which different members offered the ideas of creating job lists on a communal whiteboard, creating WhatsApp groups so that everyone working on the farm could communicate by phone, etc. One of the members interjected, "*No, what you need to do is monitor the job length and if he [the employee] is taking 2x as long, then he shouldn't be doing it. It's about the right person doing the right job*". A few others pushed back, asking what about training that person to be able to do the job more proficiently and therefore hopefully faster? The contrary member dismissively stated that there was no cost-benefit to training labour. One of the younger members adamantly disagreed with that comment, arguing that they should be investing in the longevity of their employees and challenged his peer as to whether he would tell his employee why he would not be doing that job anymore. "*No,*" he responded glibly, to which another peer retorted, "*If I did that to my guy, he would walk out on me*".

This interaction highlights the significant attitudinal differences that existed between group members about topics covered in their discussions. The critical discourse between the participants involved challenges between the members as to not just how they practiced labour management on their farms but also how they conceptualised employees within the scope of their operations. The divergent viewpoint that employees who could not do the job to a certain level or speed should just be moved rather than trained was revealed to be based on his (not so hidden) bias that employees were not worth investing in from a training standpoint. This may have been informed by the assumption that the cost of training would be lost when the employee left, which his peer challenged from the opposite value standpoint that employees' training should be invested in *so that they will stay*. There was no evidence from this interaction directly that the contrary member underwent self-reflexivity about his assumptions and biases around labour investment in light of the challenges by his peers, but being faced with a divergent viewpoint about how labour should be valued may have caused thinking about his thinking. In effect, by treating employees as expendable, they may have been inclined to do exactly the same to his job and farm. Ultimately

though, this interaction demonstrated this group's ecology and how it promoted the actors' agency to engage in critical discourse with one another. The tone of voice being used by each of the participants seemed quite harsh upon first observing it, but as I came to understand through watching more strong challenges, justifications and arguments within their meetings, it was perfectly natural according to their norms of interaction. They constructed shared understanding and meaning through blunt, unbending negotiation of divergent viewpoints based on sometimes wildly diverse assumptions and biases.

The FDGs studied which were organisation-led (Beef & Sheep A and B and Dairy D) typically involved significantly less experience-based or context-specific comparison and critique amongst the participants, focussing more instead on questions to the expert about content that was presented or the host farmer about their operation. This is not to say that certain members did not offer their own experience in relation to the information presented, but on the whole, there was often little discussion and almost no critical discourse between the participants. Their ecologies inhibited the members' agency to dig beyond face value representations in an attempt to uncover assumptions or biases behind each other's decision making or practices. Their established norms of interaction involved showing engagement through asking clarifying questions and offering examples based on knowledge and experience if individuals wanted to, but critical challenging or constructive criticism did not feature in the group's ecology. Similar to all the other groups, the affective nature of their interactions exuded congeniality and conviviality. However, there appeared to be an avoidance of 'hard conversations' as potentially detrimental to positive feelings within the group, whereas for the Veg Growers or Dairy A-C groups above, they contributed to the feelings of intimacy and support between the members.

9.2.2 Trust

This emphasis on the relationships between participants in P2P learning situations thus highlights one of the most important structures for fostering critical discourse: trust. Trust has been found to be a critical element by many studies exploring how farmers learn from each other (Pannell et al., 2006; Sligo & Massey, 2007; Prager & Creaney, 2017; King et al., 2019). More generally, trust is considered to be foundational to what Falk and Kilpatrick (2000, p. 103) term 'communities-of-common-purpose' building social capital and learning, operating

as a necessary prerequisite to as well as an outcome of social interaction and knowledge exchange (see also Mostert et al., 2007; Muro & Jeffrey, 2008; Riley et al., 2018). The sociological understanding⁵⁸ of trust is multi-dimensional: cognitive (rational assessment of evidence of 'trustworthiness'), affective (emotional attitude or feeling about the object of trust) and behavioural (actions that imply trust, informed by others' actions and promoting reciprocal action) (Lewis & Weigert, 1985). Trust stems from the need to deal with risk and uncertainty within social relationships as well as acceptance of vulnerability (Newell & Swan, 2000; Luhmann, 1988; Mayer et al., 1995). As Newell and Swan (2000, p. 1293) state, trust is "an attitudinal mechanism that allows individuals to subjectively assess whether or not to expose themselves to situations where the possible damage may outweigh the advantage. This attitude develops where individuals choose to accept vulnerability to others.... There are many sources of vulnerability that may be 'at risk' in collaborative situations, for example reputation, financial resources, self-esteem, conversations."

Trust therefore played a significant role in whether the FDG participants felt comfortable in their P2P learning situations to be vulnerable and engage critically with one another. King et al. (2019) speak to different forms of trust (companion, competence and commitment), which they found were linked to different forms of social capital (bonding, bridging and linking) between social groups or networks⁵⁹. High levels of 'companion trust' (enduring and unconditional) between actors in "homogeneous close-knit groups" with bonding social capital is based on relational history, evolving over time through informal rather than formal interaction (ibid., p. 125; Lewicki et al., 1998; Sutherland & Burton, 2011). Competence trust, on the other hand, "creates and enables bridging social capital" horizontally between similar social groups and organisations due to their perceived competence, allowing for 'swift' trust to be created to enable conditional cooperation due to their short (or no prior) relational

⁵⁸ Former conceptions of trust were based on political science and psychology, predominantly focused on individual personality theory (whereby trust was thought to vary as a trait or construct based on one's past experiences) and behavioural theory (whereby trust was equated with cooperation with others in experiments, e.g., "the prisoner's dilemma" game) (Lewis & Weigert, 1985, p. 975).

⁵⁹ The linking social capital/commitment trust combination is applicable to vertically linking dissimilar social groups (e.g., farmer networks and a network of government actors) and formal arrangements allowing for accountability and assurance expectations will be met (e.g., contracts for government funding).

history (ibid.). The FDGs within themselves almost all exhibited bonding social capital, and through interaction with experts, hosts external to the group and joint meetings with other FDGs, they also exhibited bridging capital. As groups of farm business owners and operators of similar types, systems, socioeconomic statuses, backgrounds, etc., the FDG members also exhibited very high levels of competence trust amongst themselves as well as with 'outsiders' (Crow et al., 2001). But significantly, whilst companion trust was quite high for most of the groups, it varied based on different topics (exposing one's financial information as opposed to sharing about grass growth levels) and it was not unconditional amongst different members.

Within the context of FDGs' benchmarking meetings, where the members have supposedly agreed to share and be open with each other in order to learn, a member of Dairy C spoke about the problem of defensiveness as a barrier to critical discourse (C2 Interview, 5 Feb 2019). *"A lot of people see that sort of thing as competitive, rather than saying, 'Oh, well that person's doing it for 5p a litre and I'm 7p a litre...what am I doing wrong?' I've been to meetings like this where there's somebody sat there and defended everything they've done. And I think, well, this is not the point! He was going on, 'Oh, our costs are high because X, Y and Z' and the chap who was running it turned round and said, 'I'm not interested. That's your business. You're looking at everybody's and you can think, perhaps mine is out of kilter there'. But he was not going to change anything because he had a reason for everything, and that is completely missing the point".*

That point highlights the self-reflexivity through P2P learning that critical discourse is meant to contribute to. The shared goal amongst those who aim to engage in that type of collaborative interaction is to help each other as well as themselves understand, compare, evaluate, change and improve. Critical discourse aimed at prompting self-reflexivity does not always lead to positive reception and willingness to change though, but instead may incite "resistance, defensiveness, distortions and blocks" (Illeris, 2002, p. 96). Those participants in the FDGs who resist engaging critically or respond defensively as in the above example may lack sufficient trust in their fellow FDG members to be vulnerable and risk compromising their reputation by exposing weakness or poor results in their figures. They may feel that the "possible damage may outweigh the advantage" that could be gained from accepting constructive criticism from their

peers (Newell & Swan, 2000, p. 1293). Thus, they thereby fail to reflexively evaluate whether the discourse has shown that their existing cognitive structures need to expand, or their thoughts and actions are not in line with their values, goals, attitudes and/or intentions. And as the farmer above stated about this type of peer-to-peer, critical engagement—that is sadly missing the point.

One of the producers in Dairy A spoke about the different levels of trust amongst those in the group who submitted their financials and participated in the annual benchmarking meeting where they collectively critically analysed each other's profits and losses. *"It was a real leap of faith...I'm telling them how much money I'm making! [laughter] But it seems to work alright because we have a good relationship, and we've been doing it a long time now...but there's got to be a lot of trust. There's maybe six or eight of us who submit financial information, and I think we have a slightly different relationship than the ones who don't. That's a bit more tight-knit and we have perhaps a bit deeper discussion with that?...The others aren't interested in that, or they feel they're not as profitable as they want to be and may feel embarrassed that they're not making money at this job. But I feel that the ones who don't contribute are missing out on a big part of what discussion groups offer"* (A3 Interview, 10 Apr 2019).

Despite this companion level of trust between participants who critically engaged with each other's financial information, he also spoke about the fact that within the group, there were even more nuanced levels of trust based upon the perception as to whether someone slightly fabricated their figures to try to appear better in front of their peers. *"But there's two or three I know are correct, and they know I'm correct with mine, so that is a bit of a benchmark that we look between us. And the others can either be really low or equal to the top performing ones"*. Another farmer interviewed from Dairy C spoke about similar fractures within the group: *"I don't think everyone tells the whole truth, I think for two reasons: 1) because it's slightly a willy wanging contest isn't it [laughter], it's a competition, unfortunately, and 2) because it is quite hard to get those...it takes quite a bit of work to get those figures into that format in the correct way...a couple of days really...so you need to make sure you get value from that"* (C3 Interview, 5 Feb 2019). When I asked whether he had had an experience in the group where he could pick apart who was not being totally truthful, he shouted, *"Definitely! 100%! Let's not name names [laughter], but yeah, definitely. So I take it as, I try to make*

mine as truthful and honest as I can, I never come top...in fact, I'm usually near the bottom". To which his partner said, "But you always say what you put in is what you get out, you're not going to get what you want out of it if you're skewing the figures or not being truthful".

These examples clearly demonstrate that although companion trust and critical discourse in the Dairy A, B and C benchmarking groups had developed over their 20, 17 and 13 years together, respectively, as closed, relatively homogenous groups of autumn and spring block calvers, there was not unconditional trust amongst the members. Particularly with regard to sharing figures, non-trust-implying actions (i.e., manipulating them to look better in front of their peers) demonstrated that many members may have considered those too high risk to be vulnerable and trust that their peers would "behave in a mutually acceptable manner" (Newell & Swan, 2000, p. 1294). In reference to groups exhibiting bonding social capital, previous studies have found they may "form similar views and may become isolated from wider social exchanges" and "sanctions may be imposed on members who fail to conform" (King et al., 2019, p. 125; Lin, 2001; Burt, 2001). This suggests that divergent viewpoints would be unwelcome within such groups as non-conforming to a similar view held by all. However, if their ecologies have evolved so that their norms and expectations include critical discourse around divergent viewpoints, then in fact defensiveness against that form of engagement would be failing to conform. As demonstrated from the members' sentiments about the point of critically engaging with one another about their (truthful) figures, revealing problems or bad results and expecting others to challenge your decisions, their groups' ecologies had evolved to expect that style of interaction, so by acting in a non-trust-implying manner, their fellow members were detracting away from the groups' companion trust.

Longevity of collaboration may be an explanation as to divergent levels of trust between the FDGs. Dairy D had only just formed the year I studied them. Beef & Sheep A and B had been meeting for six years by that point, and the Veg Growers had started three years prior. However, if critical discourse involves risk-taking and acceptance of vulnerability through trust-implying actions (e.g., revealing problems, expecting criticism, avoiding defensiveness), there were differences between the groups' trust levels as well. The Veg Growers exhibited companion trust through engaging critically about each other's operations during

the garden walks and discussion following dinner, so that divergent opinions were welcomed rather than 'sanctioned' for non-conformity, but the way trust factored into their ecology did not include sharing figures. The Dairy D group exhibited 'swift' competence trust, which may provide the foundation for development of companion trust. As similar actors (dairy producers), they immediately engaged openly about calf health issues in their first meeting and shared experiences amongst themselves and with the meeting expert (a veterinarian). As will be explored in more detail below, this was likely in part due to how the facilitator structured the interaction. The Beef & Sheep A and B groups exhibited bonding social capital as there was a strong emphasis on social support amongst the members within the group. Their interactions, however, showed a tendency towards what King et al. (2019) term 'dark' bonding social capital, whereby non-conforming views or disagreement with the host or each other were not only not encouraged, but challenging assumptions and biases may have excluded one from insider status within the group. Thus, even though they exhibited high levels of competence trust, they showed low levels of companion trust as they did not engage with each other in ways that required acceptance of vulnerability, and engaging critically (with the intention of helping each other) would not have been "behav[ing] in a mutually acceptable manner" for their ecology (Newell & Swan, 2000, p. 1294).

Another substantial difference between these two cohorts of FDGs (benchmarking/critical discourse about their figures versus not) that shaped their norms as to what behaviour was 'mutually acceptable' was how private or fixed the group's membership was. One of the risks with sharing information is that the person receiving it could share it with others that the original owner of the information did not consent to, so part of the trust between FDG members is that confidentiality will be maintained. The level of risk and acceptance of vulnerability for those sharing increases as the private nature of the information increases, which, as seen from the above examples, includes financial information. If the distrustful action of sharing group members' confidential information with outsiders was done, it could severely compromise the group's companion trust and reduce people's willingness to expose themselves through critical discourse. Dairy A, B and C were all private, facilitated groups with relatively stable, long-term memberships, whereas Beef & Sheep A and B, Dairy D and the Veg

Growers were all semi-public groups (as described in Chapter 5). The former groups' memberships included between 15-20 farms so that those attending each meeting were almost always the same; the latter groups' membership lists contained well over 100 people who could possibly attend. Thus, the number of people privy to shared information differed drastically between the cohorts, and the higher the number, the higher possibility of diffusion beyond those who directly heard it to the wider membership without the host's knowledge or to outsiders.

I witnessed an example of Dairy A grappling with this issue of trust amongst its members and the confidentiality of shared information (20 Nov 2019). I was sat with all the members and a few of their spouses in the back meeting room of a lovely country pub in rural Somerset. I had just finished feeding back the initial results of my analysis of the data collected through participant observation and interviews and asking for their thoughts and opinions about the emerging themes. There had been a good exchange between myself and the participants about different issues, e.g., social support, critical discourse, gender, etc., and after I had finished, the chairman took the floor and thanked me for joining them, saying I was always welcome to come back and visit. After attending their group's meetings for over a year, I remember beaming and feeling as though I had been accepted as an insider by the members (Merriam et al., 2001). Then, he announced, *"It's come to the attention of a few of us that someone has been talking about different people's figures down at the pub. Let this just be a reminder that we have all agreed to keep each other's information confidential in joining the group and this is something that shouldn't happen again"*. The warm fuzzies from a moment before were gone; I remember feeling extremely uneasy at being privy to this internal conflict amongst the members and ashamed for whomever had broken the trust of their peers. No names had been mentioned, but it seemed clear to me that everyone knew who it was. The chairman moved on to discuss another topic, but I was left wondering how that person would continue within the group. How would he regain his peers' trust that he could be shared with and hold private information confidential?

Thus, if trust is absent from the structural conditions of FDGs' ecologies, it may inhibit the participants from engaging in critical discourse that helps promote self-reflexivity. Nevertheless, simply because participants in a collaborative

interaction trust one another to a certain extent does not mean that critical discourse will necessarily be carried out in a way that effectively promotes self-reflexivity. Groups with similar social capital (bonding as well as bridging) may still vary in terms of companion trust as to how far they are willing to be vulnerable and expose certain types of content to one another, discuss problems and weaknesses and expect criticism from their peers.

9.2.3 Evolution of groups' learning processes

The reciprocal interactive learning process within the groups not only promoted triadic reciprocity for the individuals in terms of their social context influencing their learning, but the learners also actively influenced their social context in many instances to enhance their learning process (Schunk, 2012). Thus, the nature of the learning arising out of critical discourse not only contributed to personal development or "organisation of the self" as explored in Chapter 8, but also development of the group's ecology into a social learning space promoting metacognition and self-reflexivity.

As described in Chapter 6, one of the FDG participants interviewed spoke about the dynamic process of evolution in topics the group wanted to explore (X1 interview, 11 Jan 2019). Over the years as they gained higher levels of competence and confidence with technical matters, they realised what they were lacking were more strategic business management skills, e.g., leadership, staff recruitment and retention, standard operating procedures (SOPs), etc. In contrast, a member of Dairy A described a different FDG he had been a member of (A3 interview, 10 Apr 2019). *"Initially, a New Zealand chap came over and started a NZ grazing discussion group, so I went along to that with a friend of mine up the road. When we started out, we hadn't had as much experience on grazing, that was a fairly new thing...and we would talk about, um, grazing height the cow should be going in, residuals coming out, what date you're turning out, how much grass are you growing. We probably spent 5 years looking at that I suppose and different systems...and then a lot of people thought, well actually, we've done all of this topic now. Um, we've got an understanding, we've seen everyone's farm, we spoke about residuals and grass covers...and then the group sort of fell apart a little bit, and then it gave up. And then I had a phone call from someone else, did I want to join this [current FDG]...this one's different because...um, we can go to the discussion group, and the topic could be a really*

small topic...a tiny fraction of your business, but a very important topic. This one has got a lot more mileage in it I think because it's so diverse, we can do so many different things...um, whereas the one before was just talking about grazing and feeding...and maybe 4 or 5 years of that and you think, well actually, what more can we do?"

As the group was founded to cover one specific topic (technical grazing), it is unsurprising that the remit stayed relatively constant over the course of the five years. However, the lifespan of the group was effectively bookended by the inevitable point where the members felt they had reached sufficient knowledge of and experience with the topics being covered. Since there was either no initiative to or possibly resistance to expanding and changing to explore additional topics, the group folded. Interestingly as well, the interviewee spoke about the group as a collective unit that “gave up”, which corresponds with its capacity for dynamic evolution as well as static dissolution.

A member of Dairy B spoke about their group's evolution to incorporate critical discourse and keep pushing each other (B1 interview, 1 Jul 2019). *“Some people joined and left, it wasn't for them. They don't like sharing or they don't like being told they're not doing a very good job. Yeah...because when we go round, if you see something that's not good, we'll tell each other. If you go to a stranger's, you've got to...you don't really want to be too blunt, whereas now we know each other really well, we can be as rude to each other as we like [laughter]. That sounds awful, we're not really rude...but we can be open and tell them...The first time they come to your farm, you're terrified. You think, oh God, they're going to look at this and this and this and what am I going to say? But it's really constructive and really helpful. I think we all appreciate being challenged, it makes life interesting...and [the facilitator] is really good for pushing people, um, not to get too comfortable. Cuz we've all got to a stage where we're all making money now, but he'll keep changing the goalposts. Sometimes you think oh, we're doing alright, and then he does that and...[defeated noise], but it does motivate you, which is good because a lot of groups we hear of get stale and their members sort of dwindle away. But ours hasn't, which is really good”*. Thus, FDG facilitators can play a significant role in preventing the individual members from becoming static in their own operations as well as in their social learning journey.

9.3 The critical role of facilitation

A consistent theme throughout observation of the FDGs and the interviews was the role of the facilitator or coordinator in relation to group dynamics, organisation, motivation, standards and norms. A producer from Dairy C and his partner commented that the facilitator plays a really important role in relation to the process of developing the group's capacity and structures necessary for engaging in critical discourse (C2 Interview, 5 Feb 2019). "*The person leading the group is really important*", stated his partner, "*and I think they have a lot of bearing then on how the people in that group react to sharing and giving information. And if they make you feel comfortable and part of it...people won't be so 'ooh, I don't know about sharing'*". The following section explores different approaches taken by the facilitators and coordinators to influence the groups' learning processes, with subsequent analyses of incidents where tensions and power dynamics were shown to be problematic.

9.3.1 Approaches and skills

At the beginning of the 21st Century, the agricultural education and extension community was grappling with the shifting understanding as to how networks of actors interacted to learn and create innovations in agricultural innovation systems (AIS, see Chapter 2) and how various contextual factors framed, enabled or inhibited those processes (Koutsouris, 2012; Klerkx & Leeuwis, 2009). In particular, the role of the extension agent has changed from knowledge transferor, purveying advice and technology, to innovation broker, with a connecting function between actors and knowledge systems, and facilitator of individuals' learning journeys and participatory processes (Cristóvão et al., 2009). As Koutsouris (2012, p. 68) explains:

"A major role of the new extension is that of the co-learning facilitator (usually found in literature as 'facilitators' or 'brokers') aiming at the development of shared meaning and language between dialogue partners in order to stimulate change and develop solutions and innovation. The engagement of stakeholders in dialogue, despite its difficulties and its time consuming nature (since (social) learning and change are gradual), is necessary so that critical self-inquiry and collaboration will be achieved".

Thus, the critical role of the facilitator in fostering learning through social interaction and dialogue has long been acknowledged. As discussed in Chapter 8, Leeuwis and Aarts (2011) argue for a reconceptualisation of communication

within spaces for innovation and change. FDGs exemplify what the authors call 'discursive spaces' for "everyday communicative exchanges" among societal agents that involve exchanging meanings, but also "actors (re-)order the world by weaving together (competing) storylines that can be composed of a web of frames, vocabularies and argumentations" (ibid., p. 27). The process of 'manoeuvring' towards shared, or at least complementary, understandings about "reality, problems, goals and boundaries" in order to identify "desirable, feasible and acceptable options for change" is what different scholars have termed 'social learning' (Leeuwis & Aarts, 2011, p., 30; Friedmann, 1984; Leeuwis, 2002; Röling, 2002). This processual communicative understanding complements the cognitive, affective and metacognitive aspects as to how and why social interaction may lead to change in behaviour and reinforces the role of critical discourse within this study's findings. Crucial to networks/groups' communication processes, Leeuwis and Aarts (2011) also emphasise the vital role of innovation brokers / intermediaries or change agents in supporting learning as well as dealing with dynamics of power and conflict, which will be dealt with in the following section.

In exploring what studies have found facilitators actually do to support and promote learning within groups, various recommendations emerge. Millar and Curtis (1997, p. 141) emphasise four factors as contributing to effective facilitation, which is a critical factor in drawing out 'dormant' farmer knowledge in group learning: "Allowing time for dialogue; Creating a non-threatening environment; Acknowledging value of local knowledge; Addressing needs and concerns of [participants]". Campbell (1998) speaks to facilitators' need to be able to link people together, nurturing and fostering relationships to enable sharing of information and assistance. Additionally, they need to be skilled in helping groups stimulate new ideas and perspectives as well as sustaining momentum and synergies (ibid., see also Kroma, 2006). Moschitz et al. (2015, p. 8) call for considerate facilitation to enable reflective processes by "respect[ing] the needs of all actors and basically empower[ing] them to negotiate between each other". Home and Rump (2015) reinforce this by pointing out that facilitated reflection can increase participants' self-esteem and self-confidence, but facilitators may also need to be skilled in ameliorating resistance or reluctance by groups and utilising knowledge brokerage methods to stimulate interaction.

9.3.1.1 Facilitated FDGs

In light of these recommendations, *how* did the facilitators / coordinators of the FDGs foster the structures and ecology within the group to allow for critical discourse? The facilitator for Dairy A had been leading discussion groups for nine years at that point and had also started groups from scratch in the past (F2 interview, 12 Nov 2018). *“I think the penny dropped when I was asked to take on the facilitation of a discussion group...they were what I call a full-on participatory discussion group...I'd never seen one for myself, but then saw [their former facilitator] in action for one meeting and then I took it on. Fell in love with it, it was absolutely brilliant. The group were fantastic. And then from then on when I set up a group it was always on that participatory model.”* When asked whether and how the groups were introduced to the participatory model, the facilitator explained, *“I would point out what my view of a discussion group was at the first meeting: a discussion group is for everybody to be sharing their ideas and not just going to listen to ideas. They must be shared. Everybody has to participate, because if not, it's not fair on everybody else. So it then took time to convert some of the other groups to doing that, some of them did, some of them didn't. Some just weren't ever going to do that because that wasn't what they originally signed up for and didn't see so much value in”*. This fits with the recommendations above, particularly around ameliorating resistance and reluctance, but also respecting actors' needs and nurturing groups' relationships.

In terms of specific actions done and structures put in place to promote not just learning, but critical discourse, the facilitator expounded, *“I then also made quite a structure to what we were doing in so much so that the invitation went out with the challenges and the opportunities for change...so the farmers knew what they were coming to look at before they then went on the farm. Then it was just doing the traditional farm walk...but really stop and highlight those areas that were either going really well or the challenges. So then I wanted an action plan for those two challenges by the end of the meeting. It was always really important to get everybody in a semi-circle so everybody can see everybody so you're not having to turn around to look at people and all the faff. And I would always go around the semi-circle and everybody had to give a solution to the first challenge and then I always went back the other way and everybody had to give a solution to the second challenge. And everybody knew that I would not accept 'oh, the*

same as he said' - it was always, 'if it's the same as he said, you're not thinking exactly that. Can you refine that? How would you refine that idea? And slightly differently?' So they all knew that that was the ground rule before we started and I would write up those ideas into an action plan or suggested action plan and then get the host farmer to then say 'actually, I really like that idea and that bit of that idea and this is what I'm going to do' (F2 interview, 12 Nov 2018). This exemplifies the approach taken by the facilitator to move groups toward more of a participatory, critical style of thinking and engaging, which as pointed out, would look different for each group based on their ecology / norms for interaction. Thus, the facilitator exhibited considerate facilitation in stimulating new ideas, perspectives and communicative processes, but only to the extent the participants were willing to be led.

As Dairy D was a new group, the participants did not have the longevity mentioned above for companion trust, so the facilitator needed to “create a non-threatening environment” (Millar & Curtis, 1997, p. 141) or a “mentally and socially safe space” (King et al., 2001, p. 136) in which, based on their foundation of competence trust (as dairy farmers who had chosen to come together to form a group to learn together), they could foster a willingness to be vulnerable amongst the group for sharing and interaction to stimulate learning. This was particularly important and challenging in the context of the first meeting which involved an expert presentation (28 Nov 2018). A veterinarian was presenting about the various types of diseases and preventative measures that could be taken around calf health. The expert had a very conversational style of presenting that made it easier to follow, but at different points, the facilitator interjected with questions about the information being presented to elicit the participants’ knowledge and experience with different treatment options, feeding strategies, setup on-farm, etc. That helped prevent the presentation from being a one-way information flow to a two-way exchange with the participants about their thoughts, ideas, questions, concerns, etc. (Koutsouris, 2012).

As pointed to in the literature above as knowledge brokering methods, or mechanisms to promote the exchange of practices (Cristóvão et al., 2009), the facilitator also stimulated sharing of knowledge and experience and discussion amongst the participants by leading them through group exercises. One example was after the veterinarian had presented research around age at first calving for

heifers and how many months of lactation it would take before she started 'paying back' what had been spent on rearing costs. To reinforce the investment per animal to that point, the facilitator then asked all of the participants to write down on a post-it how much it cost them in their operations to rear a heifer. Many of the participants expressed uncertainty and hesitation to participate, but the facilitator immediately jumped in to encourage them to 'just take a guess and check it afterwards' in an effort to create a safe space for them to be vulnerable and not know. The participatory method therefore worked in drawing out different viewpoints and fostering discussion. At that point in their social learning journey, it did not and was not intended to involve challenges or constructive criticism toward each other, but nurturing those group relationships and stimulating sharing and interaction set the stage for their ecology to potentially evolve to that.

The facilitator for Dairy B similarly used knowledge brokering methods within the group to draw out divergent viewpoints and foster critical discourse amongst the participants. In particular, at the start of every meeting, the facilitator would go through a flipchart outlining every (attending) farm's key performance indicators (e.g., grass cover for the grazing platform, milk solids and butter fat percentage per litre) either sent ahead of time or written in when the members arrived. That initial bit of the meeting was intended to foster critical discourse about why their figures were different and management solutions that could improve their performance. Similar to the facilitator for Dairy A above, Dairy B's facilitator also consulted with the host farmer before every meeting to determine what issues s/he wanted the group to pay particular attention to and offer constructive criticism and suggestions for change. Those topics were specifically covered then during the farm walk, such as the example in Chapter 8 regarding the host's machinery (quantity and type), and recapped and debated in an intensive facilitated discussion over lunch in the host's kitchen or shed. Action points were arrived at and the facilitator circulated the minutes from the meeting to all of the members shortly after, outlining what challenges had been discussed and what strategies and actions had been recommended. In terms of facilitating a group whose ecology included high levels of companion trust, openness to sharing information and a commitment to challenging each other's decisions for continuous efficiency and profitability, this approach appeared quite effective at not just acknowledging but prioritising the value of the participants' viewpoints

with regard to learning and “empower[ing] them to negotiate between each other” (Moschitz et al., 2015, p. 8).

The facilitator for Dairy C utilised similar knowledge brokering methods to draw out the participants’ knowledge and experience around KPIs at the start of each meeting. The format was different though; rather than a flipchart, the facilitator would collate everyone’s figures sent in into a software template printout that spanned front and back of an A4 page. Then, another individual sheet detailing the host farm’s CFP was included in the handouts for the meeting. The unwritten ground rules for that group’s ecology included the restriction that those who had not submitted their KPI figures for display to the rest of the group could look at the sheet during the meeting, but they were not to take it home with them. This harkens back to Dairy A’s facilitator’s comment above about it not being fair to everyone else if the participant basically takes an extractive approach and mines everyone else’s information but does not share theirs in return. The KPIs certainly fostered lively critical discourse amongst the group as to how and why people were achieving different results. With regard to the host’s challenges though, those were not necessarily set ahead of time but rather were drawn out through questioning by the group about the setup and CFP in the introductory part of the meeting (usually in the host’s kitchen or sitting room) before going out for the farm walk. Additionally, the facilitator did not lead the group in a discussion at the end of the meeting to recap or create an action plan with the host. As will be seen in an example below, that knowledge brokering method may be necessary to translate the potentially overwhelming number of topics, criticisms and suggestions into a digestible, actionable short list that may provide direction for the host as well as reinforce the learning points for the other participants.

9.3.1.2 Farmer-led and coordinated FDGs

Neither the co-coordinators for the Veg Growers nor the coordinator for the Beef & Sheep A and B groups acted in a facilitation role apart from very basic timekeeping and moving the groups’ farm walks and tours along by checking with the host where the next place was that they wanted to show the participants. The Beef & Sheep groups’ coordinator did ask a few questions at each of the host farms to elicit information that would likely not have come out through the participants’ questioning. Additionally, the Beef & Sheep B group was comprised of young producers as described in Chapter 5; thus, in addition to the group not

exhibiting companion trust and therefore lack of open sharing of information and challenging each other, the producers appeared under-confident in questioning the host. Again, because their visits were often on farms which operated drastically different systems to their own, that may have been one of the reasons for finding it harder to formulate questions. Nevertheless, the coordinator did seem to have to ask questions of the host in that group in an effort to keep the information provision flowing unlike in the Beef & Sheep A meetings.

Both the farmer-led Veg Growers and the organisation-led Beef & Sheep groups espoused learning as a fundamental part of their reason for existing, but they also strongly identified support and networking with their peers, or the community aspect, as vital to their groups. If socialising and peer support were such strong reasons as to why the Beef & Sheep groups came together, it is possible they may not have wanted the coordinator to evolve into more of a facilitation role and use more participatory methods to foster critical discourse if that interaction approach was perceived as possibly detrimental to their community's ecology. The Veg Growers group, however, was struggling with its identity as new group and how to balance the learning and socialising components. Whilst learning from each other's setups, knowledge and experience was still key, one grower expressed to me when asked what she gets out of the FDG, *"Um...I think I get that sense of community, that reassurance, that...um, feedback, that sense, you know, we are all doing something important and that we believe in, and that there are other people out there doing it. Um...I think I would like more of the 'I'm actually learning something'. So I think that's what I feel...definitely chatting with [the initial coordinator] from the beginning about it, when it was just sort of about five of us, and I definitely think it was...we had more of a sense of like, 'this is to supplement our practical learning'. We were all in a very, very similar position, never having done anything sort of institutional, and feeling like there were sort of gaping holes. And yeah, I think there has then been this shift for it to be more of a social thing, more of a farm tour kind of thing, which is great...I just feel like what I want out of it is more the sort of practical learning side of stuff"* (V3 interview, 18 Feb 2019).

This sentiment demonstrates the shift that had occurred within the group over the three years since it began. Having been initiated as a book club, the primary focus had been to learn from the shared texts the participants read and

discussed, but as the membership drastically expanded, the format had shifted to a traditional farm walk and discussion. As seen from the descriptions of the Dairy A, B and C groups, simply because a farm walk is involved does not mean that there is necessarily less of a focus or opportunity for reflexive learning to occur. But given that the Veg Growers were farmer-led and did not have a facilitator with the official role of fostering the sharing of information and perspectives, the growers had to do that on their own initiative. There was recognition of the need for someone to keep the momentum going with organising meetings, contacting members to potentially host, sending out emails, timekeeping at the meeting, etc., which is why they had a coordinator(s), but they also wanted to keep the meetings democratic in that nobody was officially 'leading'. As exemplified during one of the meeting's post-farm walk dinner (11 Sept 2018) though, that appeared to present complications for promoting the in-depth learning the grower above wanted (cf. Cristóvão et al., 2009).

As per usual, everyone in the group had brought a dish for the potluck dinner, which was setup in an old barn on the host farm. As we formed a queue, the coordinator announced that we could continue the discussion from the farm walk over the meal. Small clusters of people sat at the two long tables after filling their plates and the friendly conversations quickly created a din in the room. The coordinator and I were two of the last people to get our food and I watched as she attempted to get everyone's attention, but quickly gave up and took a seat at the circular picnic table in the corner where they appeared to be having a serious discussion. I sat at one of the long tables, where the people around me chitchatted about how things were growing, the weather, friends in common, etc. Finished eating, I wandered over to the circular table—they were having a debate about different technical issues they were facing in their gardens. Some others who had been sitting at the long tables also congregated and stood around those seated at the table, listening to the debate and a few contributed thoughts. Thus, critical discourse within that group appeared to be more of a spontaneous occurrence that those who were more keen to learn rather than socialise could partake in.

9.3.2 Tensions

As seen from the above section, the facilitators played a key role in fostering social learning amongst the FDG participants. Nevertheless, there were

also many observed instances where the facilitators' approach could be questioned as to whether it was potentially interfering with the process rather than facilitating it. Additionally, even for those groups without a facilitator, learning and a shared sense of community were certainly objectives and outcomes of their continued collaboration. As Quaghebeur et al. (2004, p. 159) point out, however, whilst participatory group processes may aim to promote an alternative to hegemonic structures of learning and problem-solving, they may in fact promote a hegemony of commonality with respect to problems and participants' needs and expectations "often linked to a romantic ideal or a myth of community". As shown through the examples below, there were instances throughout (and assumedly prior and subsequent to) my observations of the FDGs that raise questions as to the community ideal amongst these groups of similar yet heterogeneous practitioners. This section therefore explores the role / duty of the facilitator in creating safe spaces for learning and interaction that maintain respect for individual diversities whilst fostering a group ecology that includes critical discourse and reflexivity.

9.3.2.1 Facilitator duties within social learning spaces

Cristóvão et al. (2009) examined two different types of collaborative learning mechanisms, Study Circles and Communities of Practice (CoP), and found them to be effective but to varying levels based on the participants' willingness to engage in practice sharing. Particularly in the discussion about the four CoP, they highlight the potentially negative roles informal leaders may play in interfering with practice exchanges: 'protective' / 'paternalistic', 'expert, or 'legitimising'. They describe protective as 'filtering' the group's "exposure to outside visibility", potentially inhibiting sharing by members to avoid criticism if there is any discrepancy between practice and the proclaimed rationale (ibid., p. 199). The expert's "intervention tends to correct practices, causing inhibition to an open discussion among peers", and the last leader "legitimizes [sic] the activity of individual members and, in this case, practice sharing may happen, but without any significant level of reflection" (ibid.). I would argue that this applies to facilitators as well as leaders within the FDGs. Particularly, there were numerous occasions where I witnessed the facilitators occupying an expert role during the groups' discussions, which operates in direct contrast to the principles of facilitation. For instance, often when the Dairy C participants were discussing

feed levels of concentrates, silage, grazing, and the like, the facilitator would intervene in the discussion with authoritative knowledge about percentages, ratios, etc. As a feed consultant, the facilitator was very much an expert in that topic, but the effect of those interventions was then either the participants stopped sharing about feed levels and moved on to a different topic, or they began asking questions of the facilitator rather than each other for the 'right answer'. Thus, facilitators need to maintain the role of fostering exchange of knowledge, experience, challenges and solutions amongst the participants, not inhibiting their open discourse (see also Collins, 2019).

As described above, Dairy A was a longstanding group with significant trust and an ecology that incorporated critical discourse to foster social learning. With regard to the concept of hegemony of commonality though, a member recounted an incident in the FDG when the group's norms for interaction were thrown into question. *"You have to be a bit careful of being too critical. And even a year or so ago, before the CFP meeting, the chairman before everyone arrived told a few of us that we were being too critical. And he said, 'You are pushing it home to these...some of them too hard, and back down because they don't like it'. And then that meeting was rubbish after that because nobody...all the figures came up and people were too afraid to try and drill down on people's figures. Because the chairman had said, 'Look, you're being too hard on all of them', so everyone sat back, and at the end of it we thought, well, that was a bit rubbish. We didn't learn anything!"* (A3 Interview, 10 Apr 2019). This demonstrates the potential for critical discourse to be 'too critical' if the levels of comfort with being challenged varied amongst the members of the community. The members who felt their peers were being too hard on them demonstrated they were open to sharing by having submitted their figures to benchmark against each other, but theirs was a different perspective or reality as to what sharing meant than other members of the group that understood that as only a starting point. 'Drilling down' into the reasons behind the submitted numbers, challenging decisions made and holding each other accountable to achieve the highest level of profitability was their understanding as to what that knowledge brokering method was intended to stimulate. Thus, differing understandings within these communities can lead to tensions and, at worst, breakdown in their interactions.

I witnessed a particularly unfortunate incident where the group's critical discourse went beyond constructive criticism into conflict. The Dairy C group was meeting at the farm of a potential new member who had bravely invited them to come and help his operation after previously attending only one of their meetings (23 Jan 2019). The young host invited everyone to sit around his living room and the facilitator kicked off the discussion about his CFP as his partner served teas and coffees. His expenses were quite high, and he was carrying debt with a large payment due to the bank in a few months' time, so the participants inquired about his outgoings. He sheepishly admitted that his guilty pleasure was buying cows on impulse from the local livestock market as well as machinery, such as the shiny tractor we later saw parked in the yard to haul his mixer wagon. Being a group of low-input grazers, the participants dug for information about his grazing platform, how much he was buying in to feed; they inquired about his breeding policy, target cow size, litres produced, milk solids, etc. He made a comment about needing to 'wean myself off' the kind of cow he liked to milk and breed in more Holsteins because they would produce more milk. The participants immediately disagreed. One said, *"I used to be about high yield but it's gotta be about profitability"*. Another said, *"Don't throw out the baby with the bath water. Work with what you've got...in looking at other targets, we're all aiming for an Irish/Holstein/Friesian cross"*. Another chimed in, *"yeah, I've got a whole range of sizes, but I want to find out what is the most efficient for weight and solids"*. A handful of the older farmers in the group offered encouragement: 'we've all been there with the financial pressure'; 'changes are happening, you know where you're going'; 'you've got a good farm here'. But sombrely, one said, *"As you change your business though, it's important to keep different 'company' to have those difficult conversations. This group won't be about big kit and yield. Don't be afraid of yield drop"*.

With that introductory conversation, we went out into the farmyard to see the cows. *"Why are you feeding / mixing maize? They're fat enough! Why not straw and cake, just put a bale out"*, one of the participants argued upon seeing the size and condition of his heifers. *"They're on concentrate, but it's too expensive and they look well. You could save a lot of money!"* The host pushed back, *"well, they were looking poor out in the field, so we brought them in...our old ground is crap, so they don't do well"*. *"No, old pastures are fine. It's a waste"*

of cake because they'll waste it when you turn out in a few weeks". They checked themselves a bit after that barrage of critiques, reassuring him 'we've all been there', and the host nodded morosely, *"I've got the ability to change, but it still scares me"*. But then they drilled down into the 100-cow slot he had reserved at a livestock market to sell off in-calf cows, which he could use to pay the bank loan due shortly thereafter. The host waffled through an explanation of his uncertainty whether he should because those he had selected were the first ones he had ever crossbred, so he was sentimentally attached to them. I saw a handful of the guys' eyes widen and a few scoffing noises. *"You're not going to balk right? I'm going to challenge you on this because that don't sound like you're committed to an autumn [block] business format"*, said one of the participants. Another commented, *"I also didn't have the right size cows in 2010 for grazing, but now they're bred differently and better. The best thing I ever did for the business was to get less sentimental with the livestock"*. The host lamented, *"Yeah, that's why I wanted you guys to come out"*; he knew his back was against the wall and he needed to make changes. He just did not know where or how to start.

The critical discourse by his peers was well-intentioned and, until that point, constructive, offering suggestion after suggestion as to where he could cut back on expenses and still maintain high standards but create a profitable block. Through dialogical reasoning, they were attempting to point towards the strength of arguments as to how to resolve his debt burden, but they were also pushing him to exercise self-reflexivity about how his decisions fit with his values towards his family (e.g., is it worth it to keep the cows for sentimental reasons and risk losing the farm?) as well as his identity as a farmer (e.g., how do I envision myself as a farmer and how does that relate to the kinds of decisions I need/want to be making?). This could be seen in the contradiction between the operation he said he wanted to be running (autumn block, self-feed) versus the choices he was making that reflected different priorities and values around machinery, feed, spending money, as well as sentiment for his cows. This was found previously in Lobley et al. (2004) and Conway et al. (2016, p. 166) that farmers may "have deep rooted emotional attachment[s] to the key business assets they own...increasing their reluctance to relinquish ownership". Thus, that type of value as a farmer is not uncommon, but the point was whether and how it fit with his other values, goals, intentions and attitudes.

These same types of challenges continued, often 'ploughing the same ground' or rehashing topics he had already been grilled on, and their responses became so incredulous (e.g., "*What do you think you're doing?!*") to the point they were almost mocking. Shocked laughs followed the host's admission that he was still housing and feeding an empty cow rather than culling her. "*That's a waste of money!*" cried one of the guys. "*You've gotta think of 'em as a herd and anyone who doesn't fit in, get rid of. The value of the block is the profit*". The final straw was when they saw a bunch of permanent fenceposts lying on the ground at the base of a pasture. "*Why are you spending all of this money on permanent fencing that won't work because the posts aren't long enough...the cows will push right through! You need temporary fencing so you can move them around when you want to make smaller paddocks*".

The meeting lasted around three hours. In speaking with one of the Dairy C group members who had attended that meeting, he stated "*Personally, I think it's the sign of a really good discussion group that you all go in and critique – hard. On the flip side, I did come back from that meeting...there were times when I think, maybe they went a bit too hard on him, I felt a bit sorry for him a few times. There were times when, the point was made, and it wasn't...bullying afterwards, but it was a bit too much. You've said the point, 'we feel you're feeding too much'. I think there's a point when you can...they wanted to help, but it was just how some of them were doing it – like look, you DON'T need to be doing this, you're short of money, STOP spending this money. But at the same time, it's his farm. You can't really grab him and shout in his face*" (C3 interview, 5 Feb 2019).

The reflection from my fieldnotes included the following: "I felt awkward when he was getting badgered, like almost embarrassed for him, with the tone of voice people were using and the snorting with disbelief at his answers or unwillingness to face reality / do the 'sensible' things they all agreed he should do. At one point, I wondered if he felt embarrassed to have me listening in – I tried to melt into the background and not take too many notes on my phone (which is how I had transitioned to taking notes once we moved into the yard). I felt like the facilitator handled that poorly because he could have stepped in and prompted him to make some type of action plan based on their suggestions. Instead, one of the participants had to ask, '*So what are you going to do tomorrow?*' [The facilitator] needed to control the situation rather than just sitting

back and letting them go at the host. The farmer I carpooled to the meeting with said on the drive back that he felt like the host wasn't actually going to take their suggestions on board so that's why he stopped participating. There was no resolution, the end of the meeting just kind of trailed off after an exhausting amount of criticisms, and I remember standing in the final field feeling very tired and disengaged with the process". Thus, the hegemony of commonality is certainly evident in how the group's critical discourse played out in this context. Partly, the facilitator should have utilised techniques and tools for consolidating and harnessing the information provided in order to empower the host to take action rather than simply be inundated with suggestions. But also, this speaks to the failure to recognise differences in needs and expectations, not in reference to avoiding critical discourse, but integrating someone new to the group's ecology. Considerate facilitation of groups' interactions needs to identify if the critical discourse turns from being constructive and intervene to redirect or utilise other knowledge brokering methods.

9.3.2.2 Intersectional power dynamics

Finally, power dynamics around the intersection of gender and age surfaced through observation of the FDGs, negatively impacting certain participants' collaboration and the group's ecology and social learning (Shortall, 2001). Of the private benchmarking groups Dairy A, B and C, only one group had three women who attended the meetings as the primary operator or farming partner. Two of the women had been farming for a number of years, but the other was a relatively young farmer who had specialised knowledge in grassland management. Whilst the facilitator and participants would often ask for one of the longer-term farmer's input on numerous technical issues from a peer expert standpoint, I observed that the specialised knowledge and practice shared by the younger farmer was listened to but rarely engaged with through more questioning. That gave the impression that rather than being considered an expert, her peers and facilitator viewed her as a 'know-it-all' and through interview with her and her partner, she confirmed she felt her opinions and contributions were diminished (B2 Interview, 09 Jul 2019). In the other two groups, occasionally one or two farmers' wives would jointly attend the meetings. The male farmer would do the introduction for himself and his wife, identifying her not as a partner in the business but as his wife, and either she would ask no questions throughout

the course of the meeting, or they would be focused on social issues with the farm family or running the operation rather than technical issues. Thus, there were divergent experiences between participants as to whether they experienced FDGs as safe spaces to engage in social learning and critical discourse.

The Dairy D group was an all-women group, similar to Beef & Sheep A, which was specifically formed to create a space for discussions about issues that women might not have felt comfortable bringing up in male-dominated settings, and because many had expressed their lack of confidence to attend FDGs or speak up at all. Shortall et al. (2020) explain the contributing factors behind this type of feeling of being uncomfortable or unwelcome within farming spaces to be interactional social processes of occupational closure. With regard to the concept of commonality of needs and expectations within the group, there was an interesting incident that highlighted differences in gendered farming identities amongst the participants. About 15 women, ranging from early 20s to late 60s, were sat at the conference table in an agricultural consultancy office's meeting room when the facilitator started the meeting and welcomed everyone. The first order of business was to go around the table and have everyone introduce themselves, including where they farmed and basic details about their operation (e.g., herd size, milking platform). The first woman (in her 60s) introduced herself as a farmer's wife; the next woman (in her 20s) introduced herself as a farmer; the next woman (in her 20s) introduced herself as a relief milker; the next woman (in her 50s) introduced herself as a farmer, farming in partnership with her husband; the next woman (in her 20s) introduced herself as a farmer's daughter; and so on until the last woman (in her 60s) also introduced herself as a farmer's wife. This brief incident poignantly illustrated the varying identities that the women possessed in relation to the farms they worked on, jointly owned, or provided value toward in the form of unpaid labour. The women who self-identified as farmer's wives initially made derisive comments as to their competence about the farm, but through inclusive facilitation techniques to promote sharing of experiences and latent knowledge, the meeting involved a significant amount of exchange as to how short- and long-term personal goals often intertwined with the farm.

Interestingly, the Veg Growers group, as described in Chapter 5, was largely balanced in terms of gender, with potentially more women than men, and

most growers were younger than 35. As mentioned many times before, the group was founded on a commitment to democratic principles in the way that they interacted with one another. Thus, I was shocked when an interviewee recounted an incident in one of their meetings where she felt there had been a stark gender distinction (F6 interview, 19 Dec 2018). The group had been visiting a farm where a couple ran a highly successful market garden, and the female partner had gotten onto the small tractor they owned to demonstrate something. The participants were all standing in a semi-circle around the tractor, and when she motioned for them to move closer so they could see what she was demonstrating, only the female participants stepped forward. The interviewee distinctly remembered the incident due to having looked around upon noticing that some people didn't step forward and realising that it was all the males. Her interpretation was that they were not interested in having a female teach them how to do a traditionally masculine activity on-farm, i.e., driving machinery. Obviously, not having been there, I was receiving this information through the eyes of another and there may have been other interpretations or explanations for that incident. Nonetheless, it does throw into question the commonality of experience and dynamics of power even within groups that explicitly articulate their commitment toward egalitarian participation and mutual respect.

These examples demonstrate that “Social learning, therefore, includes both social structure, concerned with drawing attention to social forces mediating the learning and knowledge of groups, as well as with individual and group capacities to act. While skills in stimulating group processes, creating learning exercises and stimulating discussions among members of learning networks are key determinants of the quality of social learning, political capital, diverse partnerships and material resources are also critical leverage points for change” (Kroma, 2006, p. 13). In fostering the group's structures for critical discourse and ecology for social learning, the facilitator plays a significant role in creating safe spaces for interaction, learning and change amongst the group members. Adding to Kroma's assessment, however, differences in various forms of capital and power may negatively inhibit full participation or potentially exclude certain people from engaging in the community, peer-to-peer exchange and social learning (Shortall et al., 2020).

9.4 Conclusion

This chapter has demonstrated the crucial role that the FDGs' ecologies of collaborative learning and norms for interaction played within those spaces in framing and promoting social learning. Actors' agency to engage in critical discourse was found to be influenced by each group's particular ecology, which should be considered dynamic rather than static due to the evolution of the groups' norms over time. In addition to whether challenging questions, constructive criticism, provoking justifications and other forms of critical discourse were encouraged or discouraged by the groups' ecologies, there were differences as to which topics they could be applied to. Trust was a significant underlying factor as to whether and how critical discourse was carried out amongst the groups. Dairy D, as a newly formed group, did not have the bonding social capital and companion trust to support engaging in that way yet, but skilful facilitation helped create a safe space for swift trust to be established and allow for sharing, e.g., insights from their farms, personal goals and reflections. The Veg Growers demonstrated bonding social capital and companion trust, but their farmer-led engagement in challenging each other's decisions was not unconditional—sharing figures was observed to be a topic that exceeded the group's ecology for collaborative learning. Similarly, the Beef & Sheep A and B groups exhibited bonding social capital with regard to the informal relationships and the strong social support angle of the groups, but low levels of companion trust inhibited sharing and engaging critically about each other's operational decisions.

The benchmarking groups (Dairy A, B and C), on the other hand, operated according to ecologies that encouraged challenging each other's decisions for reflexive assessment as to whether they fit with underlying values, beliefs and intentions or were being influenced by assumptions and biases. They exhibited strong evidence of companion trust and bonding social capital, but there were nuances in their unconditional nature within each group, particularly around figures, as to whether members trusted the accuracy of what their peers shared and how it could be challenged. Unlike the instances of 'dark' bonding social capital exhibited by the Beef & Sheep A and B groups where non-conformity with prevailing opinions within the group was inhibited, the benchmarking groups' ecologies relied upon non-conformity and divergent viewpoints as critical to their

learning processes. Thus, they are instructive in demonstrating that where group's ecologies have evolved so that the norms and expectations for critical discourse are all-encompassing (i.e., inclusive of figures), passive conformity with commonly held opinions, failure to challenge each other's decisions and non-trust-implying actions, such as defensiveness and misreporting figures to appear better in comparison to one's peers, erode the group's companion trust and bonding social capital.

As noted with regard to the beginning stages of the Dairy D group, the facilitator played a significant role in shaping the groups' ecologies to develop the trust and social capital necessary for participants to be willing to expose themselves to risk and be vulnerable with their peers through engaging in critical discourse. Whilst time and limited membership may have contributed to the benchmarking groups' higher levels of trust in terms of sharing about figures, the facilitators still needed to structure the groups' interactions, e.g., establishing ground rules with the members, in a way that recognised the risk of confidentiality breaches and/or minimised the potential for members to take valuable information away without reciprocating for others' benefit. As a completely farmer-led group, the Veg Growers were grappling with the balance between needing someone to coordinate and lead the meetings yet wanting to be as non-hierarchical and democratic as possible. With a coordinator rather than facilitator for the Beef & Sheep groups as well, the role involved organisation, time management and contributing questions to stimulate more explanation from the host / expert rather than stimulating debate amongst the participants. As discussed in the following chapter, if social learning is an intended outcome of FDGs, these differences are instructive as to the need for knowledgeable and skilful facilitators able to utilise techniques and strategies to foster critical discourse and stimulate self-reflexivity by the participants. Fundamental to their application, however, must be awareness of the various tensions which may arise in group learning contexts and a commitment to creating a safe space for everyone to engage in social learning processes.

CHAPTER 10 – CONCLUSION

“I’ll Be There for You”⁶⁰

We were in the side meeting room of a local pub nearby the farm we had just visited. I was sat amongst members of the group eating one of the pub’s daily specials and chatting with the partner of one of the hosts and their young child who played on the chair next to her. A cosy fire burned in the corner of the room as cutlery clinked, pints were sipped and the farmers laughed and joked with each other. As was customary for that group, the chairman got up toward the end of the meal to thank the hosts for having the group out for a visit and recapped some of the key points from the day’s discussion. He paused for a second and then continued sombrelly. “As some of you know, I’ve been experiencing some health problems...”. Turns out, in light of some bodily changes he had noticed, he had gone to the doctor and they had found a mass. The following day marked the beginning of a long road of tests and treatment.

As he spoke, I noticed my mood change. On one hand, I felt a sinking feeling of sadness and sympathy that such a nice guy was having to go through such a terrible thing and dread for him about the ‘what ifs’. What if he had let it go too long? What if they found it was much worse than originally thought? What if he didn’t respond well to the treatment? On the other hand, I felt instantly awkward as a non-member of the group listening to this exchange about a very heavy and assumedly quite private issue. He was confiding in his group of trusted colleagues and mates, and though he had been very kind and welcoming of me as an observer of the group’s interactions, I was still an outsider.

I also watched the body language and expressions of the members change, reflecting deep concern for their friend and respected peer. When he had finished telling them about the next steps, their reactions were overwhelmingly positive and encouraging. They asked about his partner and how she was holding up. They pointed to another member who was a survivor and the chairman acknowledged how grateful he was that he could draw on his support. Someone made a funny comment to lighten the mood and everyone laughed, and the lunch ended with well wishes for the next day and offers to help if he and/or the farm needed anything. As I left, I couldn’t help feeling as though I had just witnessed a perfect example of how much these groups can really mean to people as a support network. I had witnessed them push each other to justify decisions that had economic implications and brainstorm about how to improve their operations for better profitability. But after twenty years of sharing about business, life and all its sad, scary, unsettling complications had inevitably become part of the conversation as well.

10.1 Introduction

This thesis presents an ethnographic account of how social learning was promoted by and carried out within seven farmer discussion groups of varying size, organisation and type throughout South West England. This chapter recaps the elements of social learning that played out in different ways and to

⁶⁰ Crane, D., Kauffman, M., Skloff, M., Willis, A., Wilde, D., & Sölem, P. (1995). I’ll Be There for You [Recorded by the Rembrandts]. On *L.P.* [CD]. Los Angeles, CA: Warner Bros. Records (23 May).

different extents within the groups observed and how the findings answer the research questions this study set out to investigate. Additionally, contributions the study makes to different areas of knowledge and literature within various disciplines are outlined as well as further research the findings suggest should be carried out to continue developing our understanding around these social phenomena.

10.2 Recap of social learning elements

The previous chapters have shown that social learning elements were prevalent within the various FDGs. All of the groups exhibited behaviour modelling throughout the course of their interactions, through some instances of enactive learning but mostly through demonstrations and explanations by host farmers or expert presenters that allowed for vicarious learning from another's knowledge and/or experience. This form of observational learning from peers within one's environment was found to be influenced by four subprocesses: attention, retention, production and motivation. Variances in attention paid to various modelled behaviours were related to the participants' perception of the functional value of the modelled behaviour, which was influenced by their beliefs as to whether it was relevant, important and likely to result in useful or positive outcomes.

Retention or coding of the modelled behaviours in relation to the participant's prior knowledge and experience was seen to vary between instances where assimilation was needed (i.e., integrating the new information into one's existing cognitive structures) versus accommodation (i.e., dissociating and reconstructing one's cognitive structures due to the information expanding beyond one's existing frame of reference). Production based on observational learning was largely not observed unless there were instances of enactive learning during the groups' meetings; however, interviews with participants revealed that on-farm production of modelled behaviours from FDGs was heavily influenced not only by the farm's operational context but the farmer's socio-cultural context as well. Thus, the behaviours were retained and adapted for production according to the learner's context, as well as further refined through the process of production (e.g., trial and error).

Finally, varying levels of motivation to learn the modelled behaviours were found to relate to the learners' perception of their current understanding and implementation of an idea, process or practice. If viewed as effective or 'correct', their motivation to learn alternate information through behaviour modelling was lower than when a change was desired due to dissatisfaction with their current conceptualisation. Additionally, whether the demonstration and/or explanation of the modelled behaviour was intelligible affected motivation to learn it, as well as its plausible adoption and application and perceived fruitfulness, e.g., offering a new explanation or opportunity for experimentation. Thus, if the new concept is presented in a way which is not understandable or seems inapplicable / non-implementable to the learner, s/he will have very low motivation to invest energy into learning it and implementing a change.

Motivation to learn the modelled behaviours may also be affected by learners' self-efficacy, which is the observer's belief as to whether s/he is capable of learning and/or performing it adequately. This may relate to learners' confidence, which was found to be positively impacted by participation in FDGs and interactions with peers exposing them to new ideas and directly or indirectly pushing them to evaluate their situation and improve. Motivation may also be impacted by learners' self-regulation, whereby learners observe, judge and react to their progress (e.g., towards an outcome), cyclically self-evaluating whether what they have learned is (un)acceptable as influenced by social variables. Negative assessment of one's understanding or performance may present the risk that the learner's motivation to learn may decrease (e.g., 'I'm rubbish at this, so what's the point?'). On the contrary though, as witnessed from many of the FDG participants, determining that their approach was not working and needed to be modified to improve progress often increased motivation to gain insights from peers as to how changes could or should be made. External factors perceived as barriers to achieving the modelled behaviour may also negatively impact upon motivation to learn, which was seen in instances where participants expressed sentiments along the lines of 'well, that might work for you, but it won't work for me because of X, Y and Z' (e.g., structural differences with their farms, different soil type, tenancy versus owned, etc.).

The rich examples witnessed throughout the course of the FDGs' interactions demonstrated that the behaviour modelling element of social learning

frequently occurred and promoted cognitive development for the participants through the process of observational learning. The element of role modelling was also evident within all of the groups, which is perhaps unsurprising in terms of triadic reciprocity – learning through interactions with one’s environment will not only be influenced by the nature of the behaviour being modelled but also *who* is modelling it and how. The person’s perceived competence as to the idea, process or practice influenced the subprocesses explored above, e.g., the learners’ attention and motivation to learn from her or him. Specifically, the modeller’s perceived prestige, stemming from the different types of capital possessed (economic, social and cultural) combining to form her/his symbolic capital and thereby conferring status, was also found to increase learners’ motivation to attend to, retain and produce the modelled behaviour.

In addition to the modeller’s attributes contributing to her/his status as a role model, the positive/negative vicarious consequences s/he incurred were found to influence learners’ attention and motivation to learn from that person as well. In many instances, economic consequences were observed or discussed by learners, but social consequences were also presented. The perceived consequences incurred by models thus influenced their response facilitation, or social prompting of learners to respond, think about, plan for or act in a similar fashion. Many examples of role models’ vicarious consequences promoting inhibition by observers were witnessed, reinforcing the impulse to refrain from modelled behaviours where negative consequences were incurred. On the other hand, there were a few instances where role model’s examples of positive consequences, or more aptly, the avoidance of negative consequences assumed to accompany certain actions, promoted disinhibition by observers of modelled behaviours. Those promoted learners’ motivation to attend to, retain and produce concepts, processes and/or practices that would have been considered too risky or likely to incur disbenefits.

Role models’ consequences considered to contribute to learners’ goals, or problems towards which their learning was directed, also promoted motivation to learn from them. Importantly, this coincided with outcome expectations as to what anticipated outcomes could be expected from modelled behaviours as perceived from models’ vicarious consequences. When learners had a gap in existing cognitive structures or solutions for how to approach their problem or work

towards accomplishing a goal, being able to observe that certain concepts, processes or practices were likely to result in certain outcomes was necessary for the learners to be able to formulate cognitive maps and plans. This related to another significant result from learners' observation of role models' behaviours and associated consequences: self-efficacy, often expressed through the statement 'if s/he can do it, so can I'. Thus, perceived similarities between the learner and the modeller were shown to increase motivation to learn in many cases, whilst dissimilarities often decreased motivation. Conversely though, dissimilarities were particularly motivating in some cases in terms of pushing participants beyond their existing cognitive structures within their zone of proximal development to expand their learning.

These elements of behaviour modelling and role modelling therefore shaped the participants' learning processes, emphasising various factors that influenced cognitive, affective and behavioural processing and response. There were many similarities between the groups in terms of the way explanations and/or demonstrations were presented between peers and the influence that perceptions of the people presenting the information, the information itself and the participants' varying sociocultural contexts had on their attention, motivation, self-efficacy, etc. There were, however, distinct differences between the FDGs in terms of whether learners exhibited self-reflexivity through and in relation to their interactions with their environment in the context of the group. Self-reflexivity is a dynamic process whereby the learner not only scrutinises whether modelled behaviours are valid, applicable, desirable, incongruous, etc. in relation to her/his existing values, beliefs, attitudes and intentions, but also whether they are in line with her/his socially informed self-image and aspirations, and/or challenge hidden assumptions and biases (Béres & Fook, 2020).

Building on foundations of collaborative competences that fostered group learning, e.g., communication skills and intersubjectivity as to how another person may understand or approach the information differently, collaborative actions such as asking questions and explaining concepts were found to be impacted based on the structure of the learning intervention. Interactions within the context of meetings centred around expert presentations versus group discussion not only did not encourage but even constrained collaborative action. As collaborative learning enhances critical thinking through participants having to

engage with different points of view and evaluate their validity against their own knowledge and experience and external information (Halx & Reybold, 2005), the FDGs varied in terms of evidence of critical thinking between these different types of meetings as well. In addition, use and development of dialectical thinking skills around conflicting information or paradoxical situations was promoted through participants engaging in dialogical reasoning with their peers in some of the groups' discussions. Through interactions where the FDG participants challenged not only the strength and feasibility of different points of view but also each other's assumptions and biases behind them, evidence arose of these types of social interactions (critical discourse) provoking self-reflexivity.

Thus, critical discourse as a style of interaction amongst the participants emerged as a defining characteristic between the FDGs with regard to the promotion of self-reflexivity and metacognitive learning. Similar to what Beers et al. (2016) found in the context of networks' learning processes around systems transitions, 'antithetic interactions' or disagreement was important to the process of stimulating metacognitive assessment and reasoning, or requiring the participants to think about their thinking. Divergent viewpoints introduced into the discussion referencing personal experience or wider knowledge were therefore critical to challenge peers' value conflicts, contradictions with sociocultural norms or changes, assumptions on which their decisions were based, etc., and provoke justifications and counterarguments. Various factors were found to influence promotion of critical discourse, such as groups' ecologies or norms of interaction that promoted or inhibited agency by the individual actors within the context of the group, social capital of the group and trust amongst the participants, and whether the group had evolved over time to incorporate different norms and expectations around interaction and learning.

Additionally, the facilitators played a key role in the different FDGs as to how they fostered the conditions for critical discourse, thereby promoting self-reflexivity by the participants and social learning amongst the group. There was a significant distinction in the approaches by facilitators versus coordinators of the various groups, relating to sociocultural factors at play, e.g., whether there was an appetite for someone to 'lead', and the groups' objectives, e.g., to provide peer support and opportunities for socialising to combat isolation and loneliness. Tensions became obvious in the course of groups' discussions that incorporated

critical discourse, pointing to the careful balance between critiquing, offering constructive criticism and challenging in accordance with the collective norms, and 'pushing too hard' through communicative action that breaches the boundaries of the norms participants have co-constructed. This points to the need for considerate facilitation to create safe spaces and utilisation of skill and techniques to realign the interaction to avoid entrenchment, disillusionment and disengagement. Finally, power dynamics within the many relations between peers, in this study most apparent in the case of gender, may also inhibit engagement in critical discourse as a contributing component of the FDGs' social learning processes.

10.3 Contributions of the study

10.3.1 Research questions

The research questions this study set out to answer by conducting an ethnographic study of seven farmer discussion groups over the course of a year were:

- 1) Is social learning occurring within FDGs, and if so, how and why?
- 2) Are there differences between types of FDGs with regard to promotion of social learning?
- 3) Can social learning processes be tailored through certain methods to promote higher-level cognitive and metacognitive learning outcomes?

With regard to question one, the simple answer as to whether social learning occurs within FDGs from this study is: it depends. As described in the previous part of this chapter, all groups observed within the course of this study exhibited the elements of behaviour modelling and role modelling throughout their interactions. With regard to the element of self-reflexivity, however, evidence of its promotion and occurrence through and as a result of the FDGs' interactions was far less consistent across the groups. As discussed in Chapter 9, the emerging factor as to how the groups promoted self-reflexivity and thereby social learning was critical discourse amongst the participants, which was significantly influenced in presence, form and extent by each group's ecology for collaborative learning and resultant norms for interaction.

Therefore, question two can be answered affirmatively that there are differences between types of FDGs in promoting social learning. Those with ecologies that specifically encourage and expect disagreement in the form of constructive criticism, challenging each other's decisions and opinions, provoking justifications and uncovering hidden assumptions and biases do promote social learning. Professional facilitators are important in driving these groups' evolution to incorporate more openness to sharing and expectation of criticism for the purpose of mutual benefit and development. These types of FDGs also emphasise the social aspects of coming together to learn amongst peers, as exemplified by the three benchmarking groups in the study (Dairy A, B and C), which had all existed for nearly two decades and provided important support networks for each other to deal with myriad issues faced over the years, e.g., system changes, natural disasters, low milk prices, milk buyer requirements, changing regulations, disease outbreaks, family crises, etc.

They differ from FDGs with ecologies that do not operate according to norms that encourage critical discourse and thereby fail in many instances to promote social learning. The Veg Growers mostly seemed to foster social learning through farmer-led critical discourse about all aspects of the growers' operations, with the distinct exception of financial information, which was beyond the bounds of the group's acceptable topics within its ecology of collaborative learning. Dairy D was in the formative stages of group learning and the foundations were being laid for social learning to occur through enhanced social capital and trust amongst the participants, allowing for future critical discourse. Nevertheless, self-reflexivity was observed in some instances through the facilitator's skilful application of techniques aimed at creating a safe space for the participants to feel comfortable sharing about and self-assessing their goals, decisions, biases and assumptions. The Beef & Sheep A and B groups were examples of FDGs where social learning was not found to be occurring due to lack of evidence of self-reflexivity being promoted through the group's interactions. These groups did not have a professional facilitator aiming to engage participants in critical discourse, instead focusing more on administrative tasks and organisation. Similar to what was emphasised above though, FDGs lacking ecologies that promote social learning still fulfil a vital function in providing an opportunity to learn (cognitively process and develop their existing knowledge

and experience), as well as a social network for people to meet, share about challenges faced on farm, gain ideas from others' examples (if they choose to share), provide support in the face of disasters (e.g., health scares), etc. People referred to them as being important outlets to combat farmer isolation in rural areas, e.g., getting people off-farm at least once a month, and in promoting solidarity, e.g., helping them realise that they were not the only ones struggling with particular issues. Thus, even though their social norms for interaction do not support critical discourse that contributes to promoting self-reflexivity by the participants and thereby social learning, these types of FDGs are still very useful collaborative learning mechanisms within the farmer learning landscape.

In terms of the third research question, there are different considerations as to how social learning processes may be tailored to bring about higher-level cognitive and metacognitive learning outcomes. As explored in the findings from fieldwork under the study, the participants from the groups promoting social learning spoke about 'like-mindedness' in terms of people who were willing to be open and share in-depth information as well as engage critically with their peers. Thus, social learning processes, or more specifically collaborative learning interactions aimed at promoting social learning through critical discourse, will likely not be amenable to everyone given these personal characteristics or inclinations that need to be present and/or able to be developed within the participants. People who are firmly opposed to sharing and/or receiving criticism, regardless of how constructive it is, will likely not even entertain the idea of joining a collaborative learning situation that aims to promote social learning. Conversely, FDGs at different stages of openness should be available for people who are inclined to share certain types and amounts of information, but given the potential for stagnation and dissolution of the groups if they don't evolve in their collaborative learning journey, the facilitator may need to incorporate different techniques and exercises to help develop the members' capacity for self-reflexivity and critical discourse over time. Again, not every group or individual members of each group may be comfortable evolving to the same point or at the same rate where they are expected to engage in in-depth sharing and critical challenge, and there may be non-trust-implicating actions by various people at different times over different matters that introduce complications for the group to

deal with and/or recover from. Thus, the promotion of social learning within FDGs must be seen as a continual process rather than a destination.

Building on that, there appears to be a significant need for social learning processes to be structured according to certain ground rules, such as confidentiality amongst the participants in order to promote sharing of sensitive information. Given the significant role that trust plays in providing the foundation for the groups' norms for interaction to incorporate in-depth sharing and critical discourse, group learning processes therefore need to be tailored to promote trust amongst the participants. Otherwise, the participants will likely be less willing to be vulnerable with their peers and accept the risk that the benefits will outweigh the potential downsides of sharing and opening themselves up for criticism. Discrepancies in trust relations amongst the benchmarking groups whose ecologies promoted openness and sharing of financial information, however, speak to the complications involved with getting all group members over the hurdle of not engaging in non-trust-implying actions when divulging information for comparison or acting defensively rather than inquisitively for options to improve. Technically, groups that share financial information and benchmark their figures off each other may be viewed as having high levels of companion trust developed over years of informal interaction in addition to formal group learning. Skewing their results to make themselves look better in front of their peers, however, connotes that those groups' processes may not have the adequate bases of trust to support all members' self-reflexivity and they need some intervention to reassess what are their intended learning objectives, what types of trust-implying actions are necessary to achieve them, and what people need for reassurance and/or confidence in their vulnerability risk-reward assessment.

10.3.2 Areas of literature

As highlighted in Chapter 1, this study aimed to contribute to the agricultural education and extension literature around farmer learning, specifically exploring how and why FDGs as a learning mechanism or intervention approach are effective at promoting learning, i.e., cognitive development, behaviour change, etc. Particularly with regard to the learning and change resulting from farmer groups found by past studies, this study also found that information exchange, explanation and interpretation of experience and approaches, analysing, reasoning, problem-solving, hypothesising and projecting, as well as

adaptation and uptake / avoidance of certain practices were attributed to and observed through the groups' interactions (O'Kane et al., 2008; Morgan, 2011; Hennessy & Heanue, 2012; Prager & Creaney, 2017; Ingram et al., 2018). The groups' observed and reported benefits from their collaboration additionally affirmed the findings from previous studies that there are wider benefits to be gained from peer-to-peer learning, such as breaking down hierarchies of knowledge and valuing learners' tacit knowledge (Millar & Curtis, 1997, 1999; Knierim & Prager, 2015; Curry et al., 2012), enhanced profitability and entrepreneurial development (Hennessy & Heanue, 2012; Prager & Creaney, 2017; Klerkx & Leeuwis, 2009), self-organisation and innovation (van Dijk et al., 2019; Tran & Rodela, 2019; Darnhofer et al., 2010), social support and co-construction of new knowledge and understanding (Koutsouris, 2012; Leeuwis & Aarts, 2011; Restrepo et al., 2018), amongst others. One of the overarching contributions this study makes to the state of the literature, however, is not only why farmer discussion groups promote advanced cognitive outcomes through observational learning from behaviour modelling and role modelling in the groups, but also metacognitive outcomes through certain types of engagement (critical discourse) promoting self-reflexivity.

The understanding of reflexivity within educational learning theory has developed from self-regulation and practitioner reflection-in-action to incorporate self-awareness and assessment of positions and decisions from the critical standpoint as to whether they are informed by underlying assumptions and biases and/or conflict with one's values, beliefs, intentions, etc. The ethnographic examples throughout the thesis demonstrate how interaction with their peers led some group members to fundamentally question their thinking about different issues as well as why it was they were inclined to think that way. Thus, this study not only adds to the understanding as to why FDGs are positive mechanisms for promoting reflexivity within learners, but it also adds to the understanding as to how they may be carried out to enhance these metacognitive outcomes from the process. It demonstrates the crucial role critical discourse can play and the fundamental bases which need to be established for groups to engage in that manner. The study data reinforce the impact that trust relations have been found to have on the participants' willingness to be vulnerable and risk exposing their personal information to others in a P2P learning process, but they also contribute

novel insights into the nuances in trust within the groups. These internal nuances challenge the idea that groups which exhibit strong bonding social capital and companion trust from years of formal and informal collaboration universally have unconditional trust amongst everyone in the group, even if their bonds and base levels of trust may be enduring. There is a need for more research, arguably ethnographic and (relatively) longitudinal, to attempt to unpack these internal nuances within various groups or closed social networks. How do they come about, how are they addressed and what are the various strategies or approaches that have been employed to deal with or repair relationships within groups? On the whole, however, these findings speak to the need within the literature to consider these intra-group processes and relationships as dynamic and fluid rather than having achieved a set level of trust or openness that will remain constant or not be challenged and potentially revert backwards throughout the ongoing collaboration (Falk & Kilpatrick, 2000; Riley et al., 2018).

Additionally, the study adds to the burgeoning literature as to the vital role played by facilitators of these learning processes, commonly referred to as intermediaries, network brokers or change agents in the literature regarding networks and innovation systems (Leeuwis & Aarts, 2011; Klerkx & Leeuwis, 2009; Berthet et al. 2018). The techniques and approaches utilised by some of the facilitators in this study will add to the understanding as to not just how to 'do facilitation', but also how facilitation may be aimed at enabling groups to achieve higher-level outcomes, such as innovation, resilience, sustainability, empowerment, etc., beyond simply learning (van Dijk et al., 2017; Morgans et al., 2021). Further investigation specifically on the differences between facilitation styles, methods and outcomes and how they relate to underlying philosophies and objectives about peer-to-peer learning held by the facilitators would contribute to a richer understanding as to how competencies and skills may evolve and/or be developed through fundamental changes to one's guiding principles about facilitation (Nettle et al., 2006, 2011).

In line with the differences between groups' facilitators / coordinators approaching the collaborative learning opportunity with different underlying guiding principles and objectives, the study also speaks to the interpersonal and relational dynamics within group learning spaces that necessitate attention (by all the actors) to safe spaces. Cristóvão et al. (2009, p. 201) highlight with regard to

collaborative learning spaces (e.g., Communities of Practice explored in their study) that they “tend to develop in democratic environments where people participate freely, are used to assuming the risk of sharing ideas, experiences and practices, and can become involved in concrete action”. This study has contributed knowledge specifically around FDGs as spaces where the participants are “used to assuming the risk of sharing ideas, experiences and practices” (ibid.) and has spoken to the complications around their ability and capacity to participate freely due to individual comfort levels, preferences, confidence, etc. regarding sharing and/or engaging in critical discourse that differ from the group’s collective norms or ecology. Additionally, there was some evidence which emerged that speaks to the literature around interactional occupational closure from a gender perspective within agriculture, but further exploration as to how power dynamics around intersectional issues, such as gender, age, position as farm owner / non-farming partner / employee, etc., impact actors’ engagement in critical discourse within the context of peer-to-peer learning would be a useful next step to build on this understanding.

The thesis also makes a significant contribution to the social learning literature that spans different disciplines (Reed et al., 2010). The results speak to the debate as to what constitutes social learning and how it is understood whether collaborative processes have resulted in it. Previous studies, particularly in the natural resource management area of study, have considered that social learning occurred through participatory processes amongst stakeholders because collective management outcomes were reached, thereby assuming that through the process of having to iron out co-management details, people with diverse perspectives, beliefs and objectives learned and expanded their knowledge through engagement with other viewpoints (Rodela, 2011). This study, however, emphasises the processual elements as to how social learning happens, focusing on the modelling amongst peers and how and why that may result in observational learning and cognitive change for the participants. Additionally, the data demonstrate the self-reflexivity that social learning processes can and should encourage in order to promote metacognitive development for the participants. Through engagement in a particular style of discourse, the study shows that people can develop their capacity, skills and, importantly, their desire to engage in a different, purposeful way with their peers to promote learning and

change in their thinking about their thinking around different concepts (Béres & Fook, 2020).

In terms of broader contributions to adult educational learning theory, the ethnographic examples from this study provide support for the andragogical expectation that adult cognitive learning is often based on problems faced by the learner (Merriam & Bierema, 2014), and therefore motivation will be influenced by the outcome expectations of modelled behaviours and how they may contribute to solving the learner's problems and/or achieving certain goals (Schunk, 2012). The study therefore adds support for targeting collaborative learning interventions to address problems faced by group members as an effective approach to elicit cognitive learning outcomes. Additionally, ethnographic examples from the study strongly suggest that learner self-efficacy not only significantly influences motivation and cognitive processing of modelled behaviours within group learning contexts, but it also appears to improve through engaging with one's peers in such collaborative learning processes. These findings contribute to the state of the art regarding adult learning theory and the body of literature around collaborative competences necessary for effective collaborative learning (Valdes-Vasquez & Clevenger, 2015; Warsah et al., 2021; Halx & Reybold, 2005). Specifically within the farmer learning context, they speak to the improvements to farmers' confidence and collaborative competences that may be gained from engagement in FDGs and thereby the co-benefits promoted by this type of mechanism in addition to knowledge exchange, as outlined above. One area that would benefit from more research, however, would be the potential distinctions between the collaborative competences of groups of farming peers as compared with other groups of adult peers aiming to learn with and from each other and how their self-efficacy and confidence levels may impact and be impacted by their competences. Based on the outcomes of such an investigation, it may then be important to endeavour to understand how targeted interventions as to certain competences may improve learning from multiple perspectives, e.g., processual, affective and metacognitive.

10.4 Conclusion

The blanket assertion that learning occurs in FDGs and that they offer multiple other co-benefits for farmers as an effective learning intervention was

confirmed by this study's findings. Nevertheless, the various groups were shown to differ in terms of their promotion of social learning and metacognitive outcomes. The learnings from the set of storied experiences captured during participant observation and interviews throughout the study provide insights into how metacognitive learning may be promoted by fostering critical discourse in FDG learning interventions. However, what this looks like will vary between group contexts largely due to their ecologies and norms for interaction, types of social capital and trust within the group and between the individual members, and how the facilitator attends to social factors and fosters communicative action using various skills and methods. There is significant scope for further research around each of these issues. Nevertheless, the process of carrying out this ethnographic study of the seven FDGs in South West England afforded an in-depth look into the intricate, complex inner workings of groups comprised of motivated, entrepreneurial farm business owners aiming to learn from their peers and, in most instances, give back into the group as much as they gain. Whilst some may offer 'more' in terms of pushing people to critically assess their ideas, processes and practices, the overarching takeaway from this study is no matter what the FDGs look like, the personal relationships they often foster are something special.

APPENDIX 1

Formal approval received from the University of Exeter College of Social Sciences and International Studies Ethics Committee for the PhD study.



**COLLEGE OF SOCIAL SCIENCES
AND INTERNATIONAL STUDIES**

Ethics Committee
ssis-ethics@exeter.ac.uk

CERTIFICATE OF ETHICAL APPROVAL

Academic Unit: Politics

Title of Project: What is the role of social learning within farmer discussion groups?

Research Team Member(s): Elizabeth Dooley

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Supervisor(s): Matt Lobley
Michael Winter

This project has been approved for the period

From: 16/10/2018
To: 24/09/2020

Ethics Committee approval reference: 201819-009

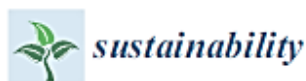
Signature: Date: 16.10.2018

A handwritten signature in blue ink that reads "Stephen Skinner". The signature is written in a cursive style and is underlined.

Stephen Skinner
Chair, SSIS College Ethics Committee


APPENDIX 2

Article published in 2020 based on PhD study: Dooley, E. (2020). An Ethnographic Look into Farmer Discussion Groups through the Lens of Social Learning Theory. *Sustainability*, 12, 7808, doi:10.3390/su12187808.



Article

An Ethnographic Look into Farmer Discussion Groups through the Lens of Social Learning Theory

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Abstract: Farmer discussion groups (FDGs) are a collaborative mechanism through which farmers can engage and learn from and with their peers. Participants cite numerous benefits from FDGs, e.g., economic, social, etc., but how learning happens in these contexts from an adult cognitive learning theory perspective is not well understood. Thus, Bandura's social learning theory was used to study seven FDGs in the South West of England. The objective was to determine whether social learning was occurring through the FDGs' interactions, examined according to three elements: (1) behaviour modelling, (2) role modelling and (3) self-reflexivity. An ethnographic methodology was utilised to gather rich empirical data through participant observation of 42 meetings and 24 semi-structured interviews. The results from 12 months attending FDG meetings demonstrated that behaviour modelling and role modelling were present in all FDGs. Self-reflexivity, however, was not evidenced as being promoted by all groups' interactions, which (facilitated) critical discourse amongst the FDG participants was found to foster. Thus, evidence of social learning was not found to be occurring as a result of all the FDGs' interactions. Collaborative learning processes that aim to promote social learning should build participants' capacity and skills, structure engagement and train facilitators to foster critical discourse that may help promote self-reflexivity from behaviour modelling and role modelling.

Keywords: farmer discussion group; social learning; collaborative; peer-to-peer; Bandura; self-reflexivity; critical discourse; facilitation

1. Introduction

Change is an omnipresent topic within UK agriculture at the moment, partly due to questions around how the agricultural policy framework will change upon the UK's exit from the EU Common Agricultural Policy, but also in light of ongoing technological innovations, shifting consumer preferences, farm business transitions, alternative contracts and entities, climate change, etc. In thinking about the changing nature of UK agriculture and the various impacts this might have on the farming population [1,2], farmer learning and knowledge exchange around innovative adaptations and transformative solutions offer a way in which producers can reduce negative impacts from change and increase their resilience [3–5]. The move away from the traditional "linear" model of knowledge transfer employed in extension and education toward knowledge exchange and farmer-led rather than researcher-driven processes provides the enabling environment to facilitate such innovative learning and change on family farms [6,7]. Farmers are viewed as proactive learners rather than passive recipients within Agricultural Innovation Systems (AIS) [6,8,9]. Collaborative learning processes aim to engage farmers in two-way knowledge exchange and build capacity as opposed to 'train' farmers [10–12].

Peer-to-peer (P2P) learning has been shown to be a particularly effective method for enhancing farmer learning [13–16]. Within the UK agricultural extension and education landscape, there are different collaborative mechanisms through which farmers can engage and learn from and with

their peers, e.g., monitor farms, participatory workshops and seminars, multi-stakeholder networks, demonstration farms, open days, etc. [17]. Farmer discussion groups (FDGs) are another collaborative mechanism farmers may choose to engage with to varying extents depending on their comfort level with P2P learning processes. In previous studies, FDGs have been found to promote social interaction, collaboration, information exchange, and feedback based upon shared and observed ideas, approaches, problems and strategies; in terms of outcomes, participants also report enhanced managerial skills and in many cases improved profitability [18–20].

As Ingram et al. [21] found with regard to farmer learning enabled by demonstration farms, however, we do not have a well-developed understanding of how learning happens within the context of FDGs from the perspective of adult cognitive learning theory. The available empirical evidence speaks to the fact that farmers see FDGs as valuable with regard to learning, they will dedicate time and money to participating in organised meetings and discussions, and they may attribute changes made on-farm to what they have seen, heard and learned in FDGs [22–24]. How and why participation may lead to changes in knowledge, behaviour, values, intentions and engagement, however, requires us to take a step back and look at how it is that participants in FDGs acquire, process and utilise information and experiences from their peers. If we can better understand this process, FDGs (and P2P learning interactions more generally) may be more effectively designed and implemented to specifically promote that acquisition, processing and utilisation and lead to desired outcomes.

There are multiple theories of learning that draw from different areas of knowledge and understanding as to how people learn, e.g., social science, psychology, biology [25]. They diverge often due to their focus on the individual learner's internal cognitive processes or, alternatively, the external learning environment and the learner's interaction with it. Experiential learning, or "the transformation of experience into knowledge", is a widely used theory to explain the cognitive process whereby a learner experiences something, reflects upon what s/he observed, draws concepts from it and then experiments with implementing those concepts [26] (p. 47). Transformative learning is another prominent theory in the adult learning context, explaining the internal process whereby a "disorienting dilemma" challenges one to critically examine the assumptions (taken-for-granted values, projections, stereotypes, etc.) "supporting our own beliefs and expectations, as well as those of others" [27] (p. 23); [28]. This form of learning is profound and extensive, fundamentally shifting the learner's frames of reference or meaning making to be "more inclusive and accommodating of a wider range of experiences" [29] (p. 86). A theory focused on the external context's influence is situated learning within communities of practice, whereby engaging in social participation is a process of learning and knowing the shared meanings, practices, and resources for carrying out that community's joint enterprise [30]. Transitional learning theory focuses on the impact that societal transformations have on the learning process, which in line with biographical lifelong learning "triggers a continuous process of constructing meaning, making choices, taking up responsibilities and dealing with the changes in the personal and societal context" [31] (p. 232).

A critique of cognitive learning theories is their lack of emphasis on the nature of the learner's social interactions within their environment as affecting learning [25]. Whilst encountering diverse perspectives may be the trigger for transformative learning to occur, for instance, the learner's internal process leading to fundamental changes in perspective is the focus [7,9]. On the other hand, theories that focus on how and why social context may affect the way individuals receive, utilise, reproduce, etc. information and knowledge are criticised for missing a piece of the puzzle as to how individual characteristics and cognitive processing affect learning [25]. Social learning theory, however, directly relates the learner's environment and social interactions to her/his cognitive development and behaviour change [32]. Along these lines, Rodela [33] (p. 15) states that social learning has been operationalised to signify "a change in internal-reflective processes" through participation, which may even induce transformative learning. Widely adopted and adapted as a theoretical frame in many areas of research, social learning has been applied to some extent in the agricultural extension field, generally denoting a process involving groups of people coming together and learning around a shared

objective, e.g., sustainable resource management [21]. As FDGs foster group interaction with the aim of promoting P2P learning, social learning seems as though it must be occurring in those spaces. The elements of Bandura's cognitive learning theory, however, have not been rigorously applied to understand whether FDGs cohere with social learning in practice [32,34].

Therefore, this paper aims to explore whether social learning, as understood from an adult cognitive learning theory perspective, occurs through FDGs' interactions, and if so, how and why. The data on which the analysis is based were collected as part of a PhD project, comprised of a year-long ethnographic study of existing FDGs in South West England. The article will be set out as follows. First, the conceptual framework used to explore and analyse FDGs' learning processes will be outlined, breaking down the elements of Bandura's social learning theory. This will be followed by an overview of the methodology employed in this project. Next, an overview of the sample is imperative to contextualise and draw from the different FDGs studied. Finally, results and discussion of the data will present how social learning elements were demonstrated amongst the groups as well as crucial factors and conditions to promote in collaborative learning situations in order to effectively foster social learning outcomes.

2. Conceptual Framework

Social learning theory has been used in many different fields of academic research since its conception, such as information systems, organisational studies and media and communication studies [35]. One area in particular is natural resource management, where social learning through collaborative, participatory activities results in changes in thinking and management [36,37]. It has also been applied in connection with systems thinking [38], communities of practice [39], and conceptualised as multi-loop learning [40]. Leeuwis and Aarts [9] provide a table with communication strategies for supporting social learning processes within networks for innovation, but as Beers et al. [7] point to within sustainability transitions, conceptualisation has mainly focused on outcomes rather than the process of learning drawing on the educational sciences. As critiqued by Reed et al. [41], studies have endeavoured to demonstrate that social learning occurs or is likely to result from people coming together around a common issue and sharing diverse insights, as evidenced by change—in how people think, what they intend to change, or how practice differs. Despite often referencing Bandura in relation to social learning, however, the elements of his cognitive learning theory have not been meaningfully engaged with in an attempt to understand why from a cognitive learning perspective the process of coming together and learning in that format may lead to changes in thought, intention and practice.

Social learning originated as a cognitive psychology theory regarding how humans learn through modelling and observation, resulting in behaviour change [32]. Bandura eventually renamed it social cognitive theory, emphasising that social learning goes beyond environmental influences causing reactive behaviour [34]. Rather, it can be understood as simultaneous interaction between the individual, his/her environment and behaviour (labelled triadic reciprocity), stimulating significant cognitive processing and development [42]. The theory posits, "By observing others, people acquire knowledge, rules, skills, strategies, beliefs, and attitudes. Individuals also learn from models the usefulness and appropriateness of behaviors and the consequences of modeled behaviors, and they act in accordance with beliefs about their capabilities and the expected outcomes of their actions" [42] (p. 118). The learner therefore exercises the capacity to think critically, "reflecting on the possible consequences of certain behaviours and then deciding on the best action" [43] (p. 74). Reflection has been described as a cognitive process of active, deliberate thinking aimed at rational, logical problem-solving or reflection-in-action—understanding new perspectives and ideas and building knowledge through experimentation [44]. Self-reflexivity, on the other hand, encapsulates a self-aware process of scrutiny and critical engagement in which the learner continuously questions and challenges her own ideas, beliefs, intentions, assumptions, processes and practices [45]. Building on this evolving perspective of the reflexive learner, the three elements of social learning processes framing this study were: (1) behaviour modelling, (2) role modelling, and (3) self-reflexivity [34].

Behaviour modelling may result in enactive (performed) and/or vicarious (observation and listening) learning from demonstration and explanation. The factors influencing learning under this element are:

- Attention—meaningful perception of the modelled action;
- Retention—rehearsing, coding and relating to previous knowledge;
- Production—compared to one’s mental representation;
- Motivation—reasons for devoting time and interest.

Role modelling brings in the important concept that *who* is modelling behaviours, and how, will impact the learner’s cognitive processing of the information, skills, practices, etc. demonstrated or explained. Perceived (positive or negative) reinforcement of the model’s actions is one of the factors affecting the learner’s motivation to act to achieve certain outcome (learning) expectations under this element. The learner’s self-efficacy (belief about one’s own capabilities), values, needs, social norms, incentives, etc. are also factors relating to the receptivity to knowledge and information from role models.

Self-reflexivity relies on the agency of those undergoing social learning, not just in terms of choice regarding content but also the process through which learners incorporate, activate and/or transfer and sustain behaviours, cognitions and affects over time [46–48]. Meaningful adult social learning processes move beyond enhancing or resulting in primarily task-orientated learning, whether behavioural- or cognitive-based, whereby self-regulation of performance is sufficient. Rather, the process of learning from one’s peers, promoting engagement with other ways of thinking, analysing and doing, may challenge not only how one does something but also the reasons why. Thus, Bandura’s original social learning element self-regulation was amended to self-reflexivity, denoting critical questioning of one’s own and others’ ideas, beliefs, attitudes, assumptions, processes and practices in relation to what has been modelled [46]. By reorientating learners’ cognitive processing, outcome expectations and self-efficacy towards awareness of and advancement in how they think about their thinking, continuously assessing their progress and needs along their learning journey, social learning processes may thereby also promote metacognitive development [27].

Thus, learning is a socially situated process, but simply because groups of people come together with the objective to learn, that does not automatically mean social learning is occurring. In endeavouring to understand whether social learning occurs through FDGs’ interactions, therefore, this inquiry was framed by three key elements building on Bandura’s original theory: behaviour modelling, role modelling and self-reflexivity.

3. Methodology and Sample

Taking this understanding of social learning theory forward, an ethnographic study of seven FDGs was conducted in South West England. The research project was designed in recognition of the lack of empirical observation and assessment of on-the-ground farmer learning, behaviour change in technical practice and decision making and innovation processes. Rose et al. [49] highlight that, to date, studies have often aimed to understand farmer behaviour or measure learning through intention to change. Ethnography is pointed to as an underused methodology, and longitudinal studies monitoring farmers’ actual rather than “reported” behaviour change are lacking.

Ethnography is “a style of research that is distinguished by its objectives, which are to understand the social meanings and activities of people in a given ‘field’ or setting, and its approach, which involves close association with, and often participation in, this setting” [50], (p. 11) (emphasis in original). Thus, the aim in committing to at least a year of following a small number of groups was to dedicate the necessary amount of time and care to relationship building with the members of the groups in order to gain deep insights into their critical exchanges, history, relationships, power structures, meaning making, etc. [50].

Recruitment Access was predominantly gained to the private groups through their facilitators/coordinators, who acted as Gatekeepers. There is no overarching directory of FDGs throughout the South West, let alone the country, so locating possible groups was the first step. Many FDGs are privately funded by the participants and therefore not advertised to the public. Organisations that run groups may be locatable, but often their FDGs are not open to the public, restricting attendance by farming sector, location, membership, fee, etc. Thus, a preliminary scoping exercise was carried out via online search as well as word-of-mouth inquiries to the local farm management association, levy body, veterinary companies, university research centre, etc. Six identified Gatekeepers from the surrounding area were then invited to a half-day workshop (only four could attend) at the University of Exeter, where the research project was introduced and the results from the scoping exercise were collaboratively expanded to include more existing groups in the South West of England. A sample of FDGs was selected from the compiled list and the facilitators/coordinators were individually approached to ask whether s/he would act on behalf of the researcher and ask their FDG members whether the researcher could attend an initial meeting. Immediately upon attending each group's initial meeting, the research project was explained, permission was requested and informed consent was gained to observe them for a year.

Participant observation: All group meetings possible for the selected FDGs were attended (42 in total) and detailed field notes recorded in a research journal. Inactive participant observation was the approach: watching, listening and recording insights about the group interactions [50]. Active participation was purposely refrained from to avoid potentially skewing the conversations between the participants. Depending on the context, handwritten notes were not possible or appropriate during some meetings. Instead, auditory notes were recorded on the drive back from the meeting. All notes were typed up to perform thematic analysis and stored on the University of Exeter server.

Semi-structured interviews: Five interviews were held with the groups' facilitators/coordinators during the first three months of fieldwork to discuss the approach towards fostering learning within each group. During months 5–11, 19 farmer interviews were conducted. By then, the researcher had attended multiple meetings and was familiar to the members. The original plan was to interview three members per group, but access to individual members was denied by two of the groups' sponsoring organisation (Beef/Sheep A and B, see Table 1). Thus, 3–4 farmers from Dairy A–D and the Veg Growers as well as two from additional groups were selected based on their participation observed within group meetings (e.g., bold, shy, knowledgeable), length of tenure farming and in the group (both recent entries and long-term operators), facilitator recommendation, and willingness to be interviewed. The interviews were approximately one hour in length and held in a location most convenient for the interviewees, usually around their kitchen tables. Interviews were recorded with informed consent and the recordings were anonymised and stored on the University of Exeter server. The aim in using this method was to supplement the participant observations by following up on interactions that evidenced the elements of the conceptual framework. In particular, they explored the participants' perception of how modelling contributed to their learning, role models within the group and whether/how self-reflexivity was promoted through their interactions with peers. Thematic analysis of the interviews was performed through (at least) double review with detailed timestamped notes, quoting and listening again for context, tone of voice, pauses, etc. [51].

Table 1. Farmer discussion groups followed for participant observation in South West England.

Type	Meeting Frequency	Composition	Public/Private	Life Span	Format	Structure
Beef/Sheep A	Approx. 6x per year	Approx. 25 of 500+ email list	Semi-Public	6 years	Expert presentation/ farm walk	Organisation-led/ Coordinator
Beef/Sheep B	Approx. 3x per year	Approx. 15 of 500+ email list	Semi-Public	6 years	Expert presentation/ farm walk	Organisation-led/ Coordinator
Dairy A	7x per year	15 farms	Private	20+ years	Farm walk/ benchmark	Facilitator-led
Dairy B	11x per year	15 farms	Private	17 years	Farm walk/ benchmark	Facilitator-led
Dairy C	5x per year	10 farms	Private	13 years	Farm walk/ benchmark	Facilitator-led
Dairy D	4x per year	Approx. 15 members, 100+ email list	Semi-Public	1 year	Expert presentation/ farm walk	Organisation-led/ Facilitator
Veg Growers	10x per year	Approx. 20–25 of 100+ email list	Semi-Public	3 years	Farm walk	Farmer-led

Sample: Participant observation was repeatedly conducted of seven groups, which maintained learning as one of their key objectives. Due to funding and travel limitations of the study, all were located in Devon, Cornwall, Somerset or Dorset. Despite the predominance of grazing livestock farms in the South West [52], there were more dairy FDGs identified in the scoping exercise than beef and sheep or arable and horticulture. Thus, four dairy groups were approached and agreed to participate, as well as two beef and sheep groups and one group composed of small-scale vegetable growers. Dairy D and Beef/Sheep A were women's groups and Beef/Sheep B was for young farmers, whilst Dairy A and C were predominantly male-attended. Dairy B had 3–4 women who regularly attended on behalf of the farm, and the Veg Growers was relatively evenly split in terms of gender. The private groups with stable, limited memberships were all funded by an annual fee of between £250 and £350 per farm, which covered the facilitators' time, meeting costs and annual trip. The semi-public groups were open to all members signed up to an email list, managed by an organisation to which a nominal fee of between £5 and £10 was paid per meeting, or independently amongst the farmers for no fee. Only a small number of the semi-public groups' possible participants attended each meeting, and the general public would not have been aware of or invited to any of the groups' meetings as they were not publicised beyond the members. Groups Dairy A–C benchmark against each other, meaning they complete and share full financial breakdowns with key performance indicators (KPIs). Dairy A and C were autumn-block calvers (meaning they sync their herd to calve ideally within a 6-week block in late August–October) and Dairy B were spring-block calvers (so their intense calving period occurs in February–March). Gaining access to all the groups' (semi-)privately-held meetings was very much an issue, so the sample was additionally influenced by the reliance on Gatekeepers' approval and assistance. Table 1 shows a breakdown of the FDGs followed.

For general context as to how the FDGs' meetings functioned, the expert presentation groups (Beef/Sheep A and B; Dairy D) convened in pub function rooms, cafés or farm offices for 2–3 h during the day or evening and listened to a presentation about a select topic (e.g., mental health). Questions were asked of the presenter and then lunch/supper/cake and tea were served and the participants had time to socialise. Alternatively, a farm walk led by the host was the focus of the meeting rather than an expert presentation. The benchmarking groups (Dairy A–C) all met during the day for 3–4 h on a fellow member's farm or an external farm that highlighted a particular learning point (e.g., labour, efficiency, size, grass utilisation). Members either brought a packed lunch or went to a pub for lunch after the farm walk led by the host and discussion facilitated by the facilitator. The Veg Growers

met on each other's farms in the evening for 3+ hours and everyone brought a dish to share for a potluck following the farm walk led by the host and/or discussion led by either the host or farmer coordinators. Groups Beef/Sheep A and B and Dairy A–D suggested ideas for meeting topics, which the facilitators/coordinators tried to accommodate with an appropriate host/expert and agenda. The Veg Growers democratically decided on a season of topics and asked for volunteers within the membership to host for each meeting theme. None of the FDGs were implementing set programmes with externally imposed objectives; learning, collaboration, support, improved profitability and efficiency were some of the internal objectives of the groups.

4. Results

Whilst the FDGs shared many similarities, they also varied in context, group dynamics, history, etc. As emphasised in previous studies regarding FDGs [53], a limited size of between 15 and 20 participants seemed to function best in reducing the risk of fragmented side discussions, though this often happened for limited segments, e.g., when the group paused to examine the milking parlour, silage pit, propagation hoop house, etc. Maintaining a unified core discussion during farm walks often depended on both the presentation style of the host (e.g., engaging, asking for constructive criticism, debating how to do things differently) and active monitoring and reconvening by the facilitator/coordinator. The latter reiterates another structural component previously found to be crucial in promoting effective learning in FDGs, facilitation by a well-qualified and trusted facilitator who can foster farmer-led discussion on farmer-initiated topics [54]. Four groups (Dairy A–D) had professional facilitators leading each meeting, who acted not only as timekeepers and agenda leaders to keep things on track, but they also intervened with questions or examples to stimulate the discussion, presented KPIs if members submitted some before each meeting and employed analytical tools (e.g., SWOT analysis (strengths, weaknesses, opportunities and threats)) in instances where the host farmer asked for group input into a major decision, such as succession planning or investing in a new building. The coordinator for Beef/Sheep A and B acted more as a timekeeper and agenda leader but would interject questions if the participants were struggling to formulate them or a fresh line of inquiry was needed. The Veg Growers, being in the early stages of their group, were still undergoing discussions about who should “lead” as some were hesitant to host because they were nervous to be the focal point and present on the farm walk. The farmers co-coordinating the email list and organising the hosts for each topic, however, were hesitant from a democratic standpoint to always lead the discussion.

Farmers overwhelmingly spoke very positively about the FDGs “getting us off the farm” and collaborating, even though they required investment of both time and money. Sometimes their participation had spanned several decades, which suggested they saw continued membership and attendance as “worth it”. When asked why, they spoke about the social element and the chance to “have a nosy” on other people's farms and see how they do things; but invariably, a key driver of their engagement was learning.

The following results provide a sample of the data collected from the participant observation and semi-structured interviews regarding the three elements of social learning theory explored. As an ethnographic approach was utilised, the examples were selectively chosen based on the richness of the event in demonstrating the elements and thick descriptions of the context have been provided as much as possible [50].

4.1. Behaviour Modelling

Almost every FDG meeting attended involved knowledge sharing and learning opportunities between participants through behaviour modelling. If the format included a host farm presentation and/or a farm walk, behaviour modelling was inherently a key component of the tour. The host farmer would show and/or explain how s/he does certain practices (e.g., intercropping, irrigation, beef finishing), thinks about processes (e.g., self-feeding from silage clamps, scraping yards, water trough placement in subdivided fields), or manages staff in carrying out tasks, decisions, etc. (e.g.,

recruitment and training, tracking colostrum administration, monitoring calf signs for pneumonia). Observation of these modelled behaviours may accelerate learning if the participants meaningfully perceive them (attention) and code or relate the information to their previous knowledge and experience (retention). Thus, participants can absorb novel information without directly doing or practising it (vicarious learning) [42]. This was often the only way in which learning happened during the short meetings rather than enactive learning (learning by doing) or production where the mental representation of the information was put into practice, although tactile engagement was witnessed multiple times, e.g., silage handling and smelling [55]. Motivation to devote time and interest to observing what is modelled will also influence learning, which may vary based on factors such as relevance, financial impact, complexity or prior experience of the information, process or practice.

Dairy A–C, as groups focussed on improving their grass-fed dairying systems of various sizes, utilised farm walks and formal discussion beforehand to prep the members about issues the host wanted feedback on as well as afterwards to debate different options for change. Key practices I saw explained at most meetings of these groups were calf rearing, involving questions around type of shed (concrete walls versus wood, hay bales stacked to create a den within an open barn, open-faced with tarps to pull down against rain and wind), location (separate sheds from the cow barns to avoid disease transmission, small or large pens for different groups), feeding (milk powder quantity, equipment) and weaning (approximate weight/age when transfer outside, “cake” or supplemental feed provided). Levels of cake bought into these low-input systems and fed to heifers and cows were a constant concern, fluctuating based on visual assessment of body condition. Many expressed hesitations at reducing kg of cake fed per day per animal to low levels reported by others in case it would negatively impact milk production, fertility, etc. Artificial insemination (AI) was another incredibly important practice described by the host in terms of weeks spent, number of semen straws used, percentage of sexed semen used, conception rates, etc. Participants’ attention appeared quite high as the practices explained were common amongst their farms, so they were meaningfully engaging with what was being modelled and relating it to their previous experience using similar or different techniques (retention). Their motivation to dedicate time and interest to these modelled practices would have been positively influenced by the direct financial benefits posed, whether cost savings, increased efficiency or long-term profitability through improved herd health and fertility, for instance. I heard other factors outweighing financial concerns, however, that influenced the farmers’ attention and motivation to engage with modelled behaviours—animal welfare, work–life balance, labour capabilities, etc.

Beef/Sheep A and B meetings with expert presentations involved minimal behaviour modelling, especially between participants as most explanation flowed from the expert to the farmers (e.g., mental health, large-scale veg production and processing). One notable exception, however, was when Beef/Sheep B visited a wool processing facility where they saw a demonstration from an expert grader on how to assess their wool for discolouration (highest price per kg for white wool rather than yellow, grey or black) and stains, clumping and dirtiness (e.g., straw, dung) (31 October 2018). The farmers had the motivation to dedicate time and effort to learning how the grading process worked because wool as a by-product must not be disposed of on-farm without a license; therefore, most producers sell what they annually shear to the British Wool Board. As the expert explained, if they must sell it, they should try to receive the best possible price rather than disregarding wool maintenance as worthless since the price per kg difference by grade could add up. Thus, financial incentive as an outcome expectation if the wool was maintained to a higher grade seemed to heighten attention, whereas at the outset I heard some dismissive comments and jokes about just burning it as opposed to paying the haulage fee and receiving so little in return. Additionally, the expert showed wool bundles of each grade, had the participants feel and look closely at each and then practice whether they could identify the probable grade for when they were assessing their own flock. That opportunity for enactive learning was particularly useful for retention and production rather than simply hearing the explanation and trying to apply it on-farm in future.

Dairy D, as a new group, was interesting to observe as to how the participants engaged with each other and the experts/facilitator. Their first meeting involved an expert presentation by a veterinarian around the subject of calf health (28 November 2018). In speaking about the vital need to administer colostrum within two hours of calving, the participants started debating what the best method was. Five of the participants who had been actively farming for a number of years and were owner/operators in their dairy businesses were quite confident sharing their thoughts, past experience and practice techniques. Five participants were relief milkers and/or calf rearers who had come along with their employer; one who had been working on the same farm for a few years engaged in the discussion more by nodding and agreeing with comments, whilst the others sat quietly and did not demonstrate any familiarity with the topic. After about five minutes of discussion, the facilitator pulled up a plastic tube with a bag at the top and a ring about 2/3 of the way up on the tube. *“Can anyone tell me what this is for?”* A few of the experienced farmers answered simultaneously that it represented the depth to which the tube needs to be inserted to make sure the colostrum is properly reaching the calf’s leaky ruminant stomach. Based on plenty of expressions of *“oh really?”* and *“ah okay”* around the room, it sounded as though that was new vicarious learning around a previously implemented practice for many and there was meaningful perception of the modelled action (attention). They did not have the opportunity to put the learning into practice right then and instead would have to wait until the next calving season. By relating it to their previous knowledge (retention), however, certain participants should be able to perform that learnt technique when necessary, drawing upon the large amount of prior experience they have in administering colostrum (production). Due to the extreme consequence of piercing the calf’s stomach if the tube is inserted too far though, those unfamiliar with the practice may not be confident in translating the knowledge gained into practice straight away, having only learned vicariously through explanation rather than an actual demonstration on a calf. Given the importance of administering colostrum correctly for calf health and future fertility, the overall motivation appeared quite high to learn the modelled technique.

The Veg Growers always incorporated behaviour modelling into their meetings. Having started with eight people sharing books, videos and experience about how to improve crop establishment, pest management, soil fertility, etc., the group had expanded hugely over the course of a few years. Thus, the group had developed the farm walk and potlock structure for their meetings to accommodate a larger group and learn from each other’s operations. At their monthly meetings, I heard different approaches to intercropping explained, supplier recommendations offered, and community-supported agriculture (CSA) subscriptions compared for cost, delivery or pick-up locations, duration (e.g., all-year round or seasonal, which also influenced whether items were bought in to fill the hungry gap in early spring before crops were ready to harvest), number of items included, etc. I saw farmers demonstrate equipment used for spacing seeds along beds, irrigation, plowing, harvesting and weed control, which incited many shared examples of alternate techniques, processes and equipment from other participants. There was an interesting instance of behaviour modelling around salad washing (2 April 2019). As premium prices are sought for leaves that are undamaged and visually appealing for primary plating by chefs, the washing process needs to be extremely careful whilst also time efficient. The host farmer led us to that station on the farm and explained their process of triple rinsing, but the problem was the leaves were being transferred too many times between different crates. Others chimed in about their use of mesh netting to submerge the leaves, slanted tables to lay out the leaves and hose them down, and spinning slatted buckets. Then a grower interjected, *“I repurposed wooden box frames and tacked wire mesh into the bottom. So when I rinse the leaves, the dirt and everything settles to the bottom or falls out. You just give it a good shake side to side to sift it out, rinse and repeat.”* The host responded enthusiastically as did a few others, asking more about the materials and any drawbacks (attention). They all had prior experience to draw on (retention) to assist with production, but the motivation to vicariously learn from her modelled practice was the simplicity of keeping the leaves in one container, thereby reducing labour time and potential damage from transfer leading to financial disbenefits.

4.2. Role Modelling

Role modelling was also identified throughout the FDGs' interactions, though in comparison to the plethora of examples of behaviour modelling available from the farm walks (which specifically aim to promote demonstration and explanation by peer hosts), there were fewer examples from each group. The results will be presented by the factors under this element. Logically, there is overlap between the social learning elements as to factors that impact learning. Motivation to learn from peers' modelled actions is also a key component of this element, influenced by outcome expectations (what one anticipates will be the outcome of actions) based on one's own experiences as well as the perceived positive or negative feedback received by a role model [42]. If one had or knows of a terrible experience with a practice but the role model reaped significant rewards from it, for instance, one may have high motivation to learn how s/he did it differently or low motivation due to resistance informed by the poor former result. Estimation of the model's competence and prestige from outcome successes and failures, e.g., more or less successful, more or less clever, different context, etc., may also influence the perceived functional value and attention given to his/her modelled actions [42]. This may then influence self-efficacy, or one's beliefs about his/her capabilities to learn or perform actions at designated levels [47], in relation to the person modelling the action. Social norms and shared values, relevant to self-reflexivity as well, may also influence learning from peer modelling as people may have low motivation or perceive low functional value in and therefore pay little attention to information purveyed by someone seen to have drastically divergent values, e.g., low cleanliness or animal welfare standards [56].

Motivation to learn from peers based on the perceived positive or negative reinforcement incurred from modelled actions, decisions or processes was demonstrated in various cases. Dairy B visited one of the member's farms who had won a prestigious award from a large milk buyer the year before, which the participants brought up a few times in the discussion around whether he should change things he had asked about on the farm walk (25 April 2019). The group reinforced that he "must be doing something right" to receive that positive feedback, in addition to continued profitability, farm expansion, excellent grass growth, high fertility rates and good cow condition, suggesting he was a role model other members looked to for examples. During a meeting on irrigation, the Veg Growers also clearly referred to a member considered to be a particularly proficient role model on that topic (2 April 2019). The host explained his system of rolling out tubing along each bed for drip irrigation, for which he and other trainees working on the farm provided negative feedback—it took two people to complete, the tubes always got tangled and it was too time-consuming. In contrast, the host praised the role model member's system as much better—the tubes were affixed to a wooden bar and could be easily unrolled along the length of the beds. Growers who had worked on her farm as trainees positively reinforced the perception that it was simple and efficient, enhancing the members' motivation to learn that modelled action.

A negative feedback example, however, was observed at a Dairy C meeting. The meeting was hosted at a young new member's operation where he runs a flying herd (buying in heifers) rather than rearing his own replacement heifers as done in closed herds (7 November 2018). There were quite a few farmers with closed herds at the meeting who had been in the business for over 30 years, and their concerned response to his replacement strategy centred around disease risk, i.e., introducing bovine tuberculosis (bTB) into the herd. Partly, this demonstrated adherence to the social norm of disease risk avoidance, but the participants cited many examples of external peers who had received extremely negative feedback in the form of financial disbenefits from the resultant "shutdown" of their herds. Upon testing positive for bTB, the Government "shuts the herd down" or imposes restrictions on the movement of cattle between herds to try to control the spread of the disease. Shutdown also imposes extensive testing requirements, which means significant time, money and opportunity costs to the operation. When they challenged the host to reconsider his approach due to those outcome expectations and he dismissed their concerns with a shrug and "it's all luck anyway" and "I'm making money this way", they looked incredulous. A few older farmers came up to me during lunch and commented

about how radical his approach was, and that “sometimes these groups are good to show you what you don’t want to do [laughter]” (Conversation with farmer, Dairy C, 7 November 2018). This perceived negative reinforcement of the role model’s practice suggested nobody would be changing their thinking to follow his example. Following up with the facilitator months later though, he commented that some members may have reacted viscerally in the moment (particularly amongst peers abiding by the same norms), but they may have ruminated on it and changed their thinking after considering the numbers and how much less it cost the host to buy in replacements than rear them (Conversation with Facilitator, Dairy C). Thus, the motivation to capitalise on the incentive of increased profitability from that approach may ultimately outweigh the shared value of risk minimisation and possibility of incurring negative outcomes.

Regarding estimation of the model’s competence and prestige, Dairy B visited a farm in the Midlands for their away trip who was considered to be an industry leader in staff recruitment and employee management (17 September 2019). The farmer’s ability to successfully recruit individuals from outside the industry through attractive advertisements, strong training programmes and career progression was praised as well as extensively inquired about by the members. Some expressed their frustrations and pitfalls with recruitment and staff management, suggesting they saw the host as more competent at that process and practice than they were. Similarly, Beef/Sheep A toured a beef finishing unit, which was larger and more profitable than any of their operations (25 October 2019). The participants praised the host’s efficiency in feed utilisation over a short period of time and finishing weight as impressive and joked about whether he would be interested in buying any of their cattle to finish. A farmer from Dairy C referenced one of the people who he would consider to be a role model within the group. “[Farmer X] is someone that I really wish would speak more because . . . you don’t know for sure, but he seems to be very successful, he’s expanding, he’s doing things a little bit different . . . but he’s a very quiet chap, so he’s someone I would love to tap into a bit more. I guess it’s people who are doing a really good job and just don’t like putting their hand up and speaking out loud.” (Interview, Dairy C, 5 February 2019). He suggested that the facilitator has a big part to play in “developing him as a person within the group” and being aware in drawing out people who have valuable contributions to make. Thus, many people within and external to the FDGs were regarded as role models with competence and prestige, positively influencing members’ motivation to learn from their modelled actions, thinking and processes.

Self-efficacy’s impact on the FDG participants’ learning was identified through their discussions about implementing a different course of action or thinking about things differently as modelled and their perceived capabilities to do so. The Veg Growers, for instance, had a meeting about community engagement at a farm with a thriving volunteer programme (5 March 2019). Many of the growers were asking how they were able to attract so many people to come and dedicate free labour. The lead grower highlighted the farm’s social media engagement as being a key factor in their successful recruitment and maintenance of volunteer support. Most of the approximately 15 participants sitting around the table were under 35 years of age and about half looked mystified and the other half nodded emphatically. The discussion which ensued revealed the participants’ divergent technological skills. One grower in her 20s commented that Twitter was a great way to announce volunteer days and Instagram kept people engaged if one posted frequent updates of what was being done or growing on the farm with aesthetically pleasing pictures. Another grower in her 20s commented that she did not understand either of those platforms and barely understood how to use a computer. Thus, her self-efficacy was very low and others in the group openly admitted resistance to wanting to learn about technology because they felt so ill-equipped and incapable of using it. This negatively impacted their motivation to learn from the host’s process for volunteer engagement.

In interviews with the farmers, many commented that one of things they valued about their FDG participation was gaining confidence through interacting with their peers. “If they can do it, so can I” was a repeated statement, demonstrating self-efficacy in reference to the role models’ competence and outcomes. One interview with a farming couple from Somerset in Dairy A specifically highlighted how interactions with FDG peers may improve self-efficacy. The male partner spoke very passionately

about the need to surround yourself with role models in terms of being of a mind-set that strives for growth and is willing to take on risks. He and his partner were in the process of expanding their business, had taken on a large amount of debt for the first time, and he commented, “I respect certain peers who I interact with, many within our discussion group . . . I really respect their opinion, and they respect you asking sometimes. So I was talking to another farmer (in the group) last night, you know, on quite a confidential level about interest rates—and you interact and surround yourself by those people which give you confidence to do that [risk-taking] . . . and the problem is, a lot of farmers don’t do that.” (Interview, Dairy A, 12 March 2019) (emphasis added). This demonstrates strong estimation of his role models’ competence and high motivation to seek assistance from them on higher-level cognitive processes surrounding his business decision making. It also transitions nicely into the self-reflexivity results as he attributes development of his awareness and assessment of the way he thinks about his thinking (attitude and approach toward risk), or metacognitive development, to interaction with his peers.

4.3. Self-Reflexivity

If overt factors for the role modelling element were evidenced less than behaviour modelling, those demonstrating self-reflexivity were potentially even less frequent and explicit. The process of critically questioning one’s ideas, beliefs, attitudes, assumptions, processes and practices in relation to what has been modelled may happen purely internally and therefore not have been vocalised at the meeting, it may not have been instantaneous but rather a delayed realisation after much consideration, or it may have been a gradual shift not specifically attributable to any one piece of information. Thus, simply because participants did not speak reflexively about their thinking in light of the modelled behaviours did not necessarily mean self-reflexivity was not occurring. Nevertheless, challenging interactions around the reasons why peers do or do not act or think in certain ways did elicit critical questioning by participants as to beliefs, assumptions and attitudes influencing their cognitive processing, outcome expectations and self-efficacy and whether they may want to change. The FDGs studied all involved participants asking questions of the expert or host farmer to varying extents for clarification and more information around different practices, processes and thoughts. However, the depth of sharing and discussion between the participants about their individualised practices, processes and particularly beliefs, values, feelings and judgments varied between the groups.

Reed et al. [41] point to the difference between “information transmission” and “deliberation” as types of social interaction through which learning may occur. With regard to the latter, Rist et al. [57] (p. 23) emphasise that social learning is a process through which “different actors can deliberate and negotiate rules, norms and power relations”, allowing for learning and change beyond just the individual to the wider group. Fry and Thieme highlight the importance of the discursive process through which shared meanings or “shared cognitions” are co-constructed by the participants, enabled by “trust, cooperation, empathy, intuition and inspiration” built up and employed throughout the learning interactions [58] (p. 186). In these spaces for “communicative action” [59], the “actors involved have to be willing and able to negotiate as equals in an open communicative process, where *diversity* and *conflict* are driving forces for development and social learning” [58] (p. 186, emphasis added). Similarly, Beers et al. [7] found that significant learning resulted from what they label antithetic interactions or those involving opposition and debate, thereby highlighting the importance of critical discourse in not only promoting but evidencing self-reflexivity. The groups’ structures, norms, guidance and expectations for capacity and skill development to engage in critical discourse with their peers that challenges the reasons behind their thoughts, processes and practices were found to be instrumental in promoting self-reflexivity.

An example from Dairy A involved a discussion about staff management (12 December 2018). Amongst joking between the participants (“can I sack my old man?”), the host farmer made a derisive comment about the lack of good labour supply and that even if you are loyal to them, it might not be extended back. They may get bored after a few years and leave. The facilitator then asked an employee of the host who was sitting in the meeting, “What makes you loyal as an employee to your

employer?" Her answer was progression: "I don't want to stay anywhere I'm not progressing". This sparked an interesting comment from another farmer then about progression maybe not being everyone's goal—one of his employees has milked cows for him for over 20 years and values the steadiness of routine and the achievement of always being on time. Another farmer agreed, "Not everyone can be a manager". The host then conceded, "I guess what's key is understanding what staff want". He related this to the personality-type exercise the group had done at a former meeting, which he had then carried out with his staff. In finding out that certain people need to engage in pleasantries (e.g., about their weekends, families, etc.) before diving into speaking about the day's work tasks, he had reflexively assessed his management style. His attitude towards just wanting to get on with the work and the assumption staff felt the same in fact did not match their need to feel valued. Thus, he decided to make a conscious effort to change his attitude and behaviour to accommodate the different personality types/communication needs of his staff by engaging every morning in short catchups.

Modelled self-reflexivity was also observed in a Veg Growers' meeting (11 September 2018). Group members were invited to bring their favourite hand tools to the host farm to demonstrate what worked well in different contexts, saved time, cost a reasonable amount and improved efficiency. The host led us to a shed on the farm walk that was close to the beds, explaining her recent revelation that she should strategically store all the tools frequently needed in there rather than the main shed on the farm. This had stemmed from critically questioning her daily routines and realising how much time she was wasting walking across the yard multiple times throughout the day to get tools. Based on that example, many participants then spoke reflexively in front of the group as well as to each other about how they plan their space and how much time they could save if they put their supplies in more strategic places. That reaction may seem like common sense, making less work for themselves; however, if viewed from the perspective of a self-aware process of scrutiny and continuously questioning not just how but why one is doing something, the growers' engagement with the modelled behaviour relates to reducing inefficiency within their operations and willingness to change their setup rather than keep things in the same place simply because "we've always done it that way". In other meetings, I also heard growers engaging in debates based on positive or negative experience, literature, online forums and videos to inform their conflicting perspectives, e.g., challenging each other's pairing decisions for intercropping, soil and pest management techniques, composting, etc.

Social norms and values conflicts led to self-reflexivity in some of the interactions I observed between Dairy B participants. For instance, the changing way in which retailers are requiring handling of bull calves by their dairy suppliers elicited differing positions about public perception (28 March 2019). One of the major milk buyers in the UK is banning farmers from eliminating bull calves on-farm; instead, they must either be raised for beef on-farm or sold off. A few members complained about "militant vegans" creating smear campaigns of dairy farmers as contributing to that new policy, which many viewed as general misunderstanding by the public as to the economic inefficiency of keeping something (i.e., feeding, vaccinating, etc.) for which there was such a low market return. Another member, however, argued that public sentiment is extremely important to their businesses and that a wider industry move in that direction was only a matter of time. They were challenged to reconsider their assumption that investing in bull calves was not worth it by examples of dairy-beef collaborations that offered at least three times the amount per calf than livestock markets and the promise of a guaranteed buyer.

Another Dairy B meeting involved a discussion about the host farmer possibly expanding the operation by renting neighbouring fields. Opportunities to double one's grazing platform rarely arise, so he was struggling with the presumption that one must jump at the chance; but that would mean a larger herd and more work (25 April 2019). He had recently had a health scare and it made him and his partner realise they needed to reassess where they were going with the business and how they were going to get there. Having received his comparable farm profit (CFP) report at the start of the meeting so everyone had an idea what the business' figures were, the facilitator initiated an exercise where the group questioned him about his future goals. He spoke about wanting to provide for his

kids' education, continue to run a profitable dairy, but he also wanted to get the right staff in place so he could learn how to step away a bit and maybe take day trips with his partner. One of his peers argued passionately, *"Why would you expand when you're wanting to work less? We all need to live each day as if it was our last ... you don't want any wishes that you had done more than work on your deathbed. No regrets"*. This appeared to resonate with the host in critically questioning whether his idea of expanding matched with his values around family and wellbeing; however, he offered the counterargument of loving what he does and the fear of retiring and then losing one's purpose. That exchange shows how critical discourse with a peer may lead to self-reflexivity about one's cognitive processing and highlight how one's different values may conflict in certain situations.

The critical discourse observed at a Dairy C meeting exemplified such conflict between the host's values informing his decisions and the need for reflexivity (23 January 2019). The group and I sat around the host's living room drinking tea and coffee as he talked us through his CFP report. It was quite lopsided with costs incurred and debt. The ten members present dug for information about his decisions that had contributed to those numbers. He admitted that he still used a mixer wagon even though he had a large grazing platform; being a group of low-input producers, his peers challenged that decision. Additionally, he revealed his guilty habit of buying equipment and livestock on impulse. A significant stress in the immediate future was that he had a hefty loan payment due to the bank in less than four months. The host admitted he had booked 100 cows to be sold at auction before the due date, but he was not sure about selling them. The group inquired about different reasons why he might hesitate; in fact, it was because they were the first crossbreeds he had ever bred himself and he was sentimentally attached to them even though they were underperforming compared to his subsequent crossbreeds. His peers immediately challenged the contradiction behind what he was proposing—potentially losing his farm and not being able to support his partner and four small children by choosing not to sell assets that could easily make the payment amount because he felt sad to see them go. They argued vehemently that he needed to reassess his reasoning and how it reflected (or not) his values and commitment to his family. The conclusion was that he needed to critically evaluate his outlook on the herd using KPIs and clear goals of what he wants (e.g., cow size, calving block, cross, productivity), weeding out those which do not meet clear criteria.

The Beef/Sheep A and B groups involved either an expert or a host farmer presenting to the participants about a relevant topic or their operation. At the expert-led meetings, I observed no interaction amongst the participants during the meeting; the interactions were instead in the form of questions to the expert for clarification or more information. It was only afterwards over the buffet dinner, lunch or at the bar I heard conversations between individuals or in small groups. The topics discussed related to the presentation for at least some of the time (e.g., electronic tax filings, mental health warning signs), but they also branched off into general farming issues, sharing how they were handling young stock, bTB testing, planting, manure spreading, etc. Following the electronic tax filing presentation, for instance, I overheard two producers lamenting how complicated the system appeared, demonstrating low self-efficacy, but further comments revealed their general aversion to technology. Thus, their attitude towards technology was being challenged by the regulatory change requiring online filing, which may have led to self-reflexivity as to whether technology should have a role to play in their operation or whether they could learn how to use it rather than resist. This was, however, not vocalised.

The farmer host-led meetings included interaction between the host and participants and between the participants about what was being modelled to a more limited extent. For instance, Beef/Sheep A toured a large vegetable producer and processor's operation, which the coordinator clarified was intended to demonstrate the massive scale a family farm had reached through modernisation and investment (21 February 2019). In response to a question about whether and how Brexit would impact his business, the host gave a very dismissive answer about people still needing to eat, so demand would not suffer, and no concern about changing trade conditions. None of the beef and sheep farmers pushed back, though they are potentially going to become subject to tariffs for large export markets,

e.g., lamb to France. Rather, the follow-up comments suggested his modelling reinforced some group members' beliefs and attitudes about negative trade projections being scare mongering. There was no more discussion and the group moved on to a new topic. For the person who asked the question and others in the group who may have felt differently (that Brexit does pose negative implications) but did not comment, that interaction may have caused some self-reflexivity about their beliefs. It was, however, not vocalised. Or it may have lowered their estimation of the role model's competence based on his divergent attitude from their own. From either perspective though, self-reflexivity was not demonstrated based on the modelled behaviour.

This lack of discussion observed between the Beef/Sheep group members about conflicting thoughts, beliefs, processes and practices is certainly not meant to suggest it never happens. Additionally, contradicting a host external to the group may have been difficult as a guest on his farm and Brexit remains a very divisive topic, which by the time of that meeting had been argued over for over two and a half years. Nevertheless, the group's structure, norms, guidance and expectations were not focussed on promoting engagement in critical discourse around differing ways in which the participants act, think or feel. As this fosters critical questioning of oneself as well as others, those FDGs' interactions were found to be less likely to promote self-reflexivity.

Benchmarking groups, on the other hand, have an annual meeting where they actively go through each farm's key performance indicators (KPIs) and critically discuss all costs, savings, profits and losses, which decisions could have been made differently and gather ideas for change from each other's suggestions and experiences. In talking with a founding member of Dairy B, the process of developing critical discourse within the group and capacity building over time to engage in self-reflexivity was apparent. *"It was strange to start with ... well, we were all new to [benchmarking], we didn't quite know what to expect ... uh, we'd never discussed financial details with other farmers or be [sic.] open. Farmers ... if they discuss financial things, uh, normally you don't believe a word of what they're saying [laughter], but with this group, as the group evolved and we grew to trust each other and we shared our figures, none of us are in competition with each other. But we're all selling a product to whoever ... and if we could help each other, when we go through the CFPs, and Joe Bloggs' has only got 0.2 of a penny for insurance and mine's 0.8, we want to know why his is so much lower and why mine's so much higher. And there are a lot of figures like that that we had no idea ... you know, farming—you're quite insular. And you've no idea whether it's a good price or a bad price what you're paying, you just pay insurance, for example, when the renewal comes around. You never questioned it ... but we learnt to question all our costs. And as we sort of grew to trust each other, we shared more and more financial details, and farming techniques. Whenever you go to a farm, there's always something you pick up that they're doing differently. You might not do it exactly the same when you come back [home to the farm], but you can adapt it"* (Interview, Dairy B, 1 July 2019).

Having observed the three FDGs' benchmarking meetings, they were strategically structured to promote farmers challenging each other to reflect on what they had done over the past year and to be self-reflexive about "why do I do what I do?" from the standpoint of underlying beliefs, values, attitudes and assumptions. As stated by the Dairy B group member interviewed above, critical discourse was a norm that had developed over time within the group, so members expected this type of interaction. For example, Dairy B entered into a debate about how and when to dry cows off towards the end of their lactation cycle and the facilitator inserted an example from New Zealand (31 January 2019). Some in the group argued adamantly in favour of the benefits to the herd of having a stark cut-off for a month, but others argued about the higher availability of extra feed during that period in NZ versus the UK and the risk a month without milk sales introduces to the business' profitability. *"What if you have loan payments to make? How do you survive?"* A well-seasoned farmer in the group responded, *"Well, you should be used to flux. You should have some [money] squirreled away from periods when the milk price was high"*. This revealed important beliefs, values and assumptions underlying decision making, challenging others to critically assess their prudence, anticipation of change and forward-thinking risk management and planning. These types of interactions demonstrated FDG participants' critical skills

to be able to challenge their own and others' tacit assumptions about potentially taken-for-granted behaviours and cognitions within their businesses.

Dairy D was not a benchmarking group, however, and had newly formed the year I followed their meetings. Thus, the participants did not have an extensive shared history of collaboration with each other or basis of trust for not just sharing information, but critically challenging each other's assumptions and attitudes underpinning their thoughts, processes and practices. At their second meeting, the facilitator led us through an exercise where we assessed our values, goals and short-/long-term strategies for accomplishing them (27 March 2019). That exercise structured the discussion specifically to elicit reflexive thinking from the participants about what they are aiming to do in their businesses as well as personal lives, critically question the reasons behind those goals and share with each other. There were some very revealing exchanges that stemmed from that exercise, including one where two younger generation daughters expressed their desire to have been asked whether they wanted to be part of the farm succession vision for the operation rather than it automatically going to their brothers. One older generation mother then expressed her self-reflexive questions about whether her and her partner's values (e.g., equality, family harmony, etc.) had adequately factored into the decisions around how their farm succession plan would be carried out. This demonstrates how discussion tools and techniques may be used to foster self-reflexivity within FDGs.

5. Discussion

Thus, two of the social learning elements were identified throughout each of the FDGs' interactions. All FDGs promoted behaviour modelling and role modelling, involving interaction between the individuals and their environment leading to cognitive processing and learning about different options and opportunities for change based on modelled thoughts, beliefs, attitudes and actions. Observation translated into learning from behaviour modelling was found to depend on the participants' motivation to pay attention and retain the information based on factors like relevance, complexity, perceived (dis)benefits (e.g., cost savings, increased efficiency or long-term profitability), social concerns, personal and staff wellbeing, animal welfare, etc. This reinforces many studies that have found that demonstration or behaviour modelling by peers is an effective way to promote learning, but different ways in which the learning context is setup, type of information and how it is purveyed have an impact on the learning process [21]. Farmers should be as involved as possible in directing the learning topics to increase ownership of the process and facilitators should draw out the knowledge in the room, bringing in external experts if expertise is needed, but the groups' participation norms should be developed to expect active exchange between peers about the shared information and modelled behaviours [15].

With regard to role modelling, examples of learners estimating the model's positive or negative reinforcement for performing the action showed that they were informed, again, by financial gains or losses, external recognition and goal attainment, good employee feedback, simplicity of practice, etc. Estimation of models' competence and prestige also impacted the observers' motivation to learn from him/her, self-efficacy regarding their comparative capabilities to effectively implement what was modelled and outcome expectations based on what the model's outcomes were. These estimations may be difficult to deduce whether and how they are happening unless learners vocalise or demonstrate something related to their cognitive processing. Thus, observations of how learners evidenced the role modelling element of social learning may only represent a small fraction of role model estimations happening internally. As found by Prager and Creaney [15] in the context of FDGs and monitor farms, relationship building and trust between the participants are crucial to effectuate sharing and learning. These underpinning relational factors were important to the interactions amongst the FDG participants in this study as well, but they may specifically be considered foundational in the group members' estimations of role models, e.g., longer-term relationships may provide a better overview of people's history of positive/negative feedback, trust that the person has good intentions in presenting certain practices, etc.

The self-reflexivity element of social learning, however, was not observed within all the groups. The interactions amongst the group members in Dairy A–D and the Veg Growers were structured in different ways to foster self-reflexivity by the participants. The Veg Growers example of modelled reflexivity by the host appeared to be a straightforward way to encourage others to engage in similar self-reflexivity around a shared topic of interest. Additionally, tools and techniques such as the vision and goal-setting exercise facilitated at the Dairy D meeting, specifically aimed at fostering critical questioning of one's current practices and possible strategies for change, may help promote self-reflexivity amongst participants. Finally, developing the groups' capacity for critical discourse to the point where it becomes a norm and expectation in terms of how they engage with each other was demonstrated by Dairy A–C in challenging each other's assumptions, values conflicts, attitudes and beliefs behind shared thoughts, processes and practices. Structuring FDG meetings around an expert presentation with little or no purposeful engagement between participants built in seemed to be least effective at promoting interactions that would foster self-reflexivity, as seen in the Beef/Sheep A and B groups. Additionally, their farm walks involving questioning of the hosts for clarification and information, low amounts of sharing between participants as to different approaches they take towards common issues, and not challenging each other's assumptions, attitudes and beliefs were still valuable for learning through behaviour modelling, but they did not produce examples of self-reflexivity. Again, internal reflexivity may have been happening from what was modelled and observed, but it was not overtly discussed and/or brought out through critical discourse with their peers.

Overall, all elements of social learning were not found to be occurring in the FDGs, as evidence of self-reflexivity was absent from the Beef/Sheep groups. That element was found to be promoted by fostering critical discourse about each other's attitudes, assumptions, values, beliefs, processes and practices through the group's interactions. If social learning is an objective of collaborative farmer learning in certain situations, then FDGs and other P2P learning mechanisms should aim to build the foundations of trust, structure, capacity and skills to effectively engage participants in critical discourse [58]. From extensive hours of observation, it appears that the process would best be facilitated by a trained, critically self-reflexive facilitator who actively supports the participants' development, monitors progress and challenges his/her assumptions about how to effectively support the group's evolving interactions [9]. Whether there is sufficient training and continuing professional development within the facilitation realm to provide this support in the UK agricultural sector is questionable and should be made a priority in the changing policy environment as a holistic, integrated approach towards strengthening farmers' knowledge and learning processes.

6. Conclusions

Social learning is a theory that has been applied in multiple different contexts to denote processes where actors learn from each other's knowledge, experience, perspectives, processes and practices. Applying the theory as originally conceptualised by Bandura and developed over the years from an educational learning theory perspective, the emphasis is on the cognitive learning process that occurs through interaction with one's environment. From that conceptual standpoint, this study was framed to investigate the interactions between participants within a sample of FDGs in South West England. The elements of behaviour modelling, role modelling and self-reflexivity guided the ethnographic design and implementation of the study, resulting in numerous examples of the elements playing out within the groups.

The evidence points to the conclusion that social learning, as understood from an adult cognitive learning theory standpoint, was occurring within five of the FDGs observed. Based on how the groups were structured and engaged (or not) in critical discourse, there was variance in the promotion of self-reflexivity by the various groups. Therefore, critical discourse may be understood as a factor influencing whether social learning is most effectively promoted. That finding underscores the important role of facilitation within the context of the groups in fostering critical discourse, e.g., developing capacity, skills, trust and understanding of that communication approach. Drawing on

studies that highlight the need for skilled facilitation to effectively promote learning and innovation within networks, systems transitions, and adult learning interventions, there is a need for further research as to how facilitators may effectively develop and hone the skills for fostering critical discourse aimed at promoting self-reflexivity. Within the UK agricultural field, this speaks to the need for more research around and development of facilitators' learning opportunities, e.g., training, mentorship, continuing professional development, etc.

Additionally, more research is needed on critical discourse. How can farmers better develop their understanding, skills, confidence, trust and motivation to engage in critical discourse as a form of learning from and with their peers? Does the capacity to engage critically simply evolve over time through mutual engagement with familiar colleagues about shared challenges and opportunities? Do certain interventions speed up that capacity building process? What role does peer modelling of that skill play and how might that be fostered? Which methods or tools exist and may be utilised to encourage critical discourse for not just reflection on tasks and decisions but reflexivity as to values, attitudes, beliefs and assumptions informing one's perspective and practice, thereby contributing to metacognitive development?

FDGs are a mechanism through which social learning may be promoted within UK agricultural extension. Both individual and collective group change may be promoted through participants' learning processes involving interaction with, influence from and impact on their environment. As demonstrated within the FDGs in this study, social learning will depend on the interactions amongst the group members and may be effectively promoted through critical discourse around issues of shared concern and divergent thoughts, experiences and perspectives. Adult cognitive learning theories have been applied to many situations in which farmer learning is an objective, incorporating methods to encourage knowledge acquisition, information processing, reflection and reflexivity on values and assumptions, practice change, amongst other forms of learning. This article provides more understanding as to how FDGs and P2P interactions may be enhanced by fostering social learning through behaviour modelling, role modelling and self-reflexivity.

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