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# Conceptualising the case in adult and higher education research: a dynamic systems view

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In terms of the framing and focus of research, recent years have seen a theoretical shift in many areas of the social sciences towards a recognition of some of the limits of currently dominant epistemologies. 'Recognising limits' is not meant here only in the sense that there will always be limits to the results of all processes of abstraction aimed at explanation. In addition, research is dominated by particular types of abstraction and explanation, when other types may also be possible.

One aspect of this theoretical shift is an increasing concern with the problems of understanding the local and the specific, and many related issues connected with the particularities of context. Although it can be seen in many different fields in relation to theory, however, the implications of this move have yet to be satisfactorily worked out. In particular, the implications for the analysis of data, and for the epistemologies and ontologies which underpin the analysis of data, have not received a lot of attention (though see (1) and (2)).

Although some researchers may no longer be interested in defining variables, or measuring and counting in relation to large samples, the analytical strategies which are employed in relation to more qualitative data (interview narratives, for example) are nonetheless arguably often informed by the same ontological assumptions which underpin the epistemologies which these approaches usually intend to reject. For example, it is largely taken for granted that comparative analysis, in relation to something like interview data, should be carried out cross-sectionally, and that the overall purpose of the analysis is the creation of patterns or themes which can be seen to be *common* to the different narratives being examined. But what does a common pattern across different narratives indicate? And how can a pattern which relates to only to one particular case be of any use in understanding others?

These familiar questions arise at least partly out of the assumption that it is possible to relate the results of a particular study to other, similar situations, and to form these relationships in quite specific ways. Whilst this makes logical sense in relation to some of the purposes of research, existing assumptions about the *nature* of this 'relating' are not often examined[1]. The assumption that one situation can or should relate to another is often based upon a belief that the phenomena in question are 'underpinned' by structures and causal factors which the researcher is in some way able to apprehend, or at least speculate upon, from their particular vantage point:

> As Ely et al. (1997) describe, qualitative analysis and interpretation of data is similar to climbing a mountain. On gradually achieves a broader view of the data which is likely to be wider than that of the participants themselves (3).

[1] Post-modern, post-structural and feminist approaches have done major creative and destabilising work in relation to these assumptions, but the implications of such destabilisation are not frequently carried through to the actual analysis of data

Qualitative researchers are usually careful to recognise that generalisations cannot be made from small studies. However, the demand to 'draw out' particular types of implication from case studies rests upon a belief in the possibility of something very similar to generalisation, and upon the assumption that what manifests as variety and diversity can be described in terms of subtle forms of 'deep' structure (whether such structures are conceptualised as real, or simply as analytical constructs). An example of this is Goodwin's (4) study of adult learners at university, which identifies three categories of individual: 'pleasers', 'searchers' and 'sceptics'. Transcendent categories such as these function to create an apparent underpinning unity to particular aspects of the different narratives which have been analysed, even though these narratives have been generated from within the very *different* contextual settings of individual people's lives.

**Complexity and the conceptualisation of the case**

As a set of ideas about process and formation, complexity and dynamic systems theories appear to offer the potential for thinking differently about some of the assumptions inherent in both 'explanatory' and 'interpretive' approaches, and about some the problems these assumptions can give rise to. Although the complexity of the social world, taken as a whole, could be conceptualised as being characterised by 'millions or billions of variables that can only be approached by the methods of statistical mechanics and probability theory' (Weaver, 1948, in Johnson (5)), social complexity could also be conceptualised as consisting of a large number of smaller, overlapping types of 'organised', but open, dynamic system. Cultures, discourses, social groups, institutions, disciplines and even individuals could all be seen as 'open systems' which manifest different types of organisation through time, in the sense outlined by complexity theory (see Fig. 1).

*Themes, variables, key factors (deep structures, generalisation)*

In anything conceptualised as a complex, dynamic system, the interactions are *multiple,* and *multiply connected,* and it is the multiplicity of the interactions through *time* which produces effects. Causality in this situation therefore, from one point of view, cannot be meaningfully reduced to single or limited numbers of factors or variables, as the factors are all crucially implicated in relation to each other, and change their effects through time. From a complexity perspective, the interactions are not 'underpinned' by any kind of centralised, generative force or structure which could be said to determine their nature; and the idea of emergence in particular confounds this type of deterministic thinking. Though emergence takes place within constraints, such constraints are not the deep structures of a clearly bounded phenomenon. In this situation, Byrne (6) has suggested that the impossibility of tracking multiple interaction histories means that research needs to shift from a focus on *cause* to a focus on *effects*.

Conventional categorising approaches to the analysis of data try to identify structures of meaning which are grounded in individual responses or accounts, but which at the same time in some way also transcend these individual accounts, and thus have the potential to 'illuminate' other manifestations of 'the same type' of phenomena. Complexity, on the other hand, provides a rationale for trying to understand something[2] about how multiplicities of different variables might be interacting *together,* dynamically, to produce particular forms of emergent result. In this situation, the search for causes has, in some important ways, to be abandoned.

The inability to identify centralised mechanisms or to infer causal pathways, however, does not mean that relationships cannot be observed between particular sets of interacting variables (what

[2] Importantly, not everything

Goldstein (7) talks about as *conditions* for emergence) and what it is that actually emerges from these interactions (Byrne's *effects,* as above). For example, it could be observed that in the case of a particular institution, with specific types of staff, specific types of curriculum, a particular kind of culture and ethos, and students from predominately x and y type of social backgrounds, particular types of result emerge from the interactions of these different things (think of Oxford university, for example). The absence of a central driver in this conceptualisation suggests a potentially fruitful shift from the search for generic causes (or correlations) towards a closer study of *what* is interacting, over time, and *how* such interactions may be taking place, in relation to the outcomes that can be observed in a specific situation. Though the causal pathways cannot be identified, aspects of the conditions which give rise to particular types of emergence can.

This direction in thinking, however, leads to a focus on particularity which jars with normal expectations which say that a specific case has, in some sense, to be an 'example' of a broader class, or at least an example of how larger structural forces may 'play out' in a particular situation[3]. From a complexity point of view, the dynamic system being studied (for example, a particular institution), whilst both constrained and also partly constituted by the interactions of other, overlapping systems[4], cannot be conceived of as an 'example' of a type of structure or system, because in some crucially important ways, it will also always be unique. It is not an example of anything; it is itself. This does not mean that no similarities can be observed between this dynamic system and other, related types of system. But thinking of something as a dynamic system provides a rationale for understanding what emerges uniquely from the interactions of that particular system, which is different to the attempt to create categories of similarity which aim to transcend such individual particularities.

*Cross-sectional analysis: the problem of understanding difference and local contexts*

Because of this connected, multi-factor causality, elements which are isolated and conceptually 'removed' from a system of connected interactions (as a 'theme' may be identified in relation to an individual narrative, or a 'characteristic' in relation to an individual school) in effect cease to have meaning in terms of understanding the system from which they were extracted (although they might have meaning in relation to other such isolated elements abstracted from other systems). In order to understand the nature, or generation, of what has been categorised as a theme or characteristic, it is necessary (from a complexity perspective) to study the smaller system itself (the individual or school), and to study this in terms of its interactions through time. This places the researcher/educator, conceptually, *within* the system being studied, looking at histories and local interactions, rather than trying to climb Ridley's (3) mountain to get a 'broader view of the data'. Importantly, such a shift also makes the researcher part of the interactions which are being studied, distinguishing a complexity standpoint from phenomenological approaches (which are premised on the assumption that it is possible to 'bracket out' the researcher's part in the research).

Some of these ideas inevitably lead to questions about how 'systems' are to be framed (and by whom), and also to questions about how such systems might be understood in relation to each other. This is particularly relevant to the current interest in understanding phenomena as 'situated', or 'in context', and the many problems associated with defining and handling the specificities implied by such interests. Although case studies, for example, can appear to 'study

[3] What currently dominant ways of thinking say little about, however, is why such forces play out in a particular way in one example, and in quite a different way somewhere else.

[4] Any system could be seen as having particular interaction characteristics, though these would not be 'characteristics' in a fixed or essential sense. In the case of larger social and cultural systems, such characteristics could be something like patterns of class or gender relations

things in context', context seems often to be vague and problematic, not only in terms of how specificity is supposed to link up to generality, but also in relation to how it is conceptualised in relation to a) the boundaries of a case, and b) the relationship of the bounded case to the contexts of the individual sub-units within it.

If the intention in an interview-based case study, for example, is to 'interpret meanings in context', then comparative analysis of different interview narratives from a particular context (eg. a group of access students, an adult education class etc.) appears to make this possible. However, any 'meanings' which come out of the interview transcripts do not so much relate to the group or class which has been defined as the case, but rather to the local contexts inhabited by the different individuals who have been interviewed. In terms of generative forces, it is arguably these individual contexts (which include but also go beyond the membership of the defined group or class) which have created whatever meanings can be claimed to be expressed in the narratives.

The theme, or group of themes, which might be created in a comparative analysis of different interview texts generated within a case arguably says more about the context/group which has been defined as the case[5] than it does about the individuals within the group. Paradoxically, however (given that individual contexts are not considered in the analysis), the theme is far more likely to be presented as information about the individuals as some kind of 'type' (e.g., 'these adults are all motivated by career prospects') rather than in terms of the context of the case (e.g., 'this university setting, in the context of current political and cultural agendas, encourages these adults to talk about learning in terms of career prospects'). The transcendent category which is the individual type appears to point towards a subtle form of 'deep structure' underpinning the manifest variety of individuals. This type of transcendent category is not problematic as long as it is clearly referring to the dynamic system which has been bounded as the case, rather than the individuals within the case. But if the researcher is trying to understand individual experience, to 'give voice' to individual perspectives, then a comparative analysis of interview texts seems to contradict this intention.

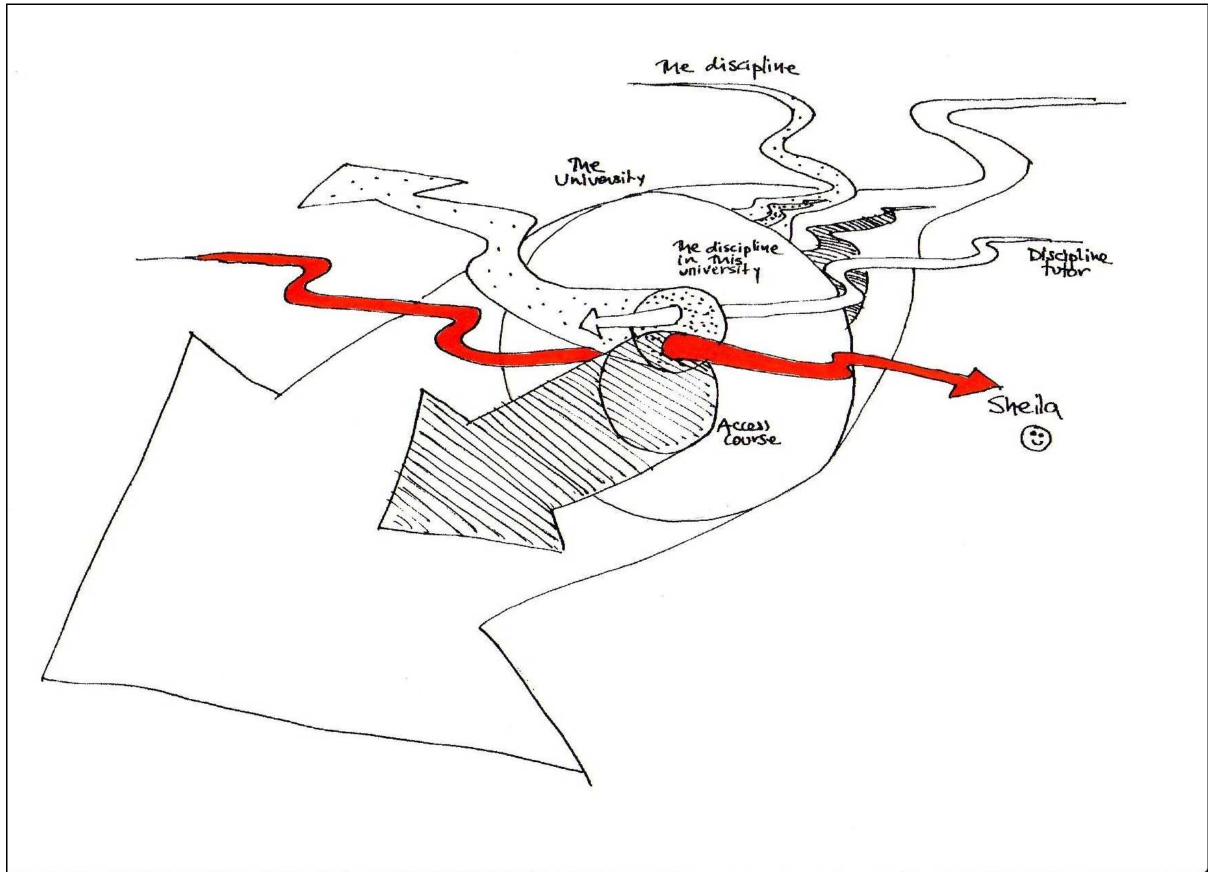
Thinking of people and social/institutional/cultural contexts as complex, dynamic systems allows for the separation of at least three distinct types of context: 1) the contexts of the wider lives and histories of those being interviewed within the case, 2) the context of the case, and 3) the dynamic systems of culture and society within which the case is embedded. Anything which can be legitimately bounded as a dynamic system[6] will have particular initial conditions, specific interaction histories, and will be interacting dynamically with specific and multiple 'presents', so that in any case study there will be *specific* manifestations of each of these (and other) types of context. Conceptualising these different types of context as dynamic systems allows the researcher to think about conditions and effects relating to the individual histories and current conditions of each different type of context, whilst at the same time recognising that all of these systems are implicated in each other, in terms of currently manifesting interactions. Complexity and dynamic systems theories not only provide a rationale for studying the concrete and particular, but, by suggesting that knowledge *can only be* contextual (8), such theories arguably provide an imperative to think about phenomena in this way.

[5] And, of course, about the conceptual frame of the researcher

[6] Discussion of this is beyond the scope of this paper. From one point of view, what is bounded as a dynamic system is the creation of the researcher, underscoring the point that from this perspective the researcher is conceptualised as being an integral part of the study in a way that is not recognised by many other epistemological approaches. However, most discussions of dynamic systems do provide certain criteria which would have to be met in terms of a definition (see, for example, Cillers, 1998); only certain types of phenomena could be described in this way.

Whilst the focus on particularity suggests a departure from currently dominant ontologies, this perspective does not rule out the usefulness of comparative analyses. Complexity, rather, opens up new questions about what can validly be compared cross-sectionally, by framing the focus of research in terms of interactions, conditions and emergent effects. It also opens up thinking about other kinds of comparison (longitudinal, for example, as opposed to cross-sectional). For further exploration of these issues in relation to a study using this conceptual framework in relation to a study into adult learning in Higher Education, see Haggis (9) and Haggis (10).

**Fig. 1. System trajectories**





REFERENCES

1. Thomas G, Theory's spell – on qualitative inquiry and educational research. British Educational Research Journal 2002; 28 (3): 419 -435.

2. Law J, & Urry J, Enacting the social. Department of Sociology and the Centre for Science Studies, Lancaster University, Lancaster. 2003 at http://www.lancs.ac.uk/fss/sociology/research/resalph.htm#lr

3. Ridley D, Puzzling experiences in higher education: critical moments for conversation. Studies in Higher Education 2004; 29 (1): 91-107.

4. Goodwin L, Resilient spirits; disadvantaged students making it at an elite university. London: Routledge Falmer: 2002.

5. Johnson S, Emergence. London: Penguin: 2001

6. Byrne, D.(2005a) Focusing on the case in quantitative and qualitative research *ESRC Research Methods Programme, Workshop 4, The Case Study* January 12-13, 2005

7. Goldstein, J. (2005) Impetus without teleology: The self-transcending construction of emergence Paper given at the *Complexity, Science and Society Conference,* Liverpool, September 2005

8. Byrne, D. (2005b) Complexity, configurations and cases *Theory, Culture and Society* 22, 5. pp95-111

9. Haggis, T. (2004) Meaning, identity and 'motivation': expanding what matters in understanding learning in higher education?, *Studies in Higher Education*, 29, 3 pp. 335-352.

10. Haggis, T. (2005) Researching difference and particularity: new perspectives from complexity theory. Paper given at *Challenging the orthodoxies in educational research*, Middlesex University, December 2005, London