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Psychological consistency, *inconsistency* AND cognitive dissonance in the relationship between **eating meat** *and* **EVALUATING** animals

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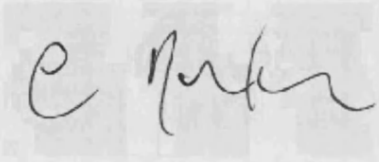
Declaration

I certify that the thesis I have presented for examination for the MPhil/PhD degree of the London School of Economics and Political Science is solely my own work other than where I have clearly indicated that it is the work of others (in which case the extent of any work carried out jointly by me and any other person is clearly identified in it).



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Abstract

Despite much research into vegetarianism, the psychological relationship between eating meat and evaluating animals remains relatively neglected. Through focus groups, questionnaires and experiments, this study investigated whether people experienced psychological inconsistency in this relationship and, if so, how they handled that inconsistency.

Unlike vegetarians' attitudes, the content of meat-eaters' attitudes towards eating meat rarely included animals. Meat-eaters' positive attitudes towards eating meat were consistent with their eating behaviour; however, their attitudes towards farm animals were more positive than their attitudes towards eating meat. It therefore depends upon which attitudes are salient at any given time to determine whether psychological consistency is maximised overall.

By focusing on the relationship between their own genuinely-held attitudes towards farm animals, animals' slaughter, and eating meat, meat-eaters' cognitive dissonance increased. Their attitudes towards eating meat were expected to become more positive in order to restore consonance between their attitudes and eating behaviour. However, meat-eaters' attitudes towards eating meat became less positive and their attitudes towards animals' slaughter became more negative. In contrast, their attitudes towards farm animals resisted change. Therefore meat-eaters' attitudes towards farm animals became relatively even more positive than their attitudes towards eating meat and animals' slaughter. Hence, the attitudes stimulated by this research, in an environment which prevented psychological denial strategies, caused (a) meat eaters' attitudes to become more inconsistent with their behaviour and (b) the consequent lack of consonance restoration.

This study both helps to understand the empirical relationship between eating meat and evaluating animals and extends cognitive dissonance theory's explanatory power to real-world complex phenomena.

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CHAPTER 1

Psychological relationships between evaluating farm animals and eating meat

On a hot summer's day a village hall housed a focus group of three men and three women. They had been chatting comfortably; but suddenly silence fell. One woman finally broke the silence to exclaim: "Oh that's interesting isn't it"!

Their attention had been drawn to two statements to which they had all previously agreed: "I eat meat" and "I like animals". Earlier these statements had been disconnected, but when they were presented together the group's easy conversation was arrested. The statements had not changed; what had changed was the relationship between them. This relationship is the focus for this study.

Contributors to the tenth anniversary issue of the journal Society & Animals (2002) lament the state of 'human-animal[1] studies'. The consensus is that, despite blossoming interest, the area remains under-researched and under-recognised (Shapiro, 2002). According to Fiddes (1994), vegetarians and other non-orthodox eaters have been scrutinised, while the Western mainstream diet has been relatively ignored. This is to science's detriment because the 'normal' can be as revealing as the 'abnormal', and all the more perplexing because many people argue that widespread meat-eating and high regard for animals is inconsistent. *The thesis here is that if meat-eating is psychologically inconsistent with positively evaluating animals, then there will be evidence of that perceived inconsistency.* This evidence, if it exists, must demonstrate how inconsistency is handled to allow both meat-eating and positively evaluating animals to co-exist within the same culture and the same people.

The focus on meat-eaters demands a shift in focus, away from what has traditionally stood out to Western researchers—vegetarianism—and towards what has often been ignored and treated as invisible. This shift, elevates the dominant ideology from 'the invisible norm' and values it both as an alternative that is full of content and meaning against which vegetarians are studied, and as a research topic in its own right. In seeking to understand meat-eaters, they are compared with vegetarians to identify differences that might illuminate both groups in the context of one another. In this sense, the study echoes political and feminist psychology (e.g. Iyengar and McGuire, 1993) that interrogates the culture in which research and its topics are embedded.

[1] For the sake of brevity, "animals" throughout this thesis refers only to non-human animals. Nevertheless, it is recognised that humans are also animals.

The main theory used here to investigate this evidence is cognitive dissonance theory (see section 3.2). As Chapter 3 outlines, the empirical topic benefits from being originally explored via an established theory, while the theory's explanatory power is tested by a real-world phenomenon. This study therefore contributes to social psychology both empirically and theoretically.

This Chapter unpacks the issues before the next Chapter outlines the work that has already been done on this topic.

1.1 Definitions

'Meat', 'evaluating animals', 'consistency' and 'inconsistency' are defined here to explain how they are used in this thesis.

Meat

A supermarket list of products sold in the category "meat and poultry" (Anon, 2005) provides a list of "meat":

Bacon
Beef
Chicken
Lamb
Offal (kidneys, liver, hearts)
Organic (chicken, beef, pork, lamb, sausages)
Paté
Pork
Sausages
Speciality poultry (duck, poussin)
Turkey
Prepared meats (including burgers, meat in sauces and coatings)

It means both cooked and uncooked meat. While this list is not exhaustive, fish or other species, for example, are unlikely to be ordinarily included without making this explicit.

Evaluating animals

Attitude theories are explored in more detail in section 3.1. Here two of the dimensions on which attitudes towards animals may vary are explored, these are intrinsic and instrumental dimensions.

Instrumental reasons for positively evaluating animals focus on animals' perceived uses or benefits to people, such as animals' appearance, affection, company, biodiversity, pest control abilities, monetary value, rarity, status symbols, protection, or

for the products that can be made from their bodies. Intrinsic reasons for positively evaluating animals focus only on the animals themselves, emphasising, for example, animals' souls or essences, experience of life, sentience, intelligence or abilities (e.g. Singer, 1993).

'Loving animals' brings to mind theories of other human relationships, for example those that emphasise exchange and equity (e.g. Homans, 1961; Hatfield, et. al., 1985). Exchange and equity are instrumental ideas and may indeed be good models for human-animal relationships and people's love for animals. But they exclude the range of other possible instrumental and intrinsic reasons for positively evaluating animals that people may have.

Consistency and inconsistency

When this thesis asks whether someone's views are consistent, this means: are their views consistent by their own standards?

Stone (2001) defines psychological inconsistency, "... as an intermediate discrepancy between behaviour and a specific attitude ..." (2001, p.57). This is a narrow definition from the field of cognitive dissonance theory that will be explored more fully in Chapter 3 and, although it is relevant to this thesis, a wider definition is helpful at this stage to frame the topic. More generally, 'inconsistency' means lacking in consistency, agreement, or compatibility. It embodies the idea that the consistent application of principles means not making exceptions without good reasons (Warburton, 1999).

'Consistency' also demands that the things about which one can be consistent or inconsistent are related. That is, if someone supported the principle of ending world poverty one minute but did not the next, then, all other things being equal, this would be inconsistent. But if that person was thrifty with their own money, these things are not necessarily related or, therefore, inconsistent. Yet again, if they believed that they could help end others' poverty by donating to charity, then failing to donate would be inconsistent with their ideals, while donating would be inconsistent with their frugal accounting. This is where Warburton's (1999) 'exceptions with good reasons' come to the fore. The thrifty campaigner would make an exception to one of their proclivities. They would inevitably be consistent in one respect and inconsistent in another.

If someone cared more about world poverty than their own money, then, all other things being equal, they could be expected to make an exception to their frugal

behaviour and donate. Conversely, if they cared more about their own money than world poverty, then, all other things being equal, they could be expected to make an exception to their ideals and not donate. This maximises consistency overall.

Of course, world poverty and one's own money are just two things that might be opposed under certain conditions. People daily make such choices: hitting the alarm clock's snooze button or getting to work on time, for a start. Bigger choices make news headlines, particularly in politics. In the run-up to the 2005 general election, the Conservative Party manifesto promised to spend on public services and lower taxes. Other parties claimed that this was impossible; it was inconsistent with what everyone knew about spending and taxation, which were opposed in nature. The point here is to discover whether people believe that their own attitudes towards eating meat and evaluating animals involve similar oppositions.

The inclusion of denial in this study (which is explored in Chapter 3) involves an assumption about the topic; an assumption that, for some people at least, the life and death behind meat is unpleasant to think about. Further, that this unpleasantness cannot be easily resolved or removed; it is something with which the owner has to live, perhaps uncomfortably. Put like this, the problem does not seem inconsistent. There is nothing inconsistent about finding death unpleasant. Where any inconsistency might arise is in the relationship between disliking death and endorsing, or even demanding, it.

People may eat some meat but not others. If they like the taste of white meat but dislike the taste of red meat then they are not inconsistent because taste is a sound reason on which to decide what to eat. But cultural differences provide some less clear examples where one meat is eaten but another avoided depending on from which part of the body, or which species, it came. For example, horse meat is generally avoided in Britain, in contrast to neighbouring France, while meat from similar hoofed animals (e.g. cows) is eaten in Britain. One of the questions that this thesis poses is whether eating some meat and avoiding others is consistent by people's own standards.

1.2 Competing cultural commentators

In Britain many people eat meat and also like animals. How this relationship is represented in our culture might indicate whether its members experience it as inconsistent. The following published representations of this relationship demonstrate (a) how consistency affects the issue, (b) that there are different representations in

circulation, and (c) that the topic is 'live': it is on, at least some, people's minds, being discussed and debated. The following five cultural commentators' views will be used as frameworks for comparing against ordinary meat-eaters' views throughout this study.

Scruton (2000)

Using arguments later called "logic-of-the-larder" (Matheny, et. al., 2005), Scruton (2000) is explicitly concerned with consistency:

> ... I find myself driven by my love of animals to favour eating them. Most of the animals which graze in our fields are there because we eat them. Sheep and beef cattle are, in the conditions which prevail in English pastures, well fed, comfortable and protected, cared for when disease affects them and, after a quiet life among their natural companions, despatched in ways which human beings, if they are rational, must surely envy. There is nothing immoral in this. On the contrary, it is one of the most vivid triumphs of comfort over suffering in the entire animal world. It seems to me, therefore, that it is not just permissible, but positively right, to eat these animals whose comforts depend upon our doing so. (Scruton, 2000, pp.218-9)

First Scruton (2000) claims to be consistent by loving animals and therefore creating them. Many animals only exist because they are eaten, therefore, we should eat them in order for animals to be created. Second, he argues that 'correctly' farmed animals are happy. Again, if it is good to create happy lives, and this is only possible due to people eating animals, then we should eat meat. Third, he argues that the animals' manner of death is enviable. He implicitly claims that there is nothing wrong with killing: killing an animal does not harm them. Fourth, he argues that as this manner of death is so good, people should consistently receive it too. Scruton (2000) proclaims himself to be consistently both an animal-lover and a meat-eater.

Fearnley-Whittingstall (2004)

Other commentators demonstrate the flexibility of people's approaches to consistency. Fearnley-Whittingstall (2004) is ambivalent about killing an animal but is determined to be informed about, or even involved in, it. He takes a more 'cost-benefit' approach than Scruton (2000) and sees others' 'hypocrisy' as worse than his own perceived inconsistency.

> I'm a carnivore, and I enjoy eating meat. I also enjoy the process of getting my own meat. It's an emotional thing to kill an animal for the pot. It's a combination of the holistic satisfaction that you've bagged something yourself, tempered by a pang. But it feels better than buying an anonymous

> piece of factory-farmed meat in a supermarket ... it's hypocritical to draw a veil over the fact that meat is a result of killing. It enables us to treat animals badly, because we want it out of sight and mind. (Fearnley-Whittingstall, 2004 p.146)

Even though Fearnley-Whittingstall (2004) would be willing to kill whatever he ate, he still has opposing feelings. This is evidenced by the 'pang' at killing, which he accepts as an unavoidable side-effect. He does not explain why he feels this pang but believes that animals should be 'treated well'. This suggests that he is concerned for animals' experiences, and therefore that he holds intrinsic cognitions about farmed animals. Indeed he went on to publicly challenge supermarkets about the suffering of broiler chickens in particular (e.g. Fearnley-Whittingstall, 2009). However, in his view, the benefits of eating meat outweigh the costs of killing an animal. Thus his approach is, for him, the most consistent possible while accommodating some inconsistency.

Johnson (2004)

Johnson (2004) is an ex-vegetarian, tempted back to meat because he loves it so. But in a BBC2 television programme he learnt more about the film-engulfed meat that many people encounter every day. Johnson (2004) visited a free-range beef farm where, he admitted, cattle were better cared for than on more common intensive farms. He found choosing a cow for slaughter difficult. A calf reminded him of his own child, while the cow he chose (a decision based on her thick rump) felt warm: like his dog rather than meat. When the cow was killed in a small slaughterhouse (unlike the more usual large-scale slaughterhouses where, he tells viewers, workers are paid by piecework), Johnson (2004) cried. Despite the point of the investigation being to follow the meat from animal to plate, in the end, Johnson (2004) simply could not bring himself to eat the meat that he had seen being prepared. He remains, however, a committed meat-eater and in 2006 presented advertisements for Birds Eye 100% beef burgers.

The fact that Johnson (2004) did not eat the steak suggests that his ordinary behaviour was out of tune, or inconsistent, with his experience; so much so that he physically could not 'stomach' the meat. But not eating that particular steak was entirely consistent with the empathy he felt for this cow and his distress at her killing.

Cohen (2000)

In contrast, Cohen (2000) is less troubled by his attitudes towards meat and animals than by what he sees as his own inconsistency between these attitudes and his

ethical principles. The quotation below comes from his book which explores the denial that enables people to avoid challenging social wrongs.

> I have [looked] at my own reactions to environmental and animal rights issues. I cannot find strong rational arguments against either set of claims. But emotionally, they leave me utterly unmoved. I am particularly oblivious—in total denial—about animal issues. I know that the treatment of animals in cruel experiments and factory farming is difficult to defend. I can even see the case for becoming a vegetarian. But in the end ... my filters go into automatic drive: this is not my responsibility; there are worse problems; there are plenty of other people looking after this. What do you mean, I'm in denial every time I eat a hamburger? (2000, p.289)

Cohen's (2000) consistency-inspired reasoning bears the hallmarks of utilitarian philosophy, but his lack of 'emotional movement', he believes, leads him to ignore, or 'deny', his intellectually-derived logic. Cohen (2000) seems bemused by what he sees as his own inconsistency. Overall his book bemoans people's tendency to deny others' suffering and thus to prevent ending it. In this quotation he demonstrates that he too is a victim of the same tendency.

Adams (2000, 1995)

Adams (2000, 1995) has also been struck by people's ability to reach different conclusions about the same issue:

> Meat eaters see themselves as "eating life". Vegetarians see meat eaters as "eating death". (Adams, 2000, p.15)

> Vegetarians and corpse eaters approach the same phenomenon—the consumption of dead animals—and come to opposite opinions: is it "meat" or a corpse? life or death? humane slaughter or murder? delicious or repulsive? nutritious or fat-laden? departure from tradition or return to tradition? Corpse eaters see vegetarianism as a fad; vegetarians see eating animals as a larger fad. Corpse eaters see vegetarians as Puritans, legislating others' enjoyments; vegetarians see animal eaters as resisting awareness, indulging in fantasy about where flesh comes from. Corpse eaters generally accept the cultural construction of the farm as benign, friendly, and family-based. Vegetarians see an alternate view: industry-owned, cruel and factorylike ... While vegetarians regard the word *vegetable* with respect ..., flesh-advocating cultures see it as an appropriate term for brain-dead individuals. (Adams, 1995, p.26)

1.3 Framing the problem

The cultural commentators have shown that there are different ways of thinking about the relationship between eating meat and evaluating animals, and that some people are thinking about, and publicly representing, the issue. They also

demonstrated that consistency is not an all-or-nothing affair. People may accept some inconsistency as an unavoidable consequence of a balance-sheet approach that maximises consistency overall, experience great emotional angst, feel intellectually befuddled, or be utterly oblivious. People may reject any discomfort, or they may change their whole lifestyles.

In some cases, it is easy to see inconsistency: Johnson's (2004) inability to eat meat while being fervently pro-meat-eating seems paradoxical and his strong emotional response suggests that, at the time at least, even he might have been unable to offer any 'reasonable exceptions' to consistency. A stronger example still is Cohen's (2000) own befuddlement that he rejects suffering and the denial that allows it, appreciates the arguments for animals' 'rights', and yet remains emotionally unmoved by animals' suffering. He sees his own 'denial' and knowingly does not apply his own principles and theory.

The question remains whether there are patterned private phenomena underlying these public representations of the issue. The task in this study is to identify ordinary meat-eaters' attitudes to these issues, which can be compared against these cultural commentators' public representations.

Already there is disagreement over the central question of whether or not people find the relationship between eating meat and evaluating animals to be inconsistent and whether or not people are troubled, either by their perceived inconsistency or their use of animals. The cultural commentators have demonstrated that strong views exist on both sides. As outlined on p.11, the thesis asks whether people are psychologically inconsistent. If they are, then this in turn leads to question what they do with this inconsistency: how they handle it and whether psychological theory can explain the evidence from real people.

CHAPTER 2

Theories of psychological and cultural avoidance of the life and death behind meat

The British have a reputation as a nation of animal-lovers, from the media appetite for wildlife programmes, to the number of welfare organisations clamouring for donations—and getting them—to demands for a bill of rights for pets. A MORI opinion poll confirmed that 97% of British adults believed that animals have 'rights' and 45% considered that animals' 'rights' should be respected as much as humans' (Ryder, 2000).

The British are also a nation of meat-eaters. Although British meat-eating is epitomised in the traditions of Christmas turkeys and Sunday roasts, British meat-eaters consume their own weight in meat each year (Gellatley, 2000).

Table 1: Number of animals eaten by an average British meat-eater during a lifetime (excluding fish)

Cattle	5
Pigs	20
Sheep and lambs	29
Chickens	780
Turkeys	46
Ducks	18
Rabbits	7
Geese	1½

(Gellatley, 2000, p.3)

So, the question is: do these culturally empirical phenomena interact to create any psychological inconsistency? Ryder (2000) argues that the relationship between using and positively evaluating animals is paradoxical:

> Two themes stand out in the extraordinary history of Homo Sapiens' relationship to the other animals: first its perennial importance in the human psyche and, secondly, the ambivalence and inconsistency of that relationship. (2000, p.15)

His observations may lack scientific rigour, but Serpell (1996) agrees with Ryder (2000):

> Many meat-eating consumers react with horror to the sight of a recently butchered carcass, and it is clear that people do not like to be reminded that the plucked and trussed-up chicken, or the leg of lamb they had for Sunday lunch was once a warm-blooded sentient life-form like themselves. (Serpell, 1996, p.195)

This identifies the key issue of disconnection between the animal and meat, which recurs in many of the following theories.

Some of the following theories have tended to concentrate on one half of the problem: meat-eating. Attitudes towards animals are just as important, but these are

missing from many current theories (exceptions being Ryder's, 2000, Serpell's, 1996, and Eder's, 1996, explanations). The central problem identified by this thesis is the relationship between eating meat and evaluating animals (although both may be worthy research topics individually).

2.1 Comparing meat-eaters to vegetarians

This study focuses on meat-eaters, however, vegetarians make a point of contrast against which meat-eaters can be better understood.

Povey, et. al.'s (2001) research enabled participants to express their own views towards their diets. Meat-eaters were more ambivalent towards their own diets than towards vegetarian diets and were the only respondents to report anything positive about eating meat. Their views emphasised taste, fattening, nutritional or balanced qualities of meat in a diet, the wide and varied choice they experienced and concern over health scares. Comparing their views with vegetarians' about eating meat shows that "cruel and barbaric", "inhumane" and "murderous" were missing from the meat-eaters' spontaneous expressions, as was any acknowledgement at all of the animal in their meat. This shows that meat-eaters may not consider the animals in their diets at all unless prompted. Health, however, was evident in their concerns. So a key difference seems to be that vegetarians automatically equate meat with killing animals; meat-eaters do not. Consequently, what many vegetarians see as the greatest advantage of their diet—animal welfare—does not naturally occur to meat-eaters. Hursthouse's (2000) recollection of how she became vegetarian both demonstrates the shift in thought between meat-eating and vegetarian perspectives and the benefit of studying the contrast between them, one in the context of the other, rather than seeing them as isolated groups:

> I saw my interest and delight in nature programmes about the lives of animals on television and my enjoyment of meat as side by side and at odds with one another, instead of as totally distinct and having no bearing on each other. (2000, p.165)

McEachern and Schröder's (2002) Scottish interviewees showed little concern for ethical issues when purchasing meat and held inaccurate beliefs about livestock production. Their findings, along with Povey et. al.'s (2001), agreed with Serpell's (1996) view that people prefer not to connect meat to an animal.

Lea and Worsley (2002) confirm intuitions that meat-eaters primarily eat meat because they like its taste. Their meat-eaters emphasised health as the main benefit of a

vegetarian diet. Health benefits came first, second and third. Fourth came animal welfare/rights benefits. So although these meat-eaters were concerned about animals, changing animals' fates was not the primary advantage of avoiding meat in their view. In contrast, Wright and Howcroft (1992), McDonald (2000) and Santos and Booth (1996) found that vegetarians were vegetarian for ethical (welfare) reasons, while Kenyon and Barker's (1998) vegetarian sample were generally unconcerned with any health benefits of their diet. This evidence all supports Povey et. al.'s (2001) work.

Therefore the greatest difference between meat-eaters and vegetarians, identified by a number of independent researchers, is that vegetarians, unlike meat-eaters, connect animals to meat. Meat-eaters resist this connection even when prompted. However, perceived advantages of a vegetarian diet also differ between vegetarians and meat-eaters, with vegetarians citing ethical (welfare) reasons as paramount, and meat-eaters citing health reasons.

This could suggest that vegetarians care more for animals than do meat-eaters. However, as will be explored, McEachern and Schröder's (2002) study is one of many to find that meat-eaters' understanding of the meat industry is largely incorrect, with animals' experiences considered to be more natural and positive than industry and independent reports suggest is the case. Consequently, if many meat-eaters, perhaps like Scruton (2000), think that farmed animals lead satisfactory lives, then they are unlikely to be concerned for their welfare. Thus it cannot be said from this research that one group evaluates animals differently to another as the differences may lie in understandings of the meat industry, or indeed elsewhere.

More importantly, though, meat-eaters' lack of spontaneous connection between animals and meat, and resistance to that connection when it is made for them, also cautions against simplistic assumptions. These findings are supported by other research following in this Chapter, and prompt this study's interest in cognitive dissonance theory to explore the potential reasons for this motivated lack of connection that has so far been identified but not explained.

2.2 Locating potential inconsistencies

Broom (1999) analyses the severity of animals' suffering and concludes that farm animals represent by far the greatest number of animals who experience the most pain and distress across all industries. Yet this contrasts with the public perception and

concern for animal suffering in other settings, like the wild, laboratory, or in abusive/ neglectful conditions. This analysis is supported by Britain's many animal welfare groups whose supporters care about animals and eat meat: RSPCA, Cats Protection League, National Canine Defence League, etc. Taylor's (2004) ethnographic research conducted over three years found that welfare workers in British animal sanctuaries cared passionately about animals. In some cases they broke the law to protect animals. And yet all but two of these welfarists ate meat. At the other end of the spectrum, however, Serpell (1999) found that all of the vivisectors in his survey emphasised that they disliked killing animals and many were vegetarian.

There is evidence to raise concern for the mental health of such workers. Rholf and Bennett (2005) found quantitative evidence of Perpetration-induced Traumatic Stress ("PiTS") in those who euthanase animals. This included "recurrent thoughts, nightmares and feelings (intrusion) and avoidance of emotions and ideas" (2005, p.214). Emotional numbing, distressing recollections, sleep disturbances, an increased startle response, difficulty concentrating and irritability have also been reported through qualitative research in the same area (Arluke, 1992; White and Shawhan, 1996). These symptoms (similar to post-traumatic stress but with the added stressor of feeling personally responsible) are like those suffered by soldiers and police officers who have killed people (Rholf and Bennett, 2005). Such research might explain why people do not conventionally want to be involved in, or even know about, animals' slaughter, irrespective of how much they love meat or how necessary they deem the slaughter to be. Hence, consistency can be maximised overall, yet acting against (inconsistently with) a strong view can still cause extreme discomfort. For some people, this discomfort can threaten their mental health.

Plous (1993) found that most survey respondents report (1) that they are concerned for animals' well-being and (2) that they support the selective use of these same animals, particularly for food and research. Braithwaite and Braithwaite (1982), who surveyed 302 Australian students about animals' suffering, found that many respondents who disapproved of eating meat continued to eat meat. Respondents also frequently condemned production practices (e.g. "force-feeding geese to make their livers swell ...", 1982, p.43). However, the same respondents endorsed the consumption made possible by these practices (e.g. "eating paté produced by the force-feeding of geese", 1982, p.43).

Hills (1993) also found that her sample of the Australian 'urban public' agreed with both 'equality' and 'dominance' arguments about animals. That is, they felt that animals should receive consideration equal to people, and be dominated for people's use. Although some respondents saw this as inconsistent, Hills (1993) concluded that the issue was unimportant to respondents and so the inconsistency was easily tolerated. Other respondents either did not see, or acknowledge, their views as inconsistent.

Plous (1993) argues that psychological mechanisms reduce the conflict resulting from the collision of people's perceptions of themselves as compassionate with the realisation that they, albeit indirectly, harm animals. For Plous (1993) this is the core inconsistency. Plous (1993) suggests that the most common conflict reduction mechanism when such a collision occurs is avoiding the topic, but a range of rationalisations can also support the use of animals. Alternatively people may eat less meat.

Like many others, Knight et. al.'s (2003) interviewees demonstrated that eating meat and evaluating animals are often unrelated to each other, but Knight et. al. (2003) also identified people's 'backwards' approach to answering questions:

> ... rather than people considering the "facts" and then forming an attitude based on these factors, it seems that people often work backward. Although they like animals, they also eat meat and, therefore, need to justify this contradictory behavior. Thus, they "build" their argument to justify their existing view or behavior, rather than forming an attitude based on the arguments. Therefore, information is actively sought after, or actively avoided, depending on whether it supports or undermines the existing attitude or behavior. (2003, p.313)

Generally, the more Knight et. al.'s (2003) interviewees liked animals, the less they supported using them and the more participants knew about animals' lives on farms and in laboratories, the less they agreed with these uses of animals. However, as the quotation demonstrates, interviewees are prone to rationalisations. The fact that Knight et. al.'s (2003) interviewees worked backward, 'building' their arguments from their behaviour, supports a cautious interpretation of this data. Although it seems sensible that liking animals would precede low support for using them, it is possible that these variables are not so causally related. Vegetarians may be animal-lovers, but this alone does not necessarily distinguish them from meat-eaters. Scruton (2000) may be an extreme case, but he ably demonstrates this point. Because there is no distinction in

Knight et. al.'s (2003) work between whether animals are intrinsically or instrumentally evaluated, it is also difficult to identify what their 'liking for animals' might mean.

Like Fearnley-Whittingstall (2004), Knight et. al.'s (2003) interviewees often weighed up the perceived costs of using animals against the perceived benefits. However, many interviewees admitted that they knew little about the costs (e.g. distress/pain) and said that they did not want to know. This further supports McEachern and Schröder's (2002) research discussed previously. Knight et. al. (2003) conclude, like the Braithwaites (1982) and McEachern and Schröder (2002) before them, that the small amount of supermarket space dedicated to free-range and organically farmed meat indicates that people's shopping behaviour does not reflect their desire for farmed animals to be treated and killed humanely. This is supported by Serpell's (1999) research with farmers who complained that they were forced to rear animals intensively because consumers demanded cheap meat, eggs and dairy products.

2.3 Avoiding the meeting of animals and meat

Sufficient studies have now agreed that meat-eaters do not spontaneously connect animals to meat, and do not want the connection to be pointed out to them. Although theorists have thus far not labelled the phenomenon as such, Cohen (2000) argues that this motivated disconnection is typical in cases of 'denial', where one must simultaneously know and not know something (this is explored further in the next Chapter). Knight et. al.'s (2003) interviewees exemplify this phenomenon:

> ... most participants claimed that they didn't know about the procedures because they didn't want to know. Participants talked about avoiding information concerning animal use because it led to unpleasant feelings of discomfort ... Thus, dissociation—avoiding knowledge of animal use, or repression, in terms of somehow failing to remember such knowledge—are often the preferred options. ... the process of avoiding information is less of a form of repression and more a deliberate strategy developed to manage emotion and justify behaviour. (2003, p.317)

This is exactly the problem that Fearnley-Whittingstall (2004) identified for people who avoid meat's origins; it is also the 'denial' that Cohen (2000) feared afflicted him.

Plous (1993) claims that cultural dissociation variables conceptually abstract meat from animals. Consequently, the work of Plous (1993) and other authors in this area (see below) suggests that these variables are differently motivated from division of labour practices in other industries that are driven by economic motives. Dissociation

variables include surreptitious farming, renaming meat (e.g. pig/pork), differences in media interest and portrayals between species, and children's socialisation. Dissociation variables might lead to animals becoming what Adams (2000) calls the 'absent referent' in meat; that is, animals are conceptually missing from the end product.

Plous (1993), Wood (1971) and Serpell (1996) have all independently argued that the remoteness of animal industries conceals them from consumers. Serpell (1996) emphasises that farming's buildings, transportation and slaughterhouses are more surreptitious, far-removed and closed-off from the public than are other industries. Parker (2005) also observed that farming animals is traditionally a media-shy industry. Plous (1993) emphasises the renaming of animals into meat, and marketing publications' advice to farmers regarding the packaging and presentation of themselves, their animals and meat to the public, to demonstrate the roles that language and appearance play in this dissociation. Serpell (1996) independently agrees and, like Plous (1993), reinforces his ideas with industry evidence:

> We talk about 'beef', 'veal' and 'pork' rather than bull-meat, calf-meat or pig-meat because the euphemisms, in every sense, are more palatable than the reality. The meat industry is only too well aware of this. A recent edition of the British Meat Trades Journal recommended a change in terminology designed to 'conjure up an image of meat divorced from the act of slaughter'. Suggestions included getting rid of the words 'butcher' and 'slaughterhouse' and replacing them with the American euphemisms 'meat plant' and 'meat factory'. (1996, p.195)

Further endorsing this is a British Government report that concluded that animal welfare messages should not be directed towards consumers because of: "the risk of reducing demand by reminding consumers of the link between animals and meat" (MAFF, 1999). Here the Government body responsible for agriculture and food endorses the concept of dissociation variables, and demonstrates their manipulation.

Serpell (1996), the British Meat Trades Journal (Serpell, 1996) and MAFF (1999) support Plous's (1993) concept of dissociation variables, the reasons for them (because people dislike the idea of slaughter) and the part that language plays in this dissociation. Kenyon and Barker (1998) also include 'meat' itself in such dissociation.

Children's socialisation is another dissociation variable. Sanders and Hirschman (1996), like Plous (1993), argue that the basis for inconsistent beliefs lies in contrary social messages which emphasise animals as objects of both affection and consumption. Children therefore eat meat before they are aware of its origins and are consequently

committed consumers without inconsistent beliefs. Here is a simple explanation of Plous's (1993) finding that young children do not consider 'pig' and 'pork' to be related.

As children are taught both to love and consume animals, it is hardly surprising that Plous (1993) finds social characteristics which aid this learning. Children are socialised to believe that meat is nutritionally necessary in their diet, and that farmed animals are happy. Plous (1993) contrasts the materials from which children learn (storybooks and trips to visit old-fashioned farms) with health authorities' statements and intensive factory farms. Unsurprisingly, Plous and Doty (see Plous, 1993) found that many children are unaware of how farmed animals are used and believe that they lead happy lives (Plous, 1993, implicitly disagrees, therefore, that farmed animals are happy). Consequently, the different learning contexts associated with children's exposure to, and experience of, animals and eating meat can account for the acquisition of seemingly inconsistent attitudes. This is explored in more detail in section 3.1.

2.4 Can historical patterns predict the future?

Ryder (2000) notes that from the 17th to the 19th centuries, England was exceptionally carnivorous. Then, meat was thought essential to the human diet, a status symbol, and an assertion of the difference between 'Englishmen' and 'brutes'. However, Ryder (2000) found writings on vegetarianism dating from the 16th century, and the first modern evidence of revulsion at the slaughter of animals and eating of meat in the late 17th century, when the first animal protection laws also arose. Organised vegetarianism appeared in the early 19th century, coinciding with humane children's publications, the concealment of slaughter from public view, the obscurance of the animal origin of meat dishes, the introduction of effective legislation, and the foundation of the SPCA (to become the RSPCA).

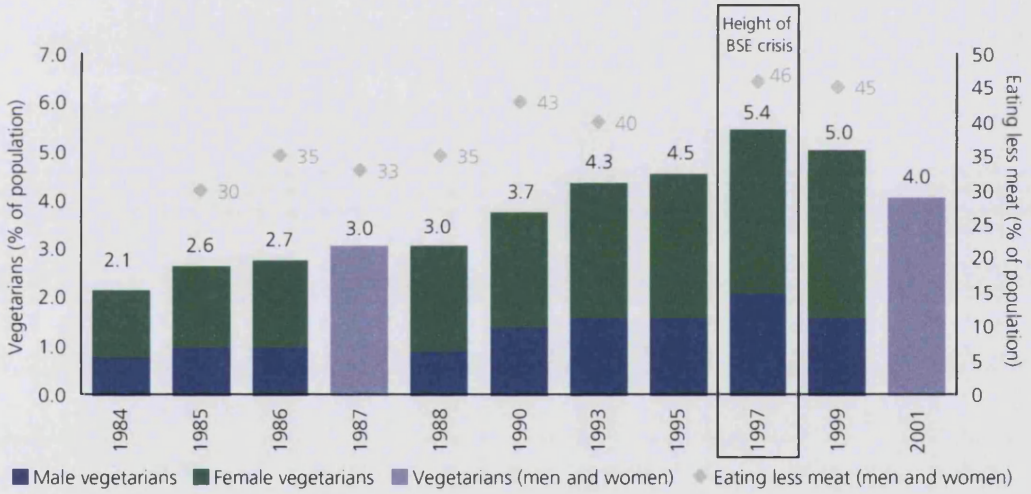
Ryder (2000) argues that Queen Victoria's patronage of the RSPCA ensured its conservative, fashionable and aristocratic respectability. In contrast to their European contemporaries, who looked up to scientists, Victorian Britons were pre-occupied with emulating the upper-class. The upper-class championed the abolition of cruelties to animals—as long as these cruelties were working-class aberrations. At the same time, greater affluence and personal security allowed people the luxury to contemplate morality. And they had plenty to contemplate, with the findings that pain could be controlled causing a change in attitude toward suffering, and the theory of evolution

becoming widely known. However, Ryder (2000) also notes that overcoming reluctance to inflict pain was seen as a sign of rationality and manliness.

The animal welfare movement recovered from the 20th century's world wars with literary attacks on factory farming in the 1960s. According to Ryder (2000), post-1960s' ideologies emphasise compassion, questioning machismo and patriarchy, while science, including psychology, started to demystify the human species and discover more about other animals' intelligence and sentience. However, the 20th century also produced technology and science, making greater demands on other species than ever before.

Although research into patterns of vegetarianism is often funded by special interest groups, meaning that it must be interpreted cautiously, it does seem to show increasing vegetarianism over time.

Chart 1: Vegetarians in the British population



Source: Haldane Foods Group; www.vegsoc.org/info/realeat.html (2002)

The Realeat Surveys (Anon, 2002) were conducted by Gallup from 1984 until 2001 (see Chart 1). The surveys show increasing vegetarianism and an increase in people reporting that they were eating less meat than they used to. A Mintel report estimated a 38% rise in the meat-free foods market from 1999 to 2004 and Taylor Nelson Sofres identified a 6% rise year-on-year (Anon, 2005). Supermarket giant Safeway (now owned by Morrisons) also funded research predicting an estimated 2,000 people a week becoming vegetarian (Anon, 2003b). Serpell (1999) argues that minority groups' criticisms of the treatment of animals have now extended to widespread public controversy. Hursthouse (2000) concurs:

> If you are over forty, you might remember how many people used to wear real fur coats in the winter; you do not see many now in Britain. British supermarkets now offer free-range chickens and free-range eggs; they didn't twenty years ago. People working in university laboratories in Britain used to experiment on living creatures without any formalized constraint; now their experiments (supposedly) have to be approved by 'ethics committees'. In some circles at least, vegetarianism has increased dramatically. I never knowingly encountered a vegetarian at the philosophy conferences I went to twenty or more years ago; now they are quite common, and at some ethics conferences ... they are the rule rather than the exception. (2000, p.12)

Foot and mouth disease, BSE, bird flu, blue tongue and salmonella have made our use of farmed animals front-page news. The BBC's ICM poll conducted in April 2001—the height of a foot and mouth crisis—showed that just over a quarter of the 9% of vegetarians in the sample had stopped eating meat recently. BBC Radio 4's Today programme (Anon, 2001) reported on the Vegetarian Society being inundated with enquires from traumatised news viewers in response to images of animals being slaughtered.

However, the last two Realeat Surveys show a decline in vegetarianism from the 1997 high of 5.4% (Anon, 1999). While the latest report explains this as a return to pre-BSE levels, as those who rejected meat for health reasons resume consumption as their fears subside, it is possible that were the research to have continued it might show continued decline in vegetarianism.

Further, despite a reduction in animal experiments in Britain since 1976, having almost halved over the last 30 years, there were increases in the preceding six years to the last available figures in 2007 (Anon, 2009a). Animal procedures rose by 18% between 1995 and 2007. Passariello (1999) also points out that the UK's huge pet industry demands the slaughtering of many animals to feed heavily carnivorous pet animals. And a few years after the publication of Hursthouse's (2000) book, from which her above quotation was taken, fur and leather are back in fashion (Anon, 2003e; Marsh, 2004). Consumers are reported to know, but be uninterested in, the cost to animals; they just want to look glamorous (Anon, 2003a).

Finally, Dolins (1999) highlights the direct conflict between humans and, especially endangered, animals as a "... delicate balancing act [that] attempts to keep itself upright amidst an onslaught of human needs, desires, and at times, greed" (1999, p.3). Lawrence (2009) also comments on the conflict of pressure to produce more meat to feed a globally growing population, which in turn creates more efficient agriculture

and therefore increased pressure on animal welfare. Young (1999), agreeing with Fearnley-Whittingstall (2004) and contradicting Scruton (2000), draws attention to the routine deprivation of farm animals' basic psychological needs. While Lawrence (2009) argues that it is the job of economics and biology to find the optimal balance, he also accepts that animal welfare concerns have recently moved from being a northern European concern to a global concern, including developing countries. While British animal welfare has enjoyed a good reputation globally for many years, other countries are now considered to be catching up, hence, Lawrence (2009) argues, Britain is not 'levelling down', but the rest of the world is 'levelling up'. There have been a number of global conferences already this year on animal welfare in farming.

The historical anlayses and sometimes conflicting modern observations of our relationship with meat and other animals have not definitively answered the question of whether individual people find this relationship consistent or not. Neither have they identified a clear behavioural trend.

2.5 The roles of nature and nurture

Serpell (1996) argues that because humans lived as hunter-gatherers for more than 90% of their history, it is natural for modern people to empathise with animals and to feel guilt at harming them, as these are contemporary hunter-gatherers' sentiments. Further, most hunter-gatherers kill limited numbers of animals and make some form of symbolic reparation, while animals' economic exploitation is a modern, Western phenomenon. Nevertheless, even in Western laboratories Serpell (1999) found that individual animals can be nurtured, named and spared experimentation by scientists who, he argues, in some way attempt to atone or compensate for their treatment of less fortunate, anonymous animals. Serpell (1996) suggests that hatred for animals may be psychologically abnormal across all cultures (in contrast to meat-rejection), and argues that significant health benefits of living with companion animals (e.g. Serpell, 1991, Anderson, et. al., 1992, Friedmann and Thomas, 1995, Rogers, et. al., 1993) demonstrate the effects of evolved tendencies to feel positively towards animals.

In contrast, Cooper's (1999) analysis of people's sentiment towards wildlife suggests that there is nothing evolved about our concern for wildlife in general, and that it is, in fact, a recent phenomenon.

In any case, Serpell (1996) and Ryder (2000) agree that most people cannot normally harm animals with indifference. Serpell (1996) suggests that the natural tendency to interpret other people is automatically extended to animals. Ryder (2000) claims that people's compassion for animals arose from increased familiarity, especially once other species had been domesticated. Ryder (2000) thus postulates that compassion is innate due to natural selection, but that so too is the contrary drive to dominate based upon our ancestors' dependence on other species' bodies for food, clothing and tools. Thus, inconsistency is a natural human inevitability.

If Ryder (2000) is right, and dominating and compassionate tendencies are innate, then this could explain the recent decline in vegetarianism and the return of fur to the fashion industry. Changes in recent years could represent minor oscillations around a stable balance that is resistant to change, as in an 'evolutionary stable strategy' where a proliferation of one force inadvertently allows its opposite force to prosper before the balance tips and the original force is once again advantaged.

Hills's (1993) survey effectively independently tests Ryder's (2000) theory because these theorists use 'equality' and 'compassion' synonymously. Hills (1993) concludes that:

> ... it is as if equality and dominance exist as two orthogonal dimensions for the urban public, while for animal rights supporters, and to a lesser extent for farmers, they have become opposite poles of a single dimension. (1993, p.124)

In other words, ordinary meat-eaters may not recognise themselves in Ryder's (2000) description, but there is some evidence for his theory. Nevertheless, both Ryder (2000) and Serpell (1996) include cultural influences in their theories.

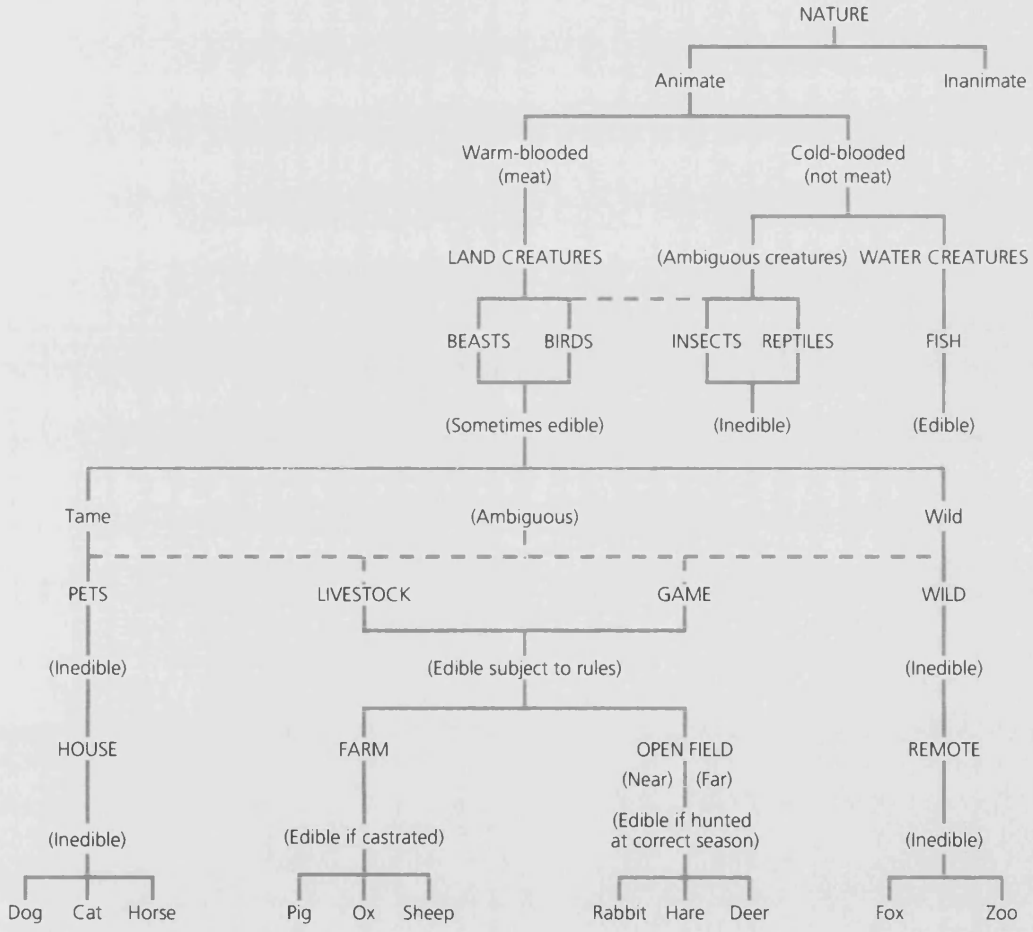
Meat is regularly consumed by a minority of the world's people (Fiddes, 1994). Willard (2002) and Eder (1996) independently observe that animal products are the most regulated and most commonly avoided foods in the world.

Perhaps the best example of cultural differences in perceived 'edibility' (at least, to those in the West) is the dog:

> In a culturally malleable, dynamic system, humans seem simultaneously to anthropomorphize and yet polarize other animals, recognizing both the close links and the dilemmas inherent in the intimacy. The dog can be best friend, or frightening assailant, or even dinner, largely depending upon cultural constructions, and depending on how the identity and power issues of the dog are specified by the humans involved. (Passariello, 1999, p.12)

In Britain, as in other countries, eating many animals remains taboo. If the reasons for this can be understood, it may explain how consistency is, or is not, applied between animals. In recent years British interest has flickered in 'exotic meats' (e.g. ostrich, kangaroo, reptilian) and 'nose-to-tail' eating. But this has not revolutionised the prevailing meat-and-two-veg and hamburger cultures. Figure 1, proposed by Leach in 1964, identifies 'edible' animals through dichotomies. It was still relevant for Eder (1996) and, on the whole, remains so today. (Clearly horses, dogs, cats, many insects and so on are 'edible', but according to taboos in Britain these species are 'inedible'.)

Figure 1: Food taboos in modern society



Source: Leach (1964) p.41

Eder (1996) argues that food taboos are communicative actions that bind a society, fostering solidarity and integration. If food taboos help define the social order across space and time, then morality, nationhood, history, tradition, ancestry and family life are all embedded in what a people do and do not eat. As a result, Eder (1996) argues

that food taboos express an unconscious collective moral feeling, or moral norms, that represent the symbolic foundations of social order and are pre-requisites of a prevailing moral consciousness. According to Eder (1996), the variety of species lend themselves to classification and order, making animals good to think about, as well as to eat and prohibit. This 'thinking about'—classifying and ordering—produces a model of social order and morality for a society's members. So, rather than being just a receptacle for, or manifestation of, pre-ordained moral codes, the way in which people treat animals is actually part of the foundation of morality.

In this view, meat is not just a food that could be substituted for another protein. Rather, a way of life that features right and wrong, liberty and choice, not to mention status and wealth, is tied up with meat. Indeed, Kenyon and Barker (1998) found that some teenagers associated meat with good times, important meals, quality food and status.

So what makes some animals taboo and others meat? Eder (1996) answers that universally, cognitively anomalous animals are taboo (although what defines a feature as anomalous is culturally-specific). Therefore, at the heart of Eder's (1996) social constructionist theory is an evolved, cognitive ability. Disorder is avoided by distinguishing anomalies from convention. For example, turtles that have four legs, yet lay eggs; snakes that are land animals, yet grow no feet; pets that are part animal, yet part human ... Eder (1996) concludes, as shown in Figure 2, that:

> ... edible animals are those that occupy an intermediate position between those closest to human beings and the predators. (1996, p.82)

Figure 2: What makes taboos taboo?

Distance to the self	Near ◄——————————► Far			
	Pets	Livestock (farm)	Game (field)	Wild
Food taboos	Taboo	Edible	Edible	Taboo

Source: Based on Eder (1996) p.82

Predators are very remote from 'the self'. Across cultures, myths oppose their bestial nature with humanity. Predators are killers who break cultural regulations, ignoring the special ritual and symbolic control and justification of killing. Eating a predator would imbue an ordered society with the predators' own disorder. On the other

hand, pets are very near to the self and often anthropomorphised in fairy tales. So, animals that are similar to people also contradict a constructed order of nature.

Serpell (1996) argues that most Westerners assume an 'economic' attitude towards farmed animals while animals kept as pets are exempt from the same treatment for no obvious reason. He claims that the result would be morally and psychologically intolerable if both types of treatment were equally important, so one type of treatment is labelled abnormal and therefore unimportant. Thus, Serpell (1996) argues that we have assumed a disparaging and condescending attitude toward pet-keeping so that the economic use of animals may remain unchallenged.

Eder (1996) also includes modern slaughtering techniques in his theory. Like the theorists already introduced who emphasise the dissociation of slaughter and animals from meat, Eder (1996) independently asserts that there is more to the modern specialisation and abstraction of slaughter from society than can be explained as simply the way of Western business. But in contrast to the other theorists, he argues that it is a moral ritual.

2.6 The explanatory power of existing theories and their views of consistency

The theories do not explain the public representations from Chapter 1 of Scruton (2000), Fearnley-Whittingstall (2004), Johnson (2004), Cohen (2000) or Adams (2000) very well. The greatest problem is that, according to the theories, such representations should not be available. Dissociation variables should prevent people from confronting the issue altogether. Indeed, it is questionable whether people experience inconsistency if dissociation variables do their job properly. Perhaps there is a reason why the representations of the cultural commentators are articulated and published, while other people's are not. It could be because other people have not addressed the issues, at least to the same extent. Perhaps it is no wonder, then, that the cultural commentators seem braver and more knowledgeable than the theories in this Chapter give people credit for. While the commentators demonstrate that simultaneously feeling in opposing ways is not necessarily psychologically intolerable in itself, they may not speak for those of us, perhaps the majority of us, who would rather not think about the issues or our potential inconsistency.

Only Ryder (2000), Serpell (1996) and Eder (1996) address the question of why people positively evaluate animals. All the other theorists take this for granted when asking why animals are used as they are. Ryder (2000), Serpell (1996) and Eder (1996) argue that people's concern for animals is either an evolved disposition, or evolved ability to construct order out of socially-defined animal features. Ryder (2000) and Eder (1996) offer psychological explanations for the continued Western consumption of meat and concern for animals, but at different ends of the nature/nurture dimension. At one end are the innate drives of dominance and compassion, and at the other end is the communicative and moral structure of the cultural unconscious that binds together a society and its people. For other theorists, e.g. Plous (1993), the emphasis falls on meat-eating as the crucial phenomenon to be explained.

Eder's (1996) emphasis on taboos sees consistency defined in the different cultural roles fulfilled by animals. For Plous (1993), Ryder (2000) and Serpell (1996), however, dissociation variables are evidence that our uses of animals are psychologically inconsistent.

So the questions remain: does the relationship between people's attitudes towards farmed animals and meat-eating cause any psychological inconsistency? If people do experience any psychological inconsistency, then how do they handle this and what effect does it have? Just as importantly, if people do not experience any perceived inconsistency, then how do they differ to the theories just investigated?

CHAPTER 3

Theories of attitudes, cognitive dissonance and denial

This Chapter explores theories that may contribute to understanding the psychological relationship between eating meat and evaluating animals. The dominant theory is cognitive dissonance theory. However, complementary theories that can enrich both cognitive dissonance theory and the topic are also included. Attitude theories are introduced first.

3.1 Attitudes and behaviours

One way to conceptualise the topic is through attitudes: one attitude towards meat, another towards farm animals, and another towards animals' slaughter. Billig (1996) introduces attitude theory as problematic:

> Certainly within the history of social psychology, the notion of an 'attitude' has been a troublesome one. Different psychologists have offered different definitions. Some have argued that our attitudes reflect our emotions, whilst others stress that our attitudes are habits of thinking. For other psychologists our attitudes are neurological states of readiness. All these psychologists will dispute with those others who see our attitudes as abstractions dreamt up by 'attitude theorists' ... (1996, p.205)

For those who accept that the attitude construct is helpful, however, an uncontentious view is that attitudes demonstrate people's preferences. Zanna and Rempel (1988) offer this description:

> ... an attitude [is] the categorisation of a stimulus object along an evaluative dimension based upon, or generated from, three general classes of information: (1) cognitive information, (2) affective/emotional information, and/or (3) information concerning past behaviours or behavioural intentions. (1988, p.319)

Much early attitude research failed to predict behaviour (see Potter, 1996). Myers (1993) concludes that the correlation between attitudes and behaviour is optimised when the attitude is salient and specific to behaviour, and the influences on how people express their attitudes, and influences on the behaviour itself, are minimised.

However, Potter (1996) argues that accounting for situational and normative factors means that the usefulness of the general attitude notion is diminished. As Knight et. al. (2003) found (and Bem and McConnel, 1970, before them), people may construct their attitudes backwards from their behaviour. Research findings of a strong connection between attitudes and behaviour are therefore hardly surprising, but also hardly informative.

Nevertheless, attitude theory draws on well-established measurement techniques and, when used carefully, can predict people's actions.

Ajzen's (2002) theory of planned behaviour is one of the best-known theories that aims to draw together attitudes and behaviours, explaining why they may match, or fail to match, depending on a number of variables. Relevant variables include normative beliefs (perceived expectations of others) and the subjective norm (perceived social pressure). But it is Ajzen's (2002) concept of behavioural beliefs that is most interesting here.

Yablo (1992) highlights the difficulty of assuming psychological causal relations. The intention of eating meat does not cognitively demand the act of killing animals. Most Western meat-eaters do not kill animals in order to eat meat, so killing animals is not an intentional or unintentional act. Thus animals and their slaughter may not constitute ordinary behavioural beliefs of eating meat for most meat-eaters. This could explain the findings of Povey, et. al. (2001), explored in section 2.1, that meat-eaters, in contrast to vegetarians, do not normally think of animals in relation to meat.

Attitudes are considered to be formed through cognitive, affective and behavioural processes, and to have similarly varied responses (Eagly and Chaiken, 2005; Zanna and Rempel, 1988), which may be malleable by situational influences and inner states. Hence, as discussed in section 2.3, children's socialisation may account for apparently inconsistent attitudes towards animals and eating meat (Sanders and Hirschman, 1996; Plous, 1993) as children's experience of animals is as objects of both affection and consumption.

Campbell (1963) envisages an attitude as an experience resulting from some interaction with the perceived attitude object. This experienced response leaves a mental residue, predisoposing the owner to a similar response on subsequent encounters. If the tendency of evaluation has developed over many encounters with the attitude object at different timepoints, different aspects of that residue of past experience may form the basis of attitudinal response under differing circumstances.

Eagly and Chaiken (2005) agree that people can hold multiple attitudes towards the same object (see also Bassili and Brown, 2005). The evidence shows that positive and negative responding has different physiological correlates and that negative aspects of people's attitudes often exert stronger influence on behaviour than positive aspects

(Cacioppo, et. al., 1997). Eagly and Chaiken (2005) therefore support the view of attitudes as coexisting positive and negative tendencies.

Learning mechanisms such as classical and instrumental conditioning (e.g., see Toates, 1986) are some of the ways in which attitudes are formed, along with the presentation of complex verbal information (Eagly and Chaiken, 2005). Greenwald and Banaji's (1995), explanation of why people positively or negatively evaluate something draws on two established theories, the mere exposure effect (Zajonc, 1968) and subliminal attitude conditioning (e.g. Krosnick, et. al., 1992). Greenwald and Banaji (1995) describe the mere exposure effect as, "the relationship between frequency of encounter and liking for a wide variety of stimuli in a wide variety of contexts" (1995, p.10). This is precisely the reason Ryder (2000) gave to explain how people historically came to like other animals.

Assuming that most people encounter meat often, and more frequently than they encounter farmed animals or their slaughter, then, on the basis of the mere exposure effect alone, people should evaluate meat more positively than farmed animals or their slaughter. The second favourite target should therefore be farmed animals, followed by animals' slaughter as the least favourite. The conditioning effect may also be particularly powerful for eating meat.

These effects mean that people's familiarity with meat, and the conditioning effects of eating meat, may cause them to 'like' it. The same effects apply to anything with which people come into contact (unless the experience is negative), including other animals. These effects go unrecognised by people who may attribute their liking for meat to the intrinsic qualities of meat itself in a form of 'genuine liking' belief. This takes a well-known phenomenon, the 'fundamental attribution error' (Ross, 1977) (where, for example, people erroneously attribute intentions to other people), and extends its explanatory power into previously discrete concepts.

Modelling – where children naturally mimic the behaviour of role models, such as parents (e.g. VandenBoss, 2006) – reference groups, made up of people with perceived similar attitudes, values and relationships to oneself (Forsyth, 1996) where conformity to that group's social norms can be expected (Asch, 1955) also influence attitude acquisition. As animals and meat-eating are culturally rich phenomena, the social norms to hold positive attitudes towards animals and eating meat are likely to be strong. Other developmental socialisation sources specific to animals and meat-eating were

explored in section 2.3. As the resulting attitudes are not usually combined or compared, different contexts of being exposed to animals and meat-eating would be expected to produce different attitudes towards the same objects, which may also be activated in different contexts.

Attitude researchers generally assume that people have conscious access to their attitudes and can reasonably explicitly express them (e.g. Aiken, 2002), but this too may not be the case. Greenwald and Banaji (1995) believe that traditional attitude researchers have ignored social behaviour that works implicitly, or non-consciously.

Results from the Implicit Association Test ("IAT") (Greenwald and Banaji, 1995, see p.70 for an outline of the Test) suggest that, along with the perception of something, comes automatic unconscious comprehension and an emotional opinion about it. This happens in milliseconds. Thus, "hedonic valence" (Barrett et. al., 2007, p.190) (a positive/negative, pleasant/unpleasant evaluation) is largely automatic. Damasio (1996) also concludes from his work with people who have suffered brain injuries, that emotional opinions are as involved in reasoning as is thinking. Few decisions can, in fact, be 'rational' without emotion to guide us. The way these theorists use 'emotional opinions', 'hedonic valences' and 'implicit attitudes' is synonymous as far as their relevance here is concerned.

Implicit and explicit attitudes may be, but need not be, the same. That is: what people consciously think they think, may not be how they respond when they're 'not thinking'. This is in tune with the discussion previously of multiple attitudes. Greenwald et. al. (1998) offer an example where 'White' experimental participants genuinely believed themselves to be free from racial prejudice and to like 'Black' and 'White' people equally. However, their implicit attitudes demonstrated that many participants strongly preferred 'White' over 'Black' people. The Implicit Associate Test ("IAT"), as outlined in more detail on p.70, compares the speed of responses between categories and allows the researcher to conclude that categories that are strongly associated with positive words, or poorly associated with negative words, ascertained by ease, or speed, of responses are implicitly preferred to categories that are less well associated with positive words, or more strongly associated with negative words. Thus the speed of responses to categories when associated with positive or negative words produces a relative implicit attitudinal preference (as outlined by Greenwald, et. al., 1998, p.1,474).

Implicit attitudes are more robust against some of the criticisms of attitude theory. For example, Greenwald and Banaji (1995) do not claim that implicit attitudes will mirror people's fluctuating evaluations in everyday discourse in a variety of situations. In fact their appreciation of 'self presentation forces' (trying to appear—even to oneself—in a certain way) explains how implicit measures may not match explicit measures and how explicit attitudes are vulnerable to change (precisely because of the context and its effect on how people present themselves, say). Implicit attitudes are more stable, possibly objectionable to their holder, and are likely to influence behaviour in subtle ways where they can avoid confronting conflicting explicit attitudes. There is nothing abnormal about having simultaneously opposing attitudes towards the same object in this view. Both implicit and explicit attitudes are 'true' but apply in different contexts and in different ways (Nosek et. al., 2007).

Haidt (2001), Bargh (2007) and Greene (2007) explore similar concepts to implicit attitudes in researching how people make moral judgements. Bargh (2007) and Haidt (2001) conclude that people's moral arguments are often mere post-hoc justifications to support intuitive judgements. Although people lack access to the real, non-conscious, reasons behind such judgements, that does not stop them vehemently defending judgements with justifications that they believe to be true. Haidt (2001) therefore concludes that an 'intuitionist model' of judgement-making is more plausible than a 'rationalist model'. He, like Bargh (2007), sees the intuitive (implicit, non-conscious) process as the default, quickly and easily handling everyday judgements. Reasoning, then, works mainly as a post-hoc justification to defend prior moral commitments, rather than to create reasoned judgement or private reflection.

The sudden appearance of a judgement through moral intuition includes an implicit attitude, whether it is good or bad, liked or disliked, without any conscious awareness of how this happened. The judgement seems to make itself. Plentiful evidence exists for biased post-hoc reasoning to support intuitive judgements. For example, Nisbett and Wilson (1977) found that people searched for plausible theories to explain their behaviour, although the responsible cognitive processes were not consciously accessible. Nosek, et. al. (2007) argue that, "[w]ith the ability to introspect comes the palpable feeling of 'knowing' of being objective or certain, of being mentally in control of one's thoughts, aware of the causes of one's thoughts, feelings and actions, and of making decisions deliberately and rationally" (2007, p.265). But they agree with Wegner

(2003) that experienced intentions are merely erroneous attributions, without causal power, and that, in fact, underlying processes give rise to both felt intentions and acts. Many other examples come from the decades of cognitive dissonance research explored in the next section.

Of course, the debate about how much of action is consciously instigated, or even whether the 'true' reasons for action can be known, is not new. For example, Deecke, et. al.'s (1976) EEG measurements demonstrated that simply flexing a finger demanded unconscious preparation before the intention to flex a finger became conscious. They concluded that the unconscious makes the decision to act and that feelings of will are illusory. This makes evolutionary sense, as our ancestors' survival had more to do with finding food and mates, while avoiding predators, than with how well they 'saw' the world.

However, Uleman and Moskowitz (1994) found that some control can be exerted over processes that seemed unintentional and non-conscious. Barrett, et. al. (2007) agree that an automatic-controlled dichotomy (such as that favoured by Goleman, 1996) is oversimplistic and further argue that the assumption that emotions are always due to an automatic process, and that their regulation is always due to a controlled process, is wrong. Some control can be exerted over emotion (e.g. failing to experience anger when we want to impress someone, even when they are rude).

Although Bargh (2007) urges that conscious and non-conscious elements are involved in many processes, he agrees with Damasio (1996) that most social behaviour originates through impulses, not a conscious intention, and Dijksterhuis, et. al. (2007) argue that it would be mystifying if behaviour did start consciously. This contradicts much traditional attitude research that assumes people have access to the reasons for their views. The data gleaned by methods like the IAT benefit from being drawn directly from non-conscious reactions.

3.2 What role might cognitive dissonance play?

One of the most influential theories in social psychology is cognitive dissonance theory (Festinger, 1957). Dissonance is an uncomfortable state caused by people's awareness of inconsistency among their own beliefs, attitudes or actions. Section 3.1 explored the ways in which people may acquire different attitudes towards the same objects, but, of course, attitudes towards different objects may also appear to

be at odds with each other: like positive attitudes towards animals and eating meat under certain circumstances. Stone (2001) argues that cognitive dissonance theory predated the formal introduction of social cognition into psychology in the 1970s and that few ideas in social psychology have generated as much theoretical and empirical interest as cognitive dissonance theory.

Aronson (1999) views dissonance as an unpleasant drive state: as basic as hunger, thirst, or pain. Harmon-Jones (1999, 2000) agrees that the negative emotion caused by cognitive dissonance works like pain, providing information and prompting action towards an adaptive or functional response (although, as with chronic pain, the consequences can sometimes be maladaptive or dysfunctional). While much behaviour may be performed automatically, the challenge that gives rise to dissonance may threaten optimum behaviour. Dissonance therefore directs conscious attention to ensure that the best course of action is followed.

Cognitive dissonance theory has been the focus of much theoretical and empirical controversy. For example, impression management theory (Tedeschi, et. al., 1971) suggests that participants only present themselves as having changed their attitudes in order to be viewed favourably by experimenters. However, there is much evidence that dissonance processes do produce genuine cognitive changes. A confederate, ostensibly disconnected to the experimenter, has measured attitudes by observing participants' behaviour (Festinger and Carlsmith, 1959; Linder et. al., 1967) and attitude measures have also been taken in private situations (Harmon-Jones et. al., 1996). Physiological changes (Brehm, et. al., 1964) and research results in the free-choice paradigm (see page 50, following, and Wicklund and Brehm, 1976) are also difficult to explain from the perspective of impression management. Experiments on peripheral blood flow and electrodermal activity (e.g. Cacioppo and Petty, 1979) show that dissonance increases somatic responses reflective of negative emotion. Wicklund and Frey (1981) also summarise a host of evidence, particularly where research participants selectively expose themselves to information, which cannot be explained without the notion of a 'tension state' which must be actively reduced. Although there remain variations within the field, Wicklund and Frey (1981) maintain that dissonance theorists across the spectrum now agree that genuine cognitive changes can occur in dissonance studies.

The wealth of cognitive dissonance literature can be split into two broad streams. One stream concerns the nature and processes of cognitive dissonance itself and typically involves an induced-compliance experiment (Worchel and Cooper, 1979). Although such methods usually measure participants' own views initially, they then divert participants' thinking away from their genuinely held beliefs. The methods therefore suffer from a lack of ecological validity. Indeed, Aronson, et. al. (1999) lament the loss of cognitive dissonance's wide scope since the 1970s through the induced-compliance paradigm.

The other stream in the cognitive dissonance literature, applies the theory to explain natural phenomena, like so-called 'native inconsistencies' (McGregor, et. al., 1999), that are not induced by a researcher. While these applications demonstrate the wide explanatory power of the theory, the theory is often applied in a post-hoc manner without attempting to test the validity of its application (e.g. Chapanis and Chapanis, 1964). Consequently there is a gap between the laboratory research which, for all its empirical power may not represent real life, and the real life observations that lack testability.

Agreeing, Leippe and Eisenstadt (1999) argue that attitude-discrepant behaviour and dissonance are common, daily experiences, but that how people deal with dissonance under day-to-day conditions while maintaining stable identities and attitude systems remains to be understood.

Although physiological research powerfully demonstrated that dissonance causes arousal, it yielded inconclusive results about the core assumption that psychological distress is experienced and the nature of dissonance reduction. For example, Devine, et. al. (1999) argued that there was little evidence that any discomfort that may have been created by dissonance induction was alleviated following attitude change. This is crucial to understanding the mechanism underlying the dissonance process. When Elliot and Devine (1994) created their self-report measure of dissonance based on Festinger's (1957) original work, it not only solved the failings of the somatic measures by rooting the experience of discomfort in their experiment, but demonstrated that this experience eases to comfort quickly following consonance restoration through attitude change. Elliot and Devine's (1994) measure was soon employed by others, who independently validated it, and praised by many more (e.g. Harmon-Jones and Mills,

1999; Cooper, J., 1999; Leippe and Eisenstadt, 1999; Sakai, 1999; McGregor, et. al., 1999). For these reasons, their measure has been adopted in this study (see Chapter 4).

Different theories interpret dissonance motivation differently. For example, some focus on the perceived aversive consequences of behaviour (Cooper and Fazio, 1984), some on the threats of inconsistency to the integrity of the self-belief system (Steele, 1988), while others retain the original focus on inconsistencies between behaviour and a specific attitude or belief (Festinger, 1957, Harmon-Jones, 1999, 2000). The self-affirmation theory is closest to Plous's (1993) view, discussed earlier, that harming an animal, albeit indirectly, is at odds with people's compassionate self-concepts.

Each of these theories is insufficient alone to explain all of the cognitive dissonance evidence, and consequently Stone (2001) argues that each perspective describes an important part of the cognitive dissonance process. Stone and Cooper (2000) proposed the self-standards model to synthesise these theories. It argues that the motivational basis of dissonance depends partly on the attributes or standards that people use to interpret and evaluate their behaviour, which may be construed in different ways, based on attitudes, self-concepts or cultural rules, say.

Stone (2001) argues that people with different expectations of their behaviour may differ in terms of perceiving discrepancies between their behaviour and self-expectancies. Thus, perhaps meat-eaters and vegetarians have different self-expectations. This means that social norms and idiographic conceptions may influence whether or not dissonance is experienced, and these variables may, in turn, be influenced by what information is salient in the context of a given behaviour. Thus there is great malleability in the interpretation and evaluation of behaviour. Consequently, Stone (2001) claims that it is more appropriate to consider dissonance motivation as a function of qualitatively different processes, dependent on the information made accessible in the context of behaviour, rather than a function of one master motive.

Wicklund and Frey's (1981) theory also allows for idiographic and contextual differences in dissonance. They argue that a person free from dissonance may be curious about new or incongruous information:

> ... if the motivational version of consistency theory is understood as a theory of waxing and waning of tensions, there is then no reason to read such a theory as implying that there can be no curiosity, thrill or surprise-seeking. ... The perspective does not argue that in general, tension

> must always be minimised, but rather that tension with respect to an ongoing commitment must be minimised. It is important then to know precisely what the person's goals are at any time, for it is just in these focal areas that the individual will strive to eliminate tension. (1981, p.159)

In other words, a state of nil arousal is not necessarily desirable and the active approach to tension states is flexible.

Hills (1993) (see page 24) found that although some people were 'highly ambivalent' about their meat-consumption, they were pre-occupied with other worries. This fits with Wicklund and Frey's (1981) explanation: Hills's (1993) respondents' thinking capacities may have been simply too full to deliberate problems of this nature. Indeed Shah, et. al. (2002) show that the activation of a given goal inhibits the representation of alternative accessible goals that compete for attentional resources, and Dijksterhuis et. al. (2007) argue that it is probably only when goal-achievement is obstructed that goals become consciously experienced at all.

There are two ways in which perceived inconsistency may cause dissonance.

The first way relates to a need for information or stimulation, which may itself vary between individuals. Wicklund and Frey (1981) suggest that dissonance is more likely to arise if someone seeks stimulation; and a propensity for seeking stimulation may itself be related to personality, as extroverts are more likely than introverts to do so (e.g. Eysenck, 1970). For example, boredom may drive people towards contentious topics for entertainment or distraction. Kruglanski (e.g. 1989, 2006) also identified that people differ along a continuum from needing to attain, to needing to avoid, cognitive closure. Calogero, Bardi and Sutton (in press) found that individual differences in people's need for cognitive closure affected people's underlying values, for example, leading them to prefer more traditional values, or to seek stimulation. Again, this might enable some people more than others to cope with dissonance or to achieve consonance through different routes.

The second way in which perceived inconsistency may cause dissonance is if some external stimulation makes the issue salient. It tips over a threshold, bringing it into the centre of attention, perhaps at the expense of other concerns, which fall, or are pushed, into the non-conscious background. A similar process has been proposed previously by Treisman (1960, 1964a, 1964b) to explain the so-called 'cocktail party phenomenon' (Cherry, 1953) where people, engrossed in one conversation, suddenly hear their name in another conversation of which they were previously unaware.

Treisman argued that people's attention thresholds are set at lower levels for words like their own name, or 'fire!' But salience, importance and urgency may project knowledge over the boundary between the non-conscious and the conscious focus of attention. The threshold could be raised or lowered depending on the capacity of consciousness to accept dissonant issues in need of attention. An example is when the 2001 foot and mouth epidemic grabbed media attention and burst onto public agendas, forcing animals' slaughter into individuals' consciousness. However, problems need not stay conscious until they are resolved. Depending on other matters in hand, they may once more fall into the non-conscious.

Emphasising goal directed motivation also draws together schools of thought that argue that living with inconsistency is normal and healthy (e.g. Cohen, 2000) and those that disagree (e.g. Scruton, 2000); both may be correct. Wicklund and Frey (1981) identify when perceived inconsistencies are easily tolerated or ignored, and when they are treated as aberrant and wrestled with until one opponent submits. It depends on the burdens faced by limited conscious capacity, combined with the importance of goals challenged by inconsistencies. If achieving an important goal is thwarted by inconsistency, then lesser worries may be cast aside in favour of quashing hindrances to that goal's attainment.

Thus Wicklund and Frey's (1981) theory may add other factors, missing from the self-standards model, to an overarching theory of cognitive dissonance. Stone and Cooper's (2000) synthesis where all sub-theories root dissonance in the interpretation of the meaning of behaviour can comfortably integrate these ideas.

Hardyck and Kardush (1968) proposed possible responses to dissonance: stopping thinking ('forgetting'), changing a cognition (the one least resistant to change), restructuring or, as a last resort, simply tolerating it. Attitude-consistent behaviour may also be enhanced. This could explain the violent behaviour of farm and slaughterhouse workers (e.g. Serpell (1996), Eisnitz, 1997, and Gellatley and Wardle, 1996). This is supported by the inverse findings that people tend to dislike others more after causing them harm (Glass, 1964, Davis and Jones, 1960). Personal responsibility for inconsistency can also be minimised (e.g. Darley and Latané's, 1970, evidence that responsibility is diffused, see page 55 following). And using alcohol (Steele, et. al., 1981) or drugs can reduce dissonance. Here may be an explanation for the high levels of alcohol and drug use among slaughterhouse workers (Eisnitz, 1997) and animal

technicians in vivisection laboratories (Arluke, 1992; Anon, 2000). Although these findings have not previously been explicitly linked to the Perpetrator-induced Traumatic Stress ("PiTS") work identified in section 2.2, there is much symmetry between the results. Arluke (1992) has emphasised the feelings of guilt experienced by animal technicians and the resistance of their industries to acknowledge this and provide psychological support for these workers.

Blanton and Cooper (1995), Simon, et. al. (1995) and Stone and Cooper (2001) found that people tend to use the first dissonance reduction route they find. This suggests that discomfort may sometimes prioritise speed over accuracy of resolution. Stone, et. al. (1997) found that direct methods of reducing dissonance (such as changing inconsistent beliefs) are preferred over indirect methods. Self-affirmation is easier for people with many alternative positive self-concepts from which to choose (Steele, et. al., 1993) in a domain unrelated to the dissonance-causing event (Blanton, et. al., 1997).

The likelihood that a cognition will change to reduce dissonance depends on its responsiveness to perceived reality and the extent to which it is consonant with other cognitions. The likelihood that a behaviour will change to reduce dissonance depends on the satisfaction derived from the behaviour and the extent of pain or loss from ceasing it (Harmon-Jones and Mills, 1999). Most previous dissonance experiments have found attitude change to be the prevalent dissonance reduction technique (Harmon-Jones, 1999). However, these experiments may have left participants with little possibility for avoidance (forgetting or denial) and this is explored later on p.51.

The different motives identified by theories that Stone and Cooper (2000) integrate have consequences for the restoration of consonance. Stone (2001) argues that the intensity of the affective experience, and discrepancy reduction, depends upon the level at which dissonance arousal is experienced. Qualitatively different states of dissonance motivation could influence people's strategies to reduce their discomfort. For example, the type of psychological inconsistency on which Festinger (1957) focused between behaviour and a specific attitude, may cause a less intense affective experience than discrepancies that involve higher, more abstract standards for behaviour, such as those that relate to the self or to norms for behaviour. It may be both more important, and more difficult, to restore consonance at higher levels than at lower levels. Hills's (1993) observation that her participants were highly ambivalent, but the issues were unimportant to them, suggests that any dissonance was not experienced at a high level of

personal relevance. In contrast, Plous (1993) argues that the issues do stimulate a need for consonance restoration at a high level of self-beliefs and that this is why there is so much support for the cultural status quo in the form of dissociation variables. Clearly this debate needs further exploration.

Festinger (1957) related the level of dissonance to the attractiveness of the rejected alternative. The more attractive the rejected alternative (say, 'farmed animals' for meat-eaters, or 'meat' for vegetarians), the more dissonance will be experienced. However, dissonance is limited because if the rejected alternative is, or becomes, more attractive than the chosen option, all things considered, then the decision will be reversed. But this does not destroy dissonance; reversing the decision reduces dissonance while the dissonant cognitions remain, albeit in opposite positions of 'chosen' and 'rejected'.

In this sense, vegetarians may not be qualitatively different to meat-eaters; rather they may occupy opposite sides of the same coin. (Note that this is a different level of analysis to Stone's (2001) earlier arguments concerning qualitatively different dissonance motivations stemming from how the meaning of actions was interpreted.) Those vegetarians who are ex-meat-eaters probably experienced great dissonance to the point where they 'flipped over' into vegetarianism. This dissonance could have been caused by new beliefs resulting from exposure to new information (as McDonald (2000) proposed was the case for her vegan interviewees, see section 2.1). Yet all the attractive cognitions in favour of eating meat remain. Support for this view comes from the expanding range of vegetarian meat and dairy replacement products. This also explains how vegetarians lapse: meat-eaters who have experienced levels of dissonance to the point of 'flipping' at least twice. According to the Realeat Surveys (Anon, 2002) discussed in Chapter 2, such people could account for more than 1.4% of the current population.

But this contrasts with McDonald's (2000) finding from her vegan interviewees that 'once you know something, you can't not know it'. A new belief seemed to qualitatively change McDonald's (2000) participants forever. This problem is, however, readily answered by cognitive dissonance theory. First, new information, which stimulated the change of eating patterns, may tip the balance considerably in one direction, reducing dissonance. Second, dissonance creates the need to deny itself, as if, like a fictitious ghoul, the anxiety feeds on its victim's acknowledgement. Many

researchers, including Festinger (1957) and Harmon-Jones (1999), observed the tendency to seek information and social support which enhance the attractiveness of the choice made, reducing dissonance. In the same way, consonant arguments are likely to be readily accepted and receive less scrutiny than discordant ones. Nisbett, et. al. (2001) also note that people become more extreme in their judgements in order to overrule their perceived inconsistency. Similarly, Blanton, et. al. (2001) found that people tend to be "more confident than they are correct" (2001, p.373). Hence inconsistency is harder to tolerate than a simplified and more polarised view of the world.

This phenomenon has been investigated under the 'free-choice paradigm' (e.g. Brehm, 1956). The free-choice paradigm is attractive here because it works with, rather than against, research participants' genuine views, unlike the induced-compliance methods that dominate dissonance research. It also sticks closely to Festinger's (1957) original thesis, which still has much support. Under the free-choice paradigm, choosing between roughly equally attractive alternatives produces greater dissonance than choosing between alternatives of unequal attractiveness. This is demonstrated by 'the spreading of alternatives' (e.g. Harmon-Jones and Mills, 1999), where participants enhance their attraction to the chosen item, and decrease their attraction to the rejected item, although they found the items similarly attractive before being offered the choice of one to keep.

However, variations occur between cultures. Heine and Lehman (1997) observed no tendency to justify their choices among Japanese students, in contrast to Canadian students, in a free-choice experiment. The implications are that the arousal and resolution of cognitive dissonance is more variable and complex than first envisaged by Festinger (1957), and that contributions are still being made to the understanding of this powerful theory.

Nevertheless, it is possible that if McDonald's (2000) and Knight et. al.'s (2003) Western vegetarian interviewees experienced dissonance, then they enhanced their attraction to animals and decreased their attraction to meat. This means that, contrary to McDonald's (2000) and Knight et. al.'s (2003) theories, positively evaluating animals and avoiding using them may be simply correlated, not causally-related—or at least not causally-related in the accepted direction. Thus, in the same way that harming others may lead to disliking them more, as discussed previously, Aronson and Mills (1959) found that people tended to enhance their attraction to others for whom they have suffered. If

being vegetarian in a meat-eating culture can be said to involve some sacrifice or effort, then these results suggest that vegetarians may enhance their liking for farm animals as a result of their vegetarianism, not preceding or causing vegetarianism. However, vegetarians would be likely to naturally experience the causal relationship in reverse due to consonance restoration processes and the backward justification of behaviour that has now been well established.

This also means that, on the one hand, vegetarians and meat-eaters may be opposite sides of the same coin because of their shared cognitions and the experience of dissonance. But, on the other hand, dissonance may be motivated differently, depending on their interpretation of behaviour, and dissonance may cause vegetarians and meat-eaters to actively create different beliefs, qualitatively moving themselves further away from each other. So it is unsurprising that vegetarians' experience is often to completely reject meat and report their disgust towards it. Of course, the same may apply to meat-eaters in the other direction.

While there is much agreement about the validity of cognitive dissonance research and the robustness of the theory, it has grown since its conception into a broader theory, able to accommodate different dissonance motivations, depending on the context and content of stimulation, creating different interpretations of the meaning of actions at different levels of personal relevance. The theory is sufficiently established to allow some re-interpretations of existing research about the relationship between attitudes towards farmed animals and eating meat already, as discussed, but it also has much more to contribute, and, indeed, this topic tests the further extension of cognitive dissonance's explanatory power.

3.3 Are people in denial about the life and death behind meat?

Johnson's (2004) distress at witnessing a cow's killing and all of the theories emphasising, in their own ways, dissociation variables, suggests that, without dissociation variables, with slaughter in front of our eyes, many of us might react like Johnson (2004). This section considers whether it is possible that people could be 'in denial' about the life and death of meat. In other words, is the slaughter that so affected Johnson (2004) something that many people would rather not know, and so they pretend that it is not true, is not known, or does not exist?

Hills's (1993) and Knight et. al.'s (2003) research results, introduced previously, both implicitly use the language of denial. Cohen's (2000) definition of denial is the "need to be innocent of a troubling recognition" (2001, p.25). He uses 'denial' when referring to the present and 'repression' when referring to the past (not to be confused with the Freudian inner/outer world definitions). According to Cohen (2000), 'denial' covers a range of phenomena:

> People react as if they do not know what they know. Or else the information is registered—there is no attempt to deny the facts—but its implications are ignored. People seem apathetic, passive, indifferent and unresponsive—and they find convenient rationalisations to explain themselves. (2001, p.x)

> Denial then includes cognition (not acknowledging the facts); emotion (not feeling, not being disturbed); morality (not recognising wrongness or responsibility) and action (not taking active steps in response to knowledge). (2001, p.8)

Cohen (2000) describes the denial paradox:

> In order to use the term 'denial' to describe a person's statement 'I didn't know' one has to assume that she knew or knows about what it is that she claims not to know—otherwise the term 'denial' is inappropriate. Strictly speaking this is the only legitimate use of the term denial. (2001, pp5–6)

> Denial is always partial; some information is always registered. This paradox or doubleness—knowing and not-knowing—is the heart of the concept. (2001, p.22)

Cohen (2000) disagrees with the view that denial is an aberrant state and argues that it is a normal state of affairs that 'deletes' rather than 'saves'. Monitoring, selective perception, filtering and attention spans explain how people simultaneously notice and fail to notice things. This, claims Cohen (2000), is better social science.

Denying some knowledge means that it remains as a cognition, and may influence behaviour, or become consciously 'known', but, at the time that it is 'not known', it is outside awareness. The implicit attitude research discussed in section 3.1 suggests that knowing and not knowing feels distinct and dichotomous, but may be more of a gradual continuum with the default set at non-conscious.

Awareness of unpalatable information, like starving children, is overwhelming and so a conscious decision to 'switch off' from it makes life bearable. But denial is not always a conscious choice. Cohen (2000) claims that: "There seem to be states of mind, or even whole cultures, in which we know and don't know at the same time" (2000,

pp.4–5). He muses that this may have been the case for villagers living around nazi concentration camps. The experience of people in this state of denial is to be vaguely aware of choosing to avoid the facts, but not quite conscious of what it is that they are avoiding.

Thus Cohen (2000) highlights the tensions in arguments about denial centred around how much people really know about the object of denial and how consciously instigated denial might be. As section 3.1 has already discussed some of the ideas surrounding implicit/explicit, non-conscious/conscious, intuitive/reasoned attitudes and judgements, it is no surprise to find similar debates in this subject. Cohen (2000) considers different types of denial demand flexibility to accommodate the variations found in people's behaviour that nevertheless share the core "need to be innocent of a troubling recognition".

Victims, too, can be denied: they are not 'victims' if they lie outside the boundary within which values and rules apply. So, the boundaries of moral concern vary between people, drawing not just on psychological proclivities but "on a wider discourse about responsiveness to the needs of strangers" (Cohen, 2001, p.18). This wider discourse brings cultural norms and differences into the equation, but boundaries of concern for others suggests that here Cohen (2000) is talking about quantitative, not qualitative, differences between the drawers of these boundaries. In this view, we all have broadly the same quality (type, structure and motivation) of concern for others. This means that meat-eaters and vegetarians are qualitatively morally equal, but that their boundaries of moral concern may be contracted or extended to exclude or include other species.

Cohen (2000) claims that what seems apparent to others, may have different meaning for the person in denial. According to Cohen (2000), even whole democratic societies may slip into collective modes of denial about things that are 'known', but not openly acknowledged, like the nuclear arms race. In the case of Bill Clinton denying that his relationship with Monica Lewinsky was 'sexual', Cohen (2000) argues that analogies and linguistic tricks constitute a language of denial, "constructed in order to evade thinking about the unthinkable" (2001, p.11). This language is not necessarily intended to create or maintain ignorance, but to prevent the equation with existing knowledge of what is 'right' and 'wrong', and resonates with many emphases on dissociation variables explored in Chapter 2.

Cohen (2000) admits that behaviour is hard to change, partly because it automatically imbues an investment in (or, in behavioural terms, reinforces) the reasons for that behaviour. Changing behaviour implies that one's previous behaviour was sub-optimal: it questions earlier decisions. For this reason alone it is sometimes preferable to continue on a set course than to confront earlier behaviour. So becoming vegetarian says that the previous decisions to eat meaty meals were wrong somehow. Eagly and Chaiken (1993) argue that challenging major beliefs questions a person's world view and their sense of security, invoking anxiety. Thus, according to Elster (1999) sometimes testing a belief is prohibitively risky or costly. It is easier to ignore the question, despise the questioner and reinforce existing behaviour. This fits perfectly within cognitive dissonance theory and provides a clear explanation of the motive behind research findings of why attitudes are often brought into line with behaviours rather than the other way around, which is missing from cognitive dissonance theory itself. Thus the theories are complementary.

Prioritising their own loved ones does not make people "morally repellent 'bystanders'" (Cohen, 2000, p.194). According to Cohen (2000), the psychological and moral distance of suffering naturally enables denial.

> Intervention is less likely when responsibility is diffused ... when people are unable to identify with the victim ... and when they are unable to conceive of effective intervention—even if you do not erect barriers of denial, even if you feel genuine moral or psychological unease, this will not necessarily result in intervention. Observers will not act if they do not know what to do, feel powerless and helpless themselves, don't see any reward, or fear punishment if they help. (Cohen, 2000, p.16)

In the same way that, "[t]elevised images of distant misery don't seem to belong to the same world as our familiar daily round" (Cohen, 2001, p.17), Chapter 2 argued that slaughterhouses and intensive farms are, for many people, abstract ideas: things that belong to other people in other places. They are unrelated to the hermetically sealed meat in smart packages on designer supermarket shelves. So, even if people found the processing of animals into meat objectionable, a behavioural response to this objection is not automatically demanded.

Latané and Darley's (1970) theory about how people fail to respond to those in need has been well-researched. In agreement with Cohen's (2000) quotation above, Latané and Darley (1970) found that the invisibility of someone in need of help enabled experimental participants to avoid taking responsibility for helping her. In a similar way,

the invisibility of animals in meat may prevent people from feeling concern for the animal who became meat and other animals who are in the process of becoming meat (this is similar to Adams's, 2000, notion of the absent referent.)

Latané and Darley (1970) also found that the number of people who could help someone in need is actually inversely related to the likelihood of them providing help. This peculiar result seems to be caused by the fact that if many people could help, most people think that someone else will help, and so avoid taking on the responsibility themselves. Almost three decades after Latané and Darley's (1970) research, Glover (1999) observed that the fragmented technologies of late 20th century warfare mean that distant, unknown people can be killed while everyone from politicians who declare war, to manufacturers making weapons, to soldiers who deploy them can maintain their lack of responsibility for individual deaths. Consumer and industry demands, 'factory farming' and fordist de-production techniques in slaughterhouses mirror these observations (e.g. Eisnitz, 1997).

Serpell (1999) provides evidence from farmers who seemed to experience a similar diffusion of responsibility regarding their animals, which is also similar to consumers' denial strategies highlighted earlier by Knight et. al. (2003):

> Few of the farmers interviewed slaughtered their own animals, even for home consumption, and they therefore did not feel entirely responsible for their demise. Indeed, some specifically avoided inquiring too deeply into the fate of the animals once they left the farm. As the owner of a large egg production unit put it: 'I think they get turned into meat pies, but frankly I'd rather not know what happens to them'. (Serpell, 1999, p.27)

Of course this extrapolates Latané and Darley's (1970) theory to an area that they had not considered, and to which their experiments cannot be directly applied. In the real meat-eating world, research participants do not sit in a laboratory next door to an animal being slaughtered who screams for help! Nevertheless, Latané and Darley's (1970) experiments have been applied to explain real-world situations involving people. As both circumstances represent an unknown 'other', it is reasonable to suppose that their robust research findings could also be relevant to this topic. This work thus lends empirical credence to Cohen's (2000) theory of denial, and consequently further complements cognitive dissonance theory.

Unger (1996) found that people believed that it would be wrong to abandon a bleeding hiker by the roadside to preserve one's leather car seats, but that it was acceptable to spend money on luxuries when that money could be used to save the lives

of impoverished people. Similarly, people often approved of saving five people stranded on a railway line by flicking a switch, which diverts a runaway trolley onto a side-track where it will kill only one person. And yet people usually disapproved of throwing someone off a bridge in front of a runaway trolley, where it will kill the person pushed, but save five others (Thomson, 1985).

Like Latané and Darley (1970), Greene (2007) argues that the bleeding hiker in Unger's (1996) dilemma is 'up close and personal', while the donation dilemma is impersonal. Likewise, flicking a switch is not as personally relevant as hurling someone off a bridge. Greene (2007) found that personal moral dilemmas involved activity in brain areas that are associated with emotion and social cognition. In contrast, impersonal and non-moral dilemmas produced increased activity in areas associated with working memory. Further, participants were slow to approve of personal moral violations but quick to condemn them, while impersonal moral and non-moral judgments took about the same time. Greene (2007) argued that participants had to overcome negative emotional responses when approving of personal moral violations which were not an issue for less emotionally charged actions. Greene (2007) therefore argues that utilitarian judgements require cognitive control when they conflict with emotional responses that drive intuitive judgements, like the implicit decisions and attitudes discussed earlier. He claims that our ancestors evolved in an environment where their altruistic sacrifices were made in favour of those 'close-by and personal'. Hence such situations today push our emotional buttons, unlike those that are far-off and reaching out to us via a charity's letter, or a televised appeal.

3.4 Drawing together theories of consistency

Attitude theories, and particularly Greenwald and Banaji's (1995) appreciation of implicit and explicit attitudes, can explain ways in which dissonance can arise.

Typical hypocrisy experiments (e.g. see McGregor, et. al., 1999) find that: "Individuals seem to have a remarkable capacity for avoiding awareness of inconsistencies unless their noses are quite vigorously rubbed in them" (McGregor et. al., 1999, p.331). McGregor et. al.'s (1999) contention is that real life, in contrast to laboratory conditions, is rife with spontaneous distractions enabling inconsistency to evade awareness. Denial here has been explored as a sub-theory to dissonance (although this is not what Cohen (2000) intended). In fact, the hypocrisy experiments and theory of

denial work well together as features of dissonance, being almost synonymous but with a different focus on experimental versus experiential, anecdotal and observational methodologies. Cohen's (2000) theory of denial is broader in scope, but benefits from the empirical supporting evidence of the hypocrisy and unresponsive bystander experiments.

It makes most sense, in this context at least, to see consonance (in the 'harmonious', or 'cognitively comfortable', view, if not the 'agreement' view) as the goal, not consistency per se. Consonance can be achieved through the illusion of consistency via a range of strategies, and especially denial, rather than always striving for true consistency of attitudes with behaviours.

The mechanism behind the paradox identified by Cohen (2000) of how simultaneously knowing and not knowing something can be hypothesised by employing a synthesised approach to cognitive dissonance theories which allows for variations in the context, content and motivation of dissonance (see Figure 3 following on p.59). For example, Wicklund and Frey's (1981) view that dissonance is prevalent if goals are blocked by inconsistencies suggest that 'not known' things do not obstruct the path to goals and therefore exist as a cognition, but not consciously. Elkin and Leippe (1986) even reported a "don't remind me" effect resulting from unresolved and 'forgotten' dissonance, which is a classic symptom of denial in Cohen's (2000) view and perfectly in line with the hypocrisy experiments. Reminders may force these denied or 'forgotten' issues into consciousness. When they do, the person is aware of having 'sort-of' known them all along; when they do not, 'forgotten' dissonances may remain in the non-conscious background while more pressing problems occupy consciousness. Dissociation and denial variables may help to keep knowledge from consciousness. Thus, cognitive dissonance theory, as it is used here, is based on Stone and Cooper's (2000) self-standards model which already draws together alternative theories of dissonance motivation depending on the interpretation of the meaning of behaviour. It further includes here Cohen's (2000) theory of denial, hypocrisy, unresponsive bystander and Wicklund and Frey's (1981) theories about conscious processing capacity and the importance of blocked goals.

On the other hand, thought-suppression experiments seem to contradict these theories. Wegner, et. al. (1987) found that being instructed not to think about something

actually interfered with another conscious task more than being given no instruction and being asked to deliberately think about the same object. This suggests that actively trying to deny thoughts, may only serve to create an obsession with them. However, Wegner et. al. also found that if participants were given an alternative specific thought to distract them while trying to suppress the object thought, they were more successful at avoiding pre-occupation with the thought to be suppressed. Thus the 'spontaneous distractions' available in real life, on which McGregor et. al. (1999) commented, may be sufficient to avoid such pre-occupations.

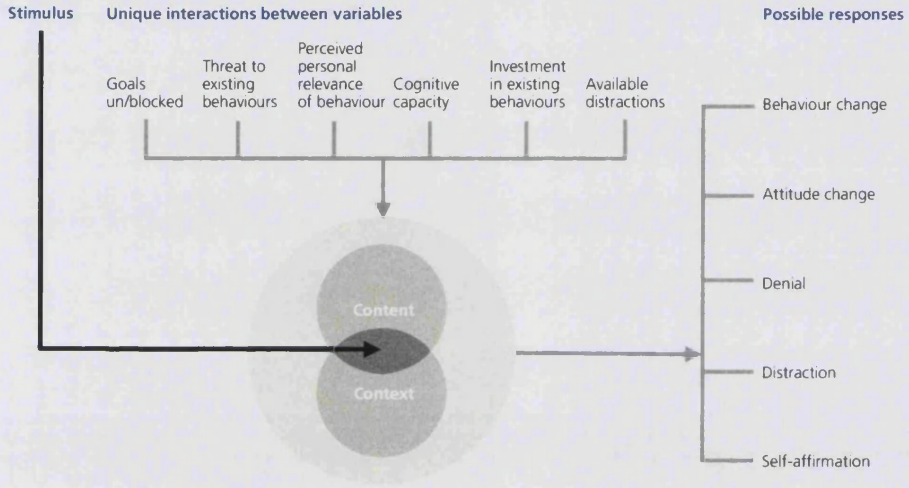
There is an apparent debate between hypocrisy experiments that find people largely oblivious and highly resistant to any perceived inconsistency, and thought-suppression experiments, where trying not to think about something only focuses attention more certainly upon it. For example, the thought-suppression research matches McDonald's (2000) finding that 'once you know something, you can't not know it'. As meat-eaters, her interviewees experienced discomfort and tried denial tactics, before feeling compelled to investigate the topic further and become vegan. From thereon, they may have followed conventional consonance-restoration patterns, seeking support for their chosen behaviour and so on. However, this example can draw the apparently competing theories together, supporting the view of cognitive dissonance theory as a flexible, wide-ranging concept that demonstrates how well the theories of thought-suppression, denial and cognitive dissonance may dovetail in practice (although the psychological experience of these processes is unlikely to be so harmonious).

Hence polarisation in either direction is theoretically possible; research into cognitive dissonance has shown one direction, while research into thought-suppression has shown another. Evidence for dissociation variables and denial, explored in Chapter 2, supports cognitive dissonance theory, but some evidence for thought-suppression research might come from McDonald's (2000) work with vegetarians. It is possible therefore that thought-suppression effects are motivated by another 'level of interpretation of the meaning of action', in Stone's (2001) terms. This could explain the different outcomes, and enable thought-suppression to be accommodated within a theory of cognitive dissonance which is broader than even Stone and Cooper (2000) envisaged.

Figure 3 shows how some variables identified here may influence consonance-restoration. These variables' relevance, and therefore power, in different contexts and

with different contents is likely to change. Individual variables or combinations of variables may dominate, or they may all play a part and even interact in unique ways to influence the outcome. Thus, although laboratory research into cognitive dissonance has proved reliable and valid, variations should be expected in the real world, but this need not fatally challenge a theory of cognitive dissonance that is equipped for life beyond the laboratory, such as an enhanced version of Stone and Cooper's (2000) synthesis.

Figure 3: Variables influencing behaviours and attitudes



The greatest challenge to such a wide-ranging theory is that it may have become untestable. If a theory can explain opposing results, then it may become weaker in this respect, rather than stronger. However, cognitive dissonance theory has a powerful testable indicator of causing experienced discomfort that is expected to occur under dissonance, irrespective of what happens to that dissonance thereafter. Hence dissonance itself remains testable: it can still be identified in research, and ensuing outcomes can therefore be attributed to the operation of a combination of the variables stimulated by dissonance.

The theory proposed here is that, because of the highly culturally embedded nature of meat-eating in Britain, the traditional findings of cognitive dissonance experiments will be repeated and meat-eaters will enhance their evaluation of meat-eating and devalue animals in the research, while vegetarians will show the opposite response, reflecting their similar investment in previous vegetarian behaviour.

All of the theories in this Chapter could contribute to understanding the relationship between eating meat and evaluating animals. These theories are not discrete.

The language and paradigmatic frameworks often disguise theories that blur into each other, can be accommodated within each other, or are even virtually synonymous. For example, denial, the theories relating to the unresponsive bystander, and hypocrisy experiments, have all been treated here as complementary to, and incorporated within, cognitive dissonance theory. Even theories of thought-suppression can complementarily work alongside cognitive dissonance theory. There are areas of tension, for example the disagreement over the accessibility, and location, of the causes of behaviour. The theory of planned behaviour sees some behavioural beliefs as available to consciousness and causal; the IAT suggests that often by the time any such beliefs arrive in consciousness, they may be post-hoc constructions. This issue needs to be resolved empirically if the psychological relationship between eating meat and positively evaluating animals is to be understood.

3.5 Debates and contributions

Before the next Chapter introduces the methods and precise research questions, this final section sums up some of the theoretical debates that have been identified in the first three Chapters, and how this research can contribute both to the empirical topic and the psychological theories.

Standing out from the first Chapter is the diversity and disagreement of how the topic is understood and framed in the real world. The cultural commentators demonstrated a debate based on premises that were often directly opposed. But the problem remains to ascertain whether unpublished, ordinary meat-eaters' attitudes resonate with any of the cultural commentators' to identify patterned phenomena that can steer a path through this debate. The cultural commentators' views will therefore be treated as potential analytical frameworks.

The second Chapter noted flaws in previous work. First, much research on vegetarians has failed to compare results to meat-eating control groups and hence, when conclusions such as "vegetarians love animals" are drawn, there is no way of evaluating whether this does indeed set them apart from meat-eaters or is a rationalisation, worked backwards from vegetarians' behaviour. Consequently causal relationships are assumed but, like the studies themselves, are rooted in the context of the normality of meat-eating behaviour. The often-assumed causal relationship between liking animals and vegetarianism has been questioned by the theories here, but even before they were

developed, it stood out that meat-eaters like animals too, so this assumption, no matter how apparently well-supported by research lacking control groups, demands testing.

This Chapter has also raised methodological flaws in the study of cognitive dissonance due to an over-reliance on the induced compliance paradigm or post-hoc explanations. The method used here plugs that gap by measuring dissonance before and after focusing participants' attention on their own, genuinely held attitudes.

One of the major questions throughout this study is: do people experience any psychological inconsistency in their attitudes towards eating meat and positively evaluating animals?, followed with perhaps the more psychologically-interesting question: and if so, how is the inconsistency handled? The theories create tension even on this basic issue. For example, the cultural roles of some animals may categorise them consistently, or Scruton's (2000) logic-of-the-larder argument may liberate people's attitudes from inconsistency. In contrast, dissociation variables suggest that widespread inconsistency exists at psychological and cultural levels, demanding denial strategies for modern meat-eating to thrive.

The crucial psychological problem identified by attitude theories in section 3.1 is where to ascribe behavioural causation: consciously reasoned or implicitly judged? The theory of denial, too, raises tensions concerning how much people really know about the denial object and how consciously instigated denial is. There is also a lack of agreement concerning the underlying architecture of consciousness and non-consciousness. No-one understands how physical processes in the brain cause conscious experience, nor whether consciousness causes action or is merely a by-product of a non-conscious process. Empirical evidence is mixed (e.g. Bar, et. al., 2001 and Sergent and Dehaene, 2004) and this study does not aim to resolve the debate, but to be mindful of it during analysis.

Tensions also centre around where any inconsistency might be located. For example, different attitudes and behaviours might be at odds with each other, or implicit and explicit attitudes towards the same object may differ. This study also tests the relevance of attitude theory in this area, evaluating how explicit and implicit measures compare to each other. The view taken here is that a synthesis of theories of cognitive dissonance is superior to any single theory. However, this study will evaluate whether attitudes towards eating meat, evaluating animals and animals' slaughter are sufficient to cause cognitive dissonance (psychological inconsistency, e.g. Festinger, 1957, and

Harmon-Jones, 1999) or even aversive consequences (Cooper and Fazio, 1984), or whether Plous's (1993) focus on the compassionate self-concept is necessary to cause dissonance in this topic. This should resolve the debate between Hills (1993) and Plous (1993) who reached opposing conclusions about the perceived importance of this topic to their respondents.

Contributions should therefore also be made to the development of cognitive dissonance theory. So far other theories have emphasised meat-eaters' resistance to a cognitive connection between farm animals and meat and it has been proposed that cognitive dissonance theory may explain the reasons for this. But whatever the findings of this study, it remains to be seen whether the view of cognitive dissonance theory proposed here can completely and comfortably accommodate the full empirical phenomenon.

Cognitive dissonance theory, hypocrisy experiments and Cohen's (2000) theory of denial occupy the same academic space but without reference to each other. This study should ascertain whether they can be beneficially drawn together, as has been proposed thus far, and whether any debates between these theories and the thought-suppression research can be resolved. If these theories' explanatory strengths can build a theory together, then they, and the empirical world, may benefit, perhaps explaining variable responses to stimuli, for example.

There also remains the question about whether people's attitudes towards eating meat and farm animals are evolutionary predispositions, enforced upon us by social parameters, or individually chosen after careful consideration. Many theories already discussed suggest that the attitudes may be evolved, but (as with much evolved life) remain socially malleable to some extent (e.g. the individual content of edible/inedible animal definitions between cultures). This study hopes to contribute some empirical findings to the theoretical work.

Perhaps some of the most exciting contributions possible following this study will be the 'real world' applications and implications. While Cohen (2000) argues that denial is normal, the evidence for PiTS raises concerns about the mental health of people experiencing inconsistency.

There are also implications for policy-makers. Frank (2002) worries that so-called 'blissful ignorance' is inappropriate for social policy:

> Ignorance of animal suffering plays a particularly strong role in food consumption decisions. This brings to bear interesting questions such as how economically to treat true information that yet decreases welfare (knowledge of suffering), since information normally is considered an asset with positive value. With knowledge of suffering, welfare declines, regardless of what the person chooses to do with this information. Yet, is it appropriate to consider ignorance a preferred state for society? This has potentially far-reaching implications. It seems plausible that a significant portion of the population would change its consumption behavior if it were fully aware of the process for creating animal products. Perhaps the government has an obligation to provide information—as it does with other consumer products—to help consumers in making informed decisions about animal product issues. (2002, p.423)

Frank's (2002) assertion of widespread ignorance and people's reaction to the truth, is partially supported by the earlier contrast made by Broom (1999) (see p.22) of the severity of animals' suffering in farming with the public perception of animal suffering in other situations. Frank (2002) is right that policy-makers lack much psychological understanding of meat-eaters' views because there is such little research in this area. Haidt (2001) makes a similar point with regard to understanding how moral judgements are generally made. This topic is just one area where people's judgements are not currently understood. Acquiring a greater understanding may also enlighten how we make other everyday judgements and stimulate change to improve decision-making.

Finally, Ryder (2000) emphasises that because of our ancestors' reliance on, and fascination with, other species, these relationships underpin our economic, artistic, religious, folklore, philosophical, literary and scientific histories. Dolins (1999), too, argues that our relationships with other animals are multi-faceted, with the conflict of competing needs representing only one type of relationship among many possibilities. Ryder (2000) states:

> Changing all this will have revolutionary consequences, affecting what we wear, what we eat, the price of food, the development of science, the appearance of our environment, the character of industries and the way we spend our leisure. (2000, p.5)

Clearly Ryder (2000) thinks that people's relationships with animals will change. This study should contribute to this knowledge, suggesting how far and wide any change might, or might not, spread.

CHAPTER 4

Research methods

4.1 Research questions

The research questions stem from the thesis introduced on page 11. Some of the cultural commentators reviewed in Chapter 1 emphasise the apparent psychological inconsistency between eating meat and having high regard for animals. The thesis here is that, if they are right, there will be evidence of this inconsistency which must demonstrate how the inconsistency is handled to allow the same people to both eat meat and positively evaluate animals. This entails asking:

(a) What are people's attitudes towards farmed animals and eating meat—independently, as well as in the context of each other?

(b) Do people's explicit attitudes match their more automatic (non-conscious, or implicit) attitudes, and do any attitudes match people's reported behaviour?

(c) In what relevant ways do vegetarians' and meat-eaters' attitudes differ, and in what ways are they similar? (Vegetarians' attitudes are only used here as a point of contrast against meat-eaters who are the focus of this study.)

(d) Does simply focusing on genuinely held, relevant attitudes cause dissonance?

(e) Is consonance restored through attitude change and, if so, do attitudes move in expected directions?

4.2 Choice of research methods

Focus groups explored the topic and identified key questions to follow up in later research. They were ideal designs for this topic because competing arguments could be offered more naturally by members of a group than by a researcher. The groups were particularly used to assess research question (a) What are people's attitudes towards farmed animals and eating meat—independently, as well as in the context of each other? They also started to explore how these attitudes related to behaviour (part of question (b)), whether previous research about vegetarians and meat-eaters' attitudes can be supported, developed or challenged (question (c)), whether participants naturally expressed any perceived inconsistency or feelings of discomfort, indicative of dissonance (question (d)), and how people manage this dissonance in a group discursive context (alone not specific enough to answer question (e), but starting to provide some background for an answer and later research).

The later quantitative stage tightened up on the issues identified by the focus groups through explicit attitude questionnaires and two experimental methods. The Implicit Association Test ("IAT") (Greenwald and Banaji, 1995) measured implicit attitudes towards farmed animals, their slaughter and meat. These implicit attitudes were cross-referenced with the explicit attitudes to see if people's explicit and implicit responses and reported behaviour matched. The implicit and explicit attitude measures therefore assessed research questions (a), (b) and (c), as well as focusing participants' attention on their attitudes to facilitate the final experiment. This used Elliot and Devine's (1994) discomfort measure to evaluate how simply participating in the research (which concentrated participants on their attitudes) might have affected their experience of dissonance and whether any dissonance was resolved through attitude change. This experiment assessed research questions (d) and (e), and enabled patterned variations in responses between meat-eaters and vegetarians to be identified, again assessing question (c).

All methods were piloted, improved upon and, where necessary, piloted again.

4.3 Focus groups

Design

Focus group designs need not test hypotheses, manipulate variables or necessarily even produce results which claim to be representative of the wider population (e.g. Banister, et. al., 1994). Here they explored variety in people's sense of the topic. Nevertheless, the designs were fairly structured to cover the issues raised by the theoretical Chapters. The main advantage was that participants' answering processes—thoughts and deliberations—as far as could be articulated, became explicit through the discussion. This was stimulated by the dialectical format of many tasks.

Perhaps the greatest restriction of focus groups is that they rely on conscious articulation while the answers sought might be hidden from their owner's consciousness (as, indeed, has been proposed by much of the preceding theory). However, the aim was to uncover only explicit conscious views at this stage. As such, the groups identified issues on which quantitative methods could concentrate that would not otherwise have been highlighted. No other method could have easily provided the wealth of data necessary at this stage.

Procedure

22 people took part in the focus groups, 7 men and 15 women, with ages ranging between 41 and 80. They formed four groups. Three groups took place in a village hall, one took place in two of the participants' homes. Appendix I details each groups' members, time and location. Two groups were recruited from leaflet drops, one group from the Women's Institute, and one group via an acquaintance's friends. A prize draw was run as an incentive to participate.

All participants were told that they would be 'discussing a range of social issues', but that they should be aware that the topics being discussed might prompt them to consider some of their views that they may find confusing or contradictory.

Four designs explored the topic from different angles to ascertain whether responses converged on similar ideas. This kept the lengths manageable and time limits were imposed to ensure that participants did not suffer from fatigue.

All groups were tape-recorded and the recordings subsequently transcribed (transcripts are provided in Appendix I). The instructions for each task were read to participants, and hard copies were presented so that the group could refer to them throughout the tasks. This helped to keep the discussion on track.

The debriefing emphasised the normality of participants' views, with which all the participants seemed content; many offered to take part in another group if this was possible.

Schedule overviews

See Appendix B for detailed schedules.

The first group comprised five women and two men and lasted one hour. The group discussed what sort of things occupied their thoughts and why. The answers contributed to evaluating the claims that consciousness is often simply too overwhelmed to consider matters of dissonance, and that only obstacles to achieving goals may receive attention, at the expense of less important issues. Group members also discussed what reasons they had for and against eating meat and evaluating animals and how good they thought these reasons were.

The second group comprised three women and three men and lasted two hours. The group discussed their general ethical ideas and compared them with their attitudes towards eating meat and animals.

The third group comprised one woman and three men and lasted one and a quarter hours. The group discussed farmed animals' treatment and the group's attitudes towards farmed animals and eating meat.

The fourth group comprised five women and lasted one hour. The group discussed ideas about potential inconsistencies in eating meat and evaluating animals.

Materials

Materials included two tape recorders, a series of questions presented as a questionnaire, post-it notes, pencils and printed copies of the discussion questions. Refreshments were provided.

The analytical method and results are presented in Chapter 5.

4.4 Quantitative methods

Three explicit overall attitude measures, two detailed questionnaires, a dissonance measure and the IAT were drawn together for the quantitative research stage. See Appendix D for the research guide.

Explicit attitude and detailed questionnaires designs

The explicit overall attitude measures were based on Campbell's (1971) measure, using an 11 point scale, sensitive enough to measure small attitude changes over the course of the research, between "extremely negative" and "extremely positive". This measure benefits from findings of strong validity in previous research (e.g. Haddock, Zanna and Esses, 1993, and Stangor, Sullivan and Ford, 1991). The attitudes measured were those towards cows, pigs, sheep and chickens (representing farm animals throughout the study), eating meat, and animals' slaughter.

These three explicit overall attitude measures were used twice, towards the beginning and towards the end of the research (see section 4.5 for more detail about the procedure), to measure potential changes in attitudes resulting from any experienced dissonance. In this sense, the attitude measures became experimental dependent variables, responding to experienced dissonance (the independent variable, for the purposes of this measure).

The two detailed questionnaires were about eating meat and evaluating animals. The questionnaire about eating meat was based on Fessler et. al.'s (2003) research. It was amended because Fessler et. al. (2003), like most researchers in this field, were only

interested in why people do not eat meat, rather than why people do eat meat. So questions derived from the focus group data were included to fill this void. Fessler et. al.'s (2003) question about why participants may not have eaten meat was also expanded to include a more complete range of possible reasons, again drawn from the focus group data. For example, Fessler et. al. (2003) concentrated on ethical, health and disliking reasons for avoiding meat, but focus group participants raised issues about availability and being unable/unwilling to cook meat (especially among a young population), as well as cost. Ignoring these possible reasons for meat-avoidance could have distorted the data, so the focus groups' range of ideas were included and the questionnaires piloted.

In the questionnaire about evaluating animals, the questions were drawn from focus group responses and theories about how animals can be evaluated (e.g. see section 1.1) to provide a comprehensive range of options. Instrumental evaluations were measured first because the focus groups again demonstrated that these were the most readily volunteered, if not exhaustive, reasons for positively evaluating animals.

To minimise the interference of any dissonance early on, the explicit attitude questionnaires were presented as disconnected from each other. The instructions advised respondents that there were two unrelated questionnaires in the research. They explained that a number of research projects were being run together to ease the burden of recruiting many participants and that respondents should not allow their answers to one questionnaire to influence their answers to the other because this would invalidate the research. The debriefing, however, advised participants that this was in fact not the case and that they had been misled to try to avoid people misrepresenting their views.

It was hypothesised that: (1) Vegetarians would have more positive attitudes towards farm animals than would meat-eaters; (2) Meat-eaters would tend to positively evaluate animals for instrumental reasons, while vegetarians would tend to positively evaluate animals for intrinsic reasons; (3) Vegetarians would have more negative attitudes towards animals' slaughter than would meat-eaters. Each of these hypotheses assess research questions (a) and (c) on p.65 about people's attitudes and the differences and similarities between meat-eaters and vegetarians. While attitude changes were predicted over the course of the research, these are specifically hypothesised as part of the dissonance experiment which is the expected stimulation causing attitude change, see the end of this section.

Implicit Association Test ("IAT") design

The IAT (Nosek, et. al., 2003) measures implicit attitudes that operate automatically, often without their owner's awareness, see section 3.1 for the theoretical foundations of this method. In this research, the IAT measured people's reactions to pictures of meat, farm animals, and farm animals being slaughtered.

The IAT is a computer program that combines target images with "good-meaning" and "bad-meaning" words. Participants categorise the image or word using one of two response keys: one assigned to the left hand, the other assigned to the right hand. Greenwald et. al. (1998) found that when highly associated categories shared a key (e.g. flowers and pleasant-meaning words), participants responded faster than when less associated categories shared a key (e.g. weapons and pleasant-meaning words). The IAT works because it is difficult to ignore labels that share the same required response. By pairing the responses, each implicit attitude interferes with the other.

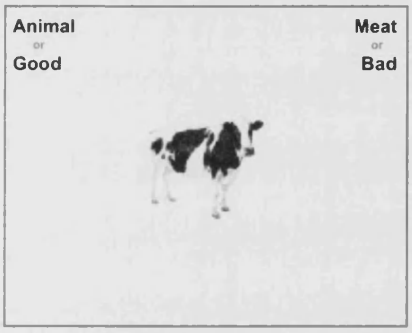
Greenwald et. al. (1998) found the IAT to be unaffected by intertrial intervals, the set size of categories, or by the assignment of response key (left or right) to the good-meaning words. They found the IAT to be robust, useful for diagnosing a wide range of attitudes, and twice as sensitive to evaluative differences as semantic priming techniques, hitherto used to measure implicit attitudes. It is also sensitive to consciously disavowed evaluative differences (e.g. showing 'racial' preferences for self-described unprejudiced participants, Greenwald et. al., 1998). Thus the IAT can avoid pressures to falsely enhance the appearance of consistency.

Since its creation, the IAT has been used by hundreds of independent researchers and the original designers now run a programme, Project Implicit, which averages over 15,000 tests a week and has earned accolades including a Webby Award (Anon, 2008).

Figure 4 and Figure 5 demonstrate two examples of a computer screen displaying IAT tests for different sets in this research. If participants saw a target picture, as in Figure 4, then they categorised it according to the labels at the top—"Animal" or "Meat"—using the associated left- or right-hand keyboard keys, ignoring the "Good" and "Bad" labels on the screen. If participants saw a target word, as in Figure 5, then they categorised it according to the labels "Good" or "Bad", ignoring the picture labels. In Figure 4 the correct response used the left-hand key to identify the target as an animal. The following screen then presented a word that was categorised as good or bad,

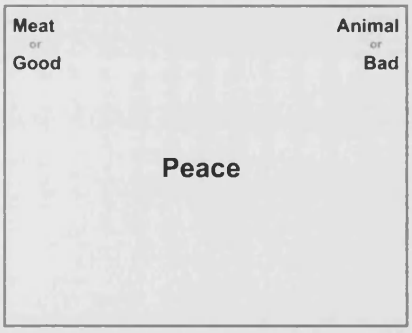
followed by a further screen showing a target picture of either meat or an animal, and so on. Although the types of images and words were randomised by the IAT program within each set, participants received instructions and practice trials to 'learn' the correct combinations of images with words for each set, followed by an equal number of tests within each set. Once a set of tests was complete, the next set changed the targets and repeated the procedure, ensuring that all target images were paired with good and bad words. See section 4.5 for further details about the procedure.

Figure 4: Example IAT test screen pairing Animal with Good and Meat with Bad



This stimulus screen requires the left key to be pressed to correctly categorise the cow as an "Animal", ignoring the "Good" and "Bad" labels that apply to target words not used in this screen.

Figure 5: Example IAT test screen pairing Meat with Good and Animal with Bad



This stimulus screen requires the left key to be pressed to correctly categorise "Peace" as a "Good" word, ignoring the "Meat" and "Animal" labels that apply to target images not used in this screen.

Comparing all of the results from the two sets represented by the example screens in the Figures above evaluates whether people prefer animals to meat or vice versa. If someone's implicit preference is for meat over animals, then their responses will be faster in the set of tests represented by Figure 5 than Figure 4. If, however, they prefer animals to meat, then their responses will be faster in the set of tests represented by Figure 4. Consequently the results are always relative to each other. A result showing that someone's responses were faster in the Meat/Good and Animal/Bad condition than in the Animal/Good and Meat/Bad condition shows only that meat is preferred to

animals, not that meat is necessarily considered good, or that animals are necessarily considered bad.

It was hypothesised that: (4) Participants would prefer meat pictures to animal pictures; (5) Participants would prefer animal pictures to slaughter pictures; (6) Vegetarians would demonstrate disparity between their explicit and implicit attitudes.

Hypotheses (4) and (5) assess research question (a) on p.65: What are people's attitudes towards farmed animals and eating meat—independently, as well as in the context of each other? They also assess question (b): Do people's explicit attitudes match their more automatic (non-conscious, or implicit) attitudes, and do any attitudes match people's reported behaviour? by measuring the implicit attitudes for comparison with explicit attitudes and reported behaviour. Hypothesis (6) assesses question (c): In what relevant ways do vegetarians' and meat-eaters' attitudes differ, and in what ways are they similar?

IAT pre-tests

Because this IAT used photographs to stimulate participants' responses, the photographs had to represent the target well and be easily recognisable. Three pre-tests ensured that the IAT produced the most reliable and valid data. The first pre-test identified which pictures best represented the target categories. The second pre-test ascertained whether colour was likely to skew the IAT results. The third pre-test measured how long it took to recognise images to control for complex images taking longer to recognise than simpler images.

Pre-test 1: representative photographs

26 male students, 41 female students, and one student who did not declare their sex rated photographs based on how well they typified a category. Each participant rated either photographs of animals, meat, or slaughter. (Participants were asked if they would rather not review pictures which were potentially distressing, but none did.) The categories were:

Animal categories (rated by 22 participants)	**Meat categories (rated by 22 participants)**	**Slaughter categories (rated by 24 participants)**
"A lamb"	"Meat from a lamb"	"A lamb being slaughtered"
"A cow"	"Meat from a cow"	"A cow being slaughtered"
"A pig"	"Meat from a pig"	"A pig being slaughtered"
"A chicken"	"Meat from a chicken"	"A chicken being slaughtered"

This was a paper and pencil test with an instruction sheet, a practice page, and seven pictures between which to choose for each of the four categories. Participants were instructed to choose the pictures which best exemplified the category, not those that they most liked. The participants viewed the photographs and ticked boxes alongside them to indicate their first and second choice on each page.

Each first choice was given a score of 2, each second choice was given a score of 1. A related t-test compared participants' choices and found a significant preference for the chosen images (t=10.60, p<0.001). The top three choices for each category are reproduced in Appendix E.

Pre-test 2: colours

The IAT was set up with blocks of red and green colours picked from target photographs using a bitmap colour matcher. Red and green were chosen because they featured in the photographs (blood and grass) and because they have associated cultural messages, for example, green = go/environmentally-friendly; red = stop/danger. Therefore, if no preference was found between these colours, then the IAT could proceed with colour images.

7 male students, 17 female students and one student who did not declare their sex participated in the tests which were run on three Dell optiplex 9x260 PCs (1.8GH, 512mb RAM with Pentium 4 processors). Participants viewed the display from a distance of about 65 cm and gave left responses with their left hand (using the D key) and right responses with their right hand (using the K key). The keyboard was placed with the space bar centered in front of participants so that no bias was given to the response keys. The IAT ran a series of instruction and informed consent screens which ensured that participants were seated and using the keyboard correctly. It also checked that participants could see the screen properly and, for this IAT only, that they were not colour-blind.

All tasks were administered in trial blocks of 40 trials. Each trial block started with instructions that described the category discriminations for the block and the assignment of response keys (left or right) to categories. Reminder labels positioned to the left or right, remained on screen during each block. Each new category discrimination consisted of a practice block followed by a block for which data were analysed. The IAT randomises the order in which targets are presented within trials and

alternates the initial pairing of targets with good- and bad-meaning words between participants.

Stimuli were presented against a light grey screen background, centred in the display and remaining on screen until the participant responded. After any incorrect response a large black X appeared below the stimulus until the participant hit the correct key.

This method is outlined in more detail following. A copy of the program is available in Appendix J.

A related t-test found a preference for green colour blocks over red (t=3.35, p<0.01). The pictures chosen by the typicality ratings were then converted to black and white (see Appendix F) for the recognition task.

Pre-test 3: recognition times

To measure recognition times, a computer-based task was run in the same way as the IAT where participants categorised the target images using left and right keys without any pairing with good- and bad-meaning words. The test was run on two computers with the same specification as the second pre-test. 11 female and 13 male students participated in the test. The test was run over two days and participants were recruited throughout the days. The instructions were the same as for the second pre-test except that participants were not excluded if they were colour-blind.

There were six versions of the test, which controlled for the effects of task presentation order. These versions mirrored the main IAT (following). Recognition times of all three variables (animal, meat and slaughter pictures) were measured in every possible variation of presentation order, producing around 120 latency measures for each of the 36 images. A copy of the program is presented in Appendix J.

The resulting mean recognition times for each image are presented in Appendix F. Some images were much more recognisable than others. The farm animal mean recognition latencies ranged from 537.1 to 575.0; the meat mean recognition latencies ranged from 601.7 to 691.5; the farm animal slaughter mean recognition latencies ranged from 624.3 to 815.8. The appropriate figures were later subtracted from the main IAT results for each image before the data were analysed.

Main IAT design

Figure 6 shows the combination of variables and Figure 16 in Appendix G shows how each of the six IAT programs used these combinations. Each participant completed one of the six programs.

Figure 6: IAT test alternatives

Set 1	Set 2	Set 3
animal v. meat	meat v. slaughter	slaughter v. animal
meat v. animal	slaughter v. Meat	animal v. slaughter

Set 4	Set 5	Set 6
meat v. animal	slaughter v. Meat	animal v. slaughter
animal v. meat	meat v. slaughter	slaughter v. animal

Each participant was measured in every possible target combination shown in Figure 6, but in a different order. For example, participants assigned to program 1 would have first experienced the animal/good, meat/bad pairing, followed by the meat/good and animal/bad pairing (set 1 in Figure 6). Then they would have experienced the slaughter/good, meat/bad pairing followed by the meat/good, slaughter/bad pairing (set 5 in Figure 6). Finally they would have experienced the slaughter/good, animal/bad pairing followed by the animal/good, slaughter/bad pairing (set 3 in Figure 6). Across all programs, all the set combinations were used evenly, counterbalancing any order effects.

Participants first learnt to categorise good words with the left key and bad words with the right key. One target category (e.g. animal) was then assigned to the left key and the other target category (e.g. meat) to the right key. The targets and words were then combined, appearing alternately. The targets were reversed before the target and words were again combined. One of the target categories was then replaced while the remaining target was once again reversed. The targets and words were then combined, before the order was again reversed, and so on. The words occupied the same position (i.e. good-meaning: left; bad-meaning: right) throughout all trials. A copy of the program is in Appendix J.

The experiment used 32 stimulus words: 16 good-meaning words, and 16 bad-meaning words. These words were used by Greenwald et. al. (1998) which, in turn, were selected from norms reported by Bellezza, et. al. (1986). This experiment did not use all of the same words, however: 'kill', 'murder' and 'death' were excluded from

this test because they could be too readily associated with images of animals being slaughtered, distorting the data. The 36 photographs were those used in the third pre-test. The stimulus words and pictures are in Appendix F.

Dissonance experiment design

This research drew together the two cognitive dissonance streams identified in section 3.2 of laboratory research, which may not represent real life due to an over-reliance on the induced compliance paradigm, and the real life observations that lack testability. It did so by quantitatively measuring any cognitive dissonance in participants' own attitudes simply by making their attitudes more salient in the context of each other, particularly through the IAT which, for example, as well as measuring participants' implicit attitudes, also focused participants' attention on their attitudes. The resulting focus on genuinely-held attitudes (rather than induced-compliance) better resembles conditions that may have happened naturally during the foot and mouth epidemic. Any dissonance found arose naturally from this process. The method is, therefore, both more ecologically valid than much previous laboratory work, and more empirically supported than most previous discussion about dissonance.

Because the dissonance measure relied on the questionnaire and the IAT, rather than explicitly manipulating independent variables, the only uniquely identifiable part of the dissonance experiment is the measure of dissonance itself. Dissonance was therefore the dependent variable in this experiment, expected to increase during the research due to the concentration on attitude stimuli (independent variables) and reduce following the opportunity to express attitude change. However, any attitude change was due to the increase in dissonance, so, in this sense, dissonance was also the independent variable, manipulated by the research, which was expected to stimulate attitude change (dependent variables).

This study used Elliot and Devine's (1994) self-report measure of dissonance (see section 3.2 for the theoretical background) at three stages to follow participants' dissonance levels as they progressed through the research. Elliot and Devine's (1994) method divide dissonance into 'uncomfortable, 'uneasy' and 'bothered'. Participants considered their feelings about the relationship between their attitudes towards farm animals, animals' slaughter and eating meat. However, in contrast to many other experimental measures of dissonance (including Elliot and Devine's, 1994), where the

manipulated variables were counter-attitudinal essays in the induced-compliance tradition, this research focused participants' attention on their own, genuinely held, attitudes. Consequently the design is most akin to the free-choice paradigm (see p.50).

It was hypothesised that: (7) Dissonance would increase between the first and second measures; (8) Dissonance would reduce following attitude change; (9) Meat-eaters would report greater dissonance than vegetarians through the course of the research; (10) Attitudes would change in the direction of pre-existing behaviours at the end of the research. Thus meat-eaters' attitudes would become more positive towards meat and more negative towards animals; vegetarians' attitudes would become more positive towards animals and more negative towards meat.

Hypothesis (7) assesses research question (d) on p.65: Does simply focusing on genuinely held, relevant attitudes cause dissonance? Hypotheses (8) and (9) assess research question (e): Is consonance restored through attitude change and, if so, do attitudes move in the expected direction? Hypotheses (9) and (10) again assess research question (c), looking for patterned differences between meat-eaters and vegetarians.

4.5 Quantitative procedure

Order of research

Figure 7 draws together all of the quantitative methods, demonstrating how they complement each other.

Figure 7: Order of research and predicted dissonance in the quantitative research stage

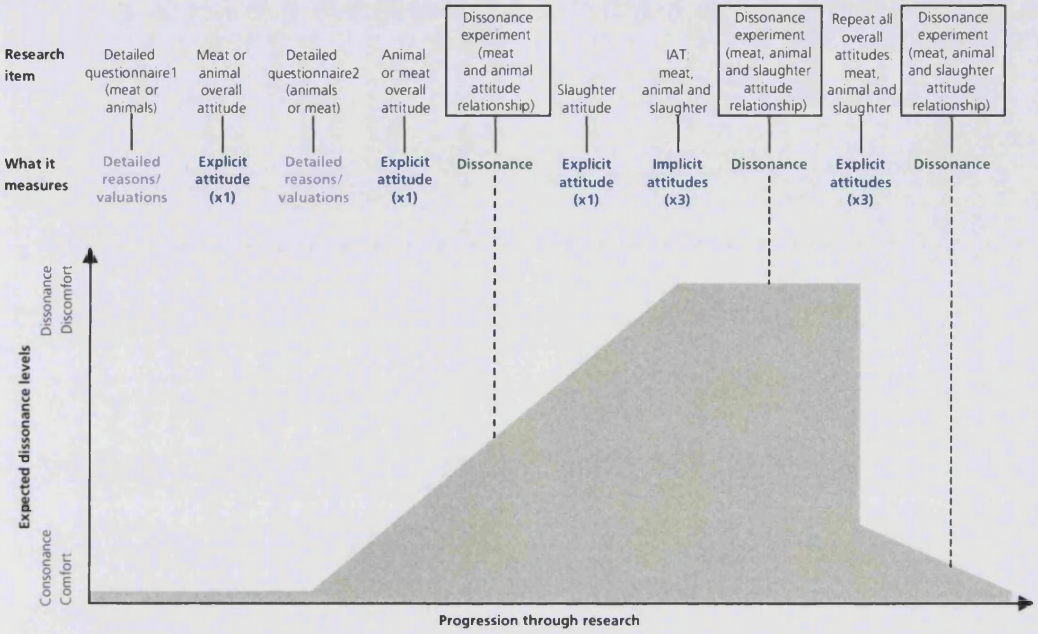


Figure 7 shows that participants first answered a detailed questionnaire (about either meat or animals, counterbalanced between participants) followed by their overall explicit attitude evaluation, then answered the other detailed questionnaire and overall explicit attitude evaluation. Until this point, instructions told respondents that there was no relationship between the questionnaires to minimise participants' desire to appear consistent. This disconnection between the questionnaires was destroyed by the first dissonance measure, which deliberately connected the topics.

The same dissonance measure was used three times, the same overall attitude evaluations were measured twice. If dissonance was going to be experienced, then it should have increased between the first and second measure, reflecting the effects of focusing on the relevant attitudes, but consonance should have been restored by the third measure because the final explicit overall attitude evaluations allowed participants to modify their attitudes, which Elliot and Devine (1994) found (in tune with Festinger's, 1957, theory) quickly achieved psychological comfort.

The IAT was expected to increase any potential dissonance for meat-eaters precisely because all existing theory and research says that people avoid connecting meat to animals through animals' slaughter (see section 2.3). The deliberate strategies, cultural aids (such as dissociation variables), or psychological abilities, like denial, are said to aid

this avoidance. The IAT, in presenting images of meat, animals and slaughter together, and demanding a categorisation of these images, prevented people from easily employing the avoidance strategies upon which previous theories insist they rely.

If dissonance occurred, then attitudes in the final explicit attitude measure were expected to polarise in the direction of existing behaviour patterns: i.e. dietary choice. This effect, in tune with previous free-choice experiments, is called the 'spreading of alternatives' (see page 50). Meat-eaters were expected to enhance their evaluation of meat and decrease their evaluation of animals; vegetarians' attitudes were expected to move in the opposite direction.

Thus, the quantitative stage assessed all of the research questions (p.65), sometimes discretely and sometimes simultaneously. Questions (a) and (b) about people's explicit and implicit attitudes towards meat and animals, independently as well as in the context of each other and in comparison to their reported behaviour are measured by the attitude questionnaires and the IAT. These measures also assessed question (c) concerning differences between meat-eaters and vegetarians. But, as just discussed, the IAT had the secondary advantage of stimulating any potential dissonance, enabling the dissonance measures and assessing research questions (d) and (e) about the causation of dissonance and consonance restoration. Again, the expected polarisation of attitudes in the direction of existing behaviours also directly assesses question (c) about the differences between meat-eaters and vegetarians.

Procedure

78 participants, 64 meat-eaters and 14 vegetarians, were recruited from the LSE campus over two days, and a month later from a corporate vegetarian society. The vegetarian sample was small because vegetarians were used only to contrast with meat-eaters who were the focus of this study. Participants were offered entry into a prize draw as an incentive. Each participant was given a number to preserve their anonymity while allowing cross-referencing between the methods. Following standard consent guides, all participants first completed the explicit attitude questionnaires, counterbalanced between participants, then the discomfort measure, the IAT, another discomfort measure, explicit overall attitude evaluations and the final discomfort measure (see Figure 7, page 78). A debriefing followed and all participants were given a leaflet allowing them access to further information if necessary.

The IAT used pictures showing animals being slaughtered. Participants were warned that some of the pictures might be distressing before proceeding and offered the opportunity to withdraw from the research at any stage. An ethics committee approved this research.

Materials

Questionnaires, pencils, 6 computers (Dell optiplex 9x260 PCs 1.8GH, 512mb RAM with Pentium 4 processors) and 1 laptop loaded with the IAT program.

Preparation of questionnaire data

The questionnaires were coded from 1, "Strongly disagree", to 11, "Strongly agree", with 6 being "Neither".

Preparation of IAT data

The response latencies in milliseconds for each trial formed the IAT data.

As Greenwald et. al. (1998) also found, these tests resulted in a small proportion of extremely fast and slow responses. These typically indicate anticipatory responses prior to perceiving the stimulus or momentary inattention (Greenwald et. al., 1998). These values lack theoretical interest, distort means and inflate variances. In line with Greenwald et. al. (1998), therefore, values below 300 ms and those above 3,000 ms were recoded to purify the data. Recognition times recorded by the third pre-test, were then subtracted from each target test response time. The difference in response times, minus the recognition times from the third pre-test, provided the measure of implicit attitudinal difference between the target categories.

Chapter 5 now presents the qualitative results, and Chapter 6 the quantitative results.

CHAPTER 5

Qualitative research results

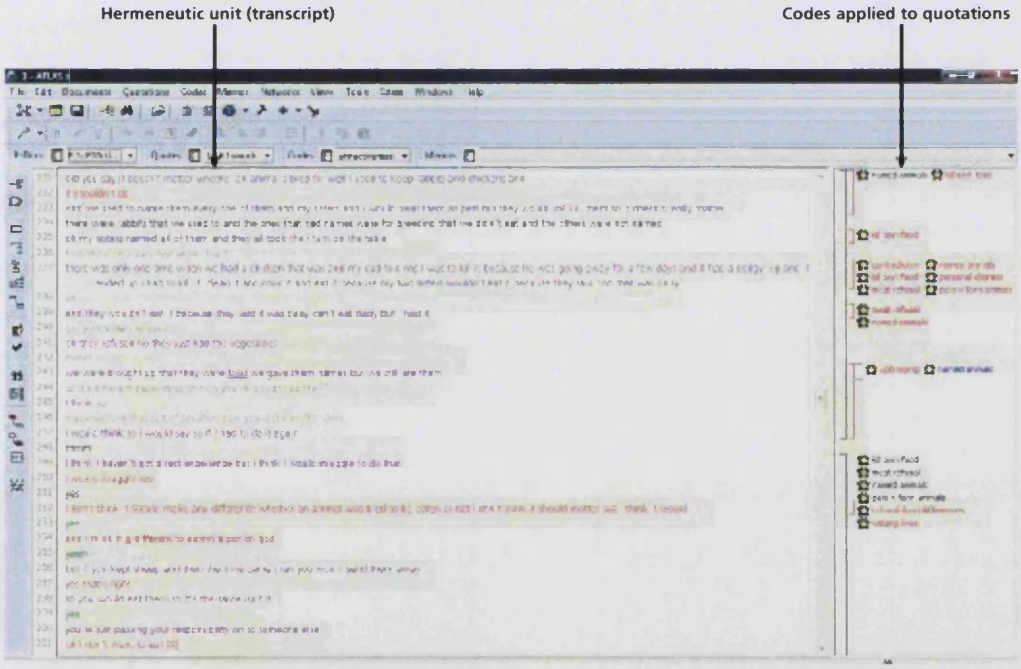
All focus group participants ate meat and all but one considered themselves to be an 'animal-lover'.

5.1 Method of analysis

Focus group tape recordings were transcribed and the transcripts uploaded into Atlas.ti V5.0. Atlas has become one of the most prominent tools for qualitative data analysis (Muhr and Friese, 2004) by allowing the user to code quotations, which classifies sets of related information units for comparison, and then observe the relationships between these codes.

Atlas does not automatically analyse data, but supports human interpretation. Codes may overlap each other, and quotations often receive more than one code, as participants discuss different concepts in relation to each other. Figure 8 shows a screenshot demonstrating this.

Figure 8: Atlas.ti hermeneutic unit editor



When the transcripts were coded, co-occurring codes were imported into networks to analyse their relationships with each other at a level abstracted from the transcripts themselves. Networks convert the codes assigned to quotations into nodes that can be visually manipulated with reference to each other (see an example in Figure

9, p.85). Nodes are then manually linked to each other with relationship labels. The most frequent relationship between nodes in these networks was "is associated with", shown by the symbol "==". This represents relationships between nodes that share some commonality but are not synonymous or derivative. Another frequent relationship in these networks was "contradictory", shown by the symbol "<>".

Atlas can then identify the 'groundedness' and 'density' of each code. 'Groundedness' is defined by the number of quotations associated with the code; large numbers indicate strong evidence for the code. 'Density' is defined by the number of links to other nodes; large numbers indicate a high degree of theoretical density for the concept (Muhr and Friese, 2004). Usually, the more times a code is applied, the more opportunity it has to relate to other codes thus, to some extent, groundedness and density are likely to increase together.

Table 2 lists the codes identified in these transcripts in descending orders of goundedness and density. The networks associated with each of these codes are presented alphabetically in Appendix C.

Table 2: Codes in descending orders of groundedness and density

Codes in descending order of groundedness

Code	Grounded	Density
Intrinsic evaluations	57	44
Animal treatment	56	46
Instrumental evaluations	41	43
Animals' experiences	40	39
In/consistency	34	44
Right/wrong	30	35
Personal distress	28	35
Kill own food	27	30
Valuing lives	26	38
Pets v farm animals	24	29
Meat refusal	23	27
Animal suffering definition	22	37
Human superiority/hierarchy/control	19	27
Phil-moral relativism	18	21
Humans v animals	18	21
Animal lover	17	32
Meat-eating morality	15	40
Dissociation	15	29
Knowledge/ignorance	14	28
Consumer difficulty	14	28
Upbringing	13	15
Health	13	6
Taste	11	21
Industry demands	11	16
Eat dogs/cats	10	19
Animals' values	10	5
Attractiveness	9	19
Named animals	9	13
Veggie difficulties	9	6
Animal not meat	8	27
Personal contentment	8	25
Unjustified	8	23
Anthropomorphism	8	16
By-products	8	15
Individuals vs unknown	7	22
Affection	7	18
Consumer choice	7	15
Over-emotional	7	14
Life worth living	7	10
Hunting	7	3
Animals' souls	6	18
Natural/eco balance	6	13
Cultural food differences	6	10
Logic of larder	6	10
Reducing meat	5	18
Compassionate meat-eating	4	20
Intensive farming	4	14
Squeamishness	4	14
Unconcerned	4	14
Get something back	4	11
Fairness	4	9
Fluffy brigade	4	8
Changing meats	4	4
Intellect vs. Emotion	3	19
Tradition	3	13
Economy	3	10
Animals know no different	3	8
Endangered species	3	5
Veggies unhealthy	3	4
Veggie temptation	3	3
Worthless life	3	3
Repulsive	2	5
Veggie recategorisation	2	3
Dislike meat	2	2
Slaughter	1	19
Pay more/quality	1	4
Veggie propaganda	1	3
Backward justification	1	2
Vegetable life	1	2
Support farmers	1	1

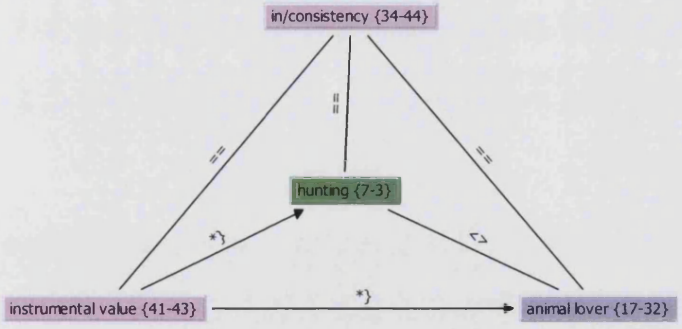
Codes in descending order of density

Code	Grounded	Density
Animal treatment	56	46
Intrinsic evaluations	57	44
In/consistency	34	44
Instrumental evaluations	41	43
Meat-eating morality	15	40
Animals' experiences	40	39
Valuing lives	26	38
Animal suffering definition	22	37
Right/wrong	30	35
Personal distress	28	35
Animal lover	17	32
Kill own food	27	30
Pets v farm animals	24	29
Dissociation	15	29
Knowledge/ignorance	14	28
Consumer difficulty	14	28
Meat refusal	23	27
Human superiority/hierarchy/control	19	27
Animal not meat	8	27
Personal contentment	8	25
Unjustified	8	23
Individuals vs unknown	7	22
Phil-moral relativism	18	21
Humans v animals	18	21
Taste	11	21
Compassionate meat-eating	4	20
Eat dogs/cats	10	19
Attractiveness	9	19
Intellect vs. Emotion	3	19
Slaughter	1	19
Affection	7	18
Animals' souls	6	18
Reducing meat	5	18
Industry demands	11	16
Anthropomorphism	8	16
Upbringing	13	15
By-products	8	15
Consumer choice	7	15
Over-emotional	7	14
Intensive farming	4	14
Squeamishness	4	14
Unconcerned	4	14
Named animals	9	13
Natural/eco balance	6	13
Tradition	3	13
Get something back	4	11
Life worth living	7	10
Cultural food differences	6	10
Logic of larder	6	10
Economy	3	10
Fairness	4	9
Fluffy brigade	4	8
Animals know no different	3	8
Health	13	6
Veggie difficulties	9	6
Animals' values	10	5
Endangered species	3	5
Repulsive	2	5
Changing meats	4	4
Veggies unhealthy	3	4
Pay more/quality	1	4
Hunting	7	3
Veggie temptation	3	3
Worthless life	3	3
Veggie recategorisation	2	3
Veggie propaganda	1	3
Dislike meat	2	2
Backward justification	1	2
Vegetable life	1	2
Support farmers	1	1

Auto-colour tool

Atlas's auto-colour tool demonstrates each node's groundedness and density. To the green default colour, the auto-colour tool adds red or blue pigment. Groundedness is shown by the increase of red, density by the increase of blue. An example is demonstrated by the network in Figure 9. Hunting was associated with few quotations (seven), and linked to only three other nodes, thus retaining much of its original green colouration, but the nodes representing the codes 'in/consistency' and 'animal lover' show that many quotations were coded as about in/consistency, and that quotations about loving animals were associated with many other codes. Thus 'in/consistency' was a heavily grounded code, while 'animal lover' was a particularly dense code. The same information is evident numerically within brackets in the nodes. The relatively large numbers associated with the 'in/consistency' node can be misleading, however. Clearly the node contains a lot of blue colour, as well as red, but against the 'animal lover' node it appears predominantly red. The colours here show that relative to other nodes, 'in/consistency' is particularly well grounded. The auto-colour tool thus makes relatively high and low levels of groundedness and density stand out, meaning that codes that are heavily or seldom used for coding or network-building are easily identifiable.

Figure 9: 'Hunting' network



Semantic layout algorithm

Atlas's semantic layout algorithm placed the nodes within each network into optimal positions, with the nodes having the highest connectivity within each network (not necessarily the same as overall density) into central positions. Minimal manual refinement of the nodes' placement was necessary to avoid overlapping nodes, but retained the shape of relationships.

5.2 Analysing the most grounded and dense codes

Some of the most grounded and dense codes are analysed in this section more closely (analysis of the other codes becoming repetitive). Unfortunately, the complex nature of many networks makes them impractical to include here. Consequently, all of the networks used in this analysis are available in Appendix C in alphabetical order, while Figure 10 has simplified the presentation of codes to be discussed while retaining the colour-coding and grounded and dense data. The codes have been grouped into related categories. These categories are not discrete. For example, concerns about animals' treatment are connected to ideas about morality, but were more often discussed in terms of the effect of treatment on animals. For this reason, concerns about animals' treatment have been categorised as predominantly about animals' perceived intrinsic evaluations. Nevertheless, such meta-categorisations were not the aim of this research and are made primarily for ease of presentation; they are therefore tentative and would require further research to validate them (if necessary).

Figure 10: Codes categorised by related meaning

Instrumental evaluations (41-43)
Affection (7-18)
Attractiveness (9-19)
By-products (8-15)
Economy (3-10)
Endangered species (3-5)
Get something back (4-11)
Natural/eco balance (6-13)
Tradition (3-13)

Others' false views
Anthropomorphism (8-16)
Fluffy brigade (4-8)
Over-emotional (7-14)
Squeamishness (4-14)
Veggie propaganda (1-3)
Veggie recategorisation (2-3)
Veggies unhealthy (3-4)

Morality (15-40)
Animal lover (17-32)
Animals know no different (3-8)
Backward justification (1-2)
Compassionate meat-eater (4-20)
Consumer difficulty (14-28)
Cultural differences (6-10)
Fairness (4-9)
Kill own food (27-30)
Meat refusal (23-27)
Moral relativism (18-21)
Pay more/quality (1-4)
Personal contentment (8-25)
Personal distress (28-35)
Reducing meat (5-18)
Right/wrong (30-35)
Unconcerned (4-14)
Unjustified (8-23)
Upbringing (13-15)

Recategorisation
Animal not meat (8-27)
Eat dogs/cats (10-19)
Individuals vs unknown (7-22)
Named animals (9-13)
Pets vs farm animals (24-29)

Pro-meat
Consumer choice (7-15)
Health (13-6)
Human superiority (19-27)
Humans vs animals (18-21)
Hunting (7-3)
Logic of larder (6-10)
Support farmers (1-1)
Taste (11-21)

Intrinsic evaluations (57-44)
Animal suffering def'n (22-37)
Animal treatment (56-46)
Animals' experiences (40-39)
Animals' souls (6-18)
Animals' values (10-5)
Intensive farming (4-14)
Life worth living (7-10)
Slaughter (1-19)
Valuing lives (26-38)

In/consistency (34-44)
Dissociation (15-29)
Intellect vs emotion (3-19)
Knowledge/ignorance (14-28)

Positively evaluating animals

Participants wrote down their own reasons for positively evaluating animals and then numbered them in order of each reason's importance or persuasiveness, starting at 1 for the most important or persuasive reason:

Figure 11: Reasons for and against positively evaluating animals

Reasons for positively evaluating animals	Reasons against positively evaluating animals
1. Unconditional love	1. Pass on disease
2. Companionship	2. Natural fear of *all* animals
3. Healthy exercise	3. Kill other animals
4. Security	4. Mess up the house
5. Ecological balance	5. Mess up footpaths and gardens
6. Enrichment to our world	6. Keep you awake at night
7. Teaches children love and responsibility	

All of the reasons for positively evaluating animals that participants explicitly offered, shown in Figure 11, are based on what good they do to people. In other words, animals are only evaluated instrumentally according to these reasons. This lack of explicit recording of intrinsic evaluations, although animals were talked about as if they did possess intrinsic qualities which were taken for granted, is crucial, and returns throughout the analysis. The intrinsic reasons for positively evaluating animals, which all groups demonstrated implicitly despite not explicitly stating any such reasons, together with discussions about animals' treatment, form three of the top four most grounded and dense in the analysis (see Table 2, p.84).

Instrumental reasons for positively evaluating animals, show that animals' uses were positively evaluated. However, these quotations also show the tension between participants as 4C disagrees that instrumental reasons for evaluating animals are valid. This participant described herself as a 'theoretical vegetarian' and evaluated animals highly for intrinsic reasons:

Transcript line	Speaker code	
47.	4C	I can't see any justification I see no justification whatsoever I really don't I think we use animals
48.	4B	Yes
49.	Int	that sounds as if that's a negative thing is that your view?
50.	4C	it's my view that animals should never be made pets in the first place going back to the old caveman
51.	Int	in terms of other domesticated animals then
52.	4C	I think we use them for our own solace our own gratification
...		
55.	4D	well they're a product aren't they
56.	4C	I would find that more difficult there again we use them by good rights we should be gatherers really not hunter gatherers
...		
550.	4C	yes we're with you there using it as a product
551.	4A	I don't think there's anything disgraceful about that if you treat them responsibly
...		

579.	4C	you don't care about them because you don't like them facially
580.	4B	well I can't think of a good use for a giraffe
581.	4A	oh a giraffe is beautiful
582.	U	Yes
583.	4A	they're useful just to look at really isn't it
584.		I mean yes
585.	4A	camels look very ugly but they're useful to a lot of people so a camel can carry on as far as I'm concerned
586.	U	that's another product
587.	4C	they're a nasty vicious animal
588.	4A	well they are nevertheless they are very useful
589.	4C	well there you are you only care about them if they're useful to you then
590.	4A	useful or attractive or appealing yes
591.	4B	if you didn't have a car you'd probably find a donkey very useful
592.	4A	useful or attractive any of those categories are get my vote

Note: Speaker codes identify group by number and participant by letter; the interviewer is identified by "Int"; speakers whose voice could not be identified from the recording are classified as "U" (unidentifiable).

Instrumental reasons for positively evaluating animals stemmed from receiving something in return from animals, for example affection or appreciating their beauty, by-products from their bodies, benefits to the economy and nature, as well as traditional ways of life, see Figure 10 (p.86). Participants were quick to offer instrumental reasons for positively evaluating animals and only hinted at positively evaluating animals for intrinsic reasons through their views about the rightness or wrongness of treatment. For example, disapproval of causing animal suffering indicates that an animal's perceived intrinsic ability to experience suffering was a cognition held by all participants. The propensity of an animal to experience was deemed too obvious to remark upon. So while participants did evaluate animals for intrinsic reasons, they did not voluntarily explicitly say so.

When asked, participants in group 3 answered immediately that other species could experience pleasure and pain, fear and happiness. There wasn't any discussion about this, the answer was so obvious to them. However, there was disagreement about whether animals suffered through farming, as represented by the following quotations:

Transcript line	Speaker code	
7.	3D	... well I'm not an expert but having worked in the food industry to an extent I'm aware of well not necessarily in all cases but if it's most animals that the majority of them don't suffer I haven't actually witnessed slaughter as well
8.	3A	yes I have I agree with that
9.	Int	do you work in farming or
10.	3A	no I work in transport but I've been to a slaughter house
11.	Int	Right
12.	3A	when I was a child there was one next to my school
13.	Int	oh really
14.	3A	and I used to look out of the gate and watch the animals and I've been to one in Holland and I've been to a cattle market and I would say in the main they're ok
15.	3D	Yes

16.	3A	there are some but if the slaughterman knows what he's doing
17.	Int	does it depend then on the quality of the equipment and the men
18.	3A	yes I would say that
...		
25.	3C	I used to keep sheep and pigs and they always know something is going on
26.	3B	yes they do
27.	3C	and they get distressed and they seem to know they're about to be slaughtered when they're being rounded up and herded in to the thing and the butcherman's there they seem to sense that that's it and I'm a meat eater but I still think that well what's suffering you know being rounded up the distress of all that and then they're stunned they're out cold in goes the bolt and at that point I don't know if they feel anything or not, probably not, but I still think it's got to hurt even if it's only for an instant
28.	3B	but it's suffering if they are disturbed before they are actually slaughtered then that is suffering whether it's being upset because they are moved or whether it's because they're kept in I mean if they're moved if they're on a long journey and they're in difficulty that's where I think suffering might be as well
29.	U	Right
30.	3B	and thing is I don't know because I have never visited a slaughterhouse and this is probably looking at this it's probably me being emotive about it rather than er so erm I don't know I don't know but I think if my [X] has driven pigs to be slaughtered and he says that pigs that all pigs are always very distressed when they go and
31.	U	Right
32.	3B	and when they're driven they get very distressed that is suffering and whether or not they are hurt or not they are suffering I think
33.	U	I think from the point of being stunned and then killed there's probably not a lot of suffering there

Note: Speaker codes identify group by number and participant by letter; the interviewer is identified by "Int"; speakers whose voice could not be identified from the recording are classified as "U" (unidentifiable).

Participants felt that some people took their evaluations of animals too far, having warped notions of their natures by anthropomorphising them, or by becoming over-emotional towards them. This was considered negative for animals as well as for people because suffering animals' lives could be wrongfully prolonged by people too weak to mercifully euthanase animals in distress. These concerns for animals' experiences demonstrate how participants evaluate animals for intrinsic reasons, although these concerns were often expressed through the perceived rightness, or more often wrongness, of animals' treatment by humans. Thus it was the animals' experience that was important, but the morality of treatment that warranted judgement and articulation:

Transcript line	Speaker code	
263.	1A	across I think it's scandalous and there's no need for it because we've had New Zealand meat for years and years and years which is frozen and it's been fine the only reason that these animals go through this torture is in order to keep the Italian and French abattoirs open and I think that is I find that very distressing

Note: Speaker codes identify group by number and participant by letter; the interviewer is identified by "Int"; speakers whose voice could not be identified from the recording are classified as "U" (unidentifiable).

Another intrinsic reason to positively evaluate animals was life itself: explicit in this view:

Transcript line	Speaker code	
466.	4C	well it's the same question if you go back to that same point that everything is created however it's created it has a right to life then you have no right because you are so called superior have a superior intellect you have no right to dominate any other right why should you have any right to dominate any other life

Note: Speaker codes identify group by number and participant by letter; the interviewer is identified by "Int"; speakers whose voice could not be identified from the recording are classified as "U" (unidentifiable).

Two participants in different groups were concerned about the cost to animals in creating meat which, although others understood and agreed with their concerns, they did not feel to the same extent. The two that did, clearly experienced dissonance. The difference between them and their fellow group members seemed to be in their emphasis on animals' experiences: their emphasis on intrinsic, versus instrumental, reasons for positively evaluating animals. The following quotation demonstrates 1F's concern for animals' lives and experiences, something with which his fellow group members identified:

Transcript line	Speaker code	
243.	1F	but I mean I I grew up to eat meat and also brought up with pets ... the only meat I eat now is chicken but even that I've thought to myself really do I want to eat that you know could I survive on fruit vegetables
244.	1B	is that from the animals' point of view or is that just-
245.	1F	well I think as I got older I came to appreciate life more is that just plainly due to the fact that I'm getting to the end of my life so it becomes more precious to me erm because I know I can you know I can you know avoid the smallest animal in the road or something like that you know or what have you or I hate to kill an ant you know or something like that that's how I feel and er and I'm becoming more emotional with regards to animals so er and I do wonder you know why that is whether it's just a case that you you know as you become more educated when I look back as a child and as a teenager you never knew how food was produced
246.	1C	no that's right I was going to say that
247.	1F	and when you start to learn these things and you see what happens to these animals and everything else and you think to yourself you know "well is that fair?"
248.	1U	Mmm
249.	1F	you know they have as much right to life as I have you know do I wanna be would I wanna be treated like that and I think "no" but you know there is that part of me that er well I eat chicken so that's I don't know and I think "well could I live without as well really"

Note: Speaker codes identify group by number and participant by letter; the interviewer is identified by "Int"; speakers whose voice could not be identified from the recording are classified as "U" (unidentifiable).

Participant 1F positively evaluated all animals and saw even human 'positive' interference with them (e.g. turning them into pets) as wrong. Many participants did draw a distinction between pet and farmed species, and this distinction brought with it

different ideas about treatment and the level of human emotion that could be afforded them.

Transcript line	Speaker code	
278.	1F	well I think for me ... it's someone who cares about what happens to animals you know any animals no matter how small or big it is really that they have a right to live among wild and everything else and not to be interfered with really I think that's that's how I see it really because I think to have a pet and to you know and to be obsessed and humanise it because that's what we as human beings do we humanise animals and they're not humans we do it with dogs cats pigs
...		
291.	1U	no I've got this distinction between domestic and farmed which is product you know I love to see cows in the field but I love to see it on my plate as well so

Note: Speaker codes identify group by number and participant by letter; the interviewer is identified by "Int"; speakers whose voice could not be identified from the recording are classified as "U" (unidentifiable).

Figure 10 (p.86) demonstrates distinctions between animals based on their categorisations as 'pets v farm animals', 'animal not meat', 'individuals vs unknown', and 'named animals'. Further codes especially represented the perceived erroneous views of animals by others, e.g.: 'anthropomorphism', 'fluffy brigade', 'over emotional', 'veggie recategorisation'.

Individuals, named or pet animals could be evaluated and treated differently to unknown, unnamed or farmed animals, even if they were from the same species. This group demonstrates views from people who had first hand experience of animals that could cross the boundary between pet and food distinctions:

Transcript line	Speaker code	
231.	3A	did you say it doesn't matter whether an animal's bred for well I used to keep rabbits and chickens and
232.	3B	It shouldn't do
233.	3A	and we used to name them every one of them and my sisters and I would treat them as pets but they would still kill them so it doesn't really matter
234.	3U	there were rabbits that we used to and the ones that had names were for breeding that we didn't eat and the others were not named
235.	3A	oh my sisters named all of them and they all took their turn on the table
236.	Int	how did your sisters feel about that?
237.	3A	there was only one time when we had a chicken that was and my dad told me I was to kill it because he was going away for a few days and it had a dodgy leg and it ended up I had to kill it, clean it and cook it and eat it because my two sisters wouldn't eat it because they said "no that was daisy"

Note: Speaker codes identify group by number and participant by letter; the interviewer is identified by "Int"; speakers whose voice could not be identified from the recording are classified as "U" (unidentifiable).

Quotations about 'us versus them' and discussions of human superiority, hierarchical positions and rightful control over other species, were related to ideas about

nature and environmental balance, which could also be associated positively with loving animals and their place in nature. One participant was emphatic that humans were superior to other animals:

Transcript line	Speaker code	
421.	4A	intellectually morally and also physically because we have all sorts of things like coordination of hand eye and other things which animals don't and therefore although a horse is faster than we are on the whole and also physically we are superior too and so I rest my case

Note: Speaker codes identify group by number and participant by letter; the interviewer is identified by "Int"; speakers whose voice could not be identified from the recording are classified as "U" (unidentifiable).

This participant represented the opposite end of the scale from the two participants who struggled with their meat-eating. While those participants identified with animals and did not find acceptable reasons for animals' uses by people, participant 4A considered that people were superior to other animals and that this superiority justified animals' subjugation.

Animals' experiences and treatment

As already demonstrated, many codes were about animals' experiences and treatment: 'animal suffering definition', 'animal treatment', 'animals' experiences', 'life worth living' and 'worthless life' all being closely related as shown in Figure 10 (p.86). All of these codes implicitly represent animals' perceived intrinsic qualities.

Although there was a distinction between animals' experiences and how they were treated, these ideas are related. Sometimes participants talked about how an animal must suffer, or be content, under certain conditions, but more often they talked about the rightness or wrongness of conditions and treatment without specifically mentioning the animals' experience. These codes therefore also relate to views about morality, valuing lives, fairness, what makes a life worth living, and the perceived rightness or wrongness of animals' treatment and experiences. There is a continuum of arguments here, ranging from whether some concern over animals' treatment is an over-emotional reaction by 'others', or whether some animals' treatment simply cannot be morally justified.

Some participants were concerned about the failures of the stunning and inspection systems in slaughterhouses:

Transcript line	Speaker code	
690.	4U	having watched a lamb being slaughtered in Crete while all the other animals stood around bleating piteously it was really really

		horrible and it does make you think then
691.	4A	but you wouldn't see that here
692.	4C	it doesn't make any difference
693.	4B	only down an abattoir
694.	4C	it doesn't make any difference it's still done
695.	4D	but it's the method
696.	4C	they're not always stunned properly
697.	4A	well no but you saw this in some xxx so that was their way of life and their way of doing things
698.	4U	I mean we would like to think that it was all terribly humane and terribly wonderful but in between the inspectors visiting I expect there's lots of things going on that we wouldn't like to know about
699.	4U	Yes

Note: Speaker codes identify group by number and participant by letter; the interviewer is identified by "Int"; speakers whose voice could not be identified from the recording are classified as "U" (unidentifiable).

Industry demands and intensive farming shared much of the responsibility for what participants deemed to be unjustified and poor treatment and experiences.

Participants felt that animals should not be treated cruelly and that if their lives were to be taken, then these lives should be comfortable and positive and their deaths as painless as possible (although, as just discussed, there was disagreement about whether this was the case in modern farming conditions). On the whole, farmed animal welfare was deemed important and participants argued that they did not want animals to suffer, but for many participants their access to meat took priority over animals' concerns.

While there was consensus across groups that eating meat causes some harm to animals, one group was undecided about whether it was cruel or not. The issue turned on the definition of cruel, but also, again, on whether animals could be positively evaluated for intrinsic reasons or not:

Transcript line	**Speaker code**	
182.	4B	Cruel
183.	4C	I'm finding that a bit difficult to answer
184.	4U	Yes
185.	4B	it's cruel to kill it
186.	4F	it can't be cruel can it
187.	Int	what do you take cruel to mean?
188.	4U	Well
189.	4U	Unkind
190.	4U	Unkind
191.	4B	very unkind
192.	4F	yes unkind
193.	4C	savage I would say more than unkind savage
194.	4F	to kill an animal
195.	4B	to kill yes
196.	4U	I'm quite happy to eat it from the supermarket without even thinking about it because I like meat
...		
202.	4F	how do you kill it you don't torture it to death you don't want it to have a lingering death

203.	4C	no that would be cruel
204.	4U	if you killed it quickly and outright
205.	4B	yes that wouldn't be cruel
206.	Int	that would be humane would it
207.	4B	yes that would be humane
...		
412.	4E	yes well it's got to be harmed to kill it
413.	4F	well it's got to be harmed to create meat
414.	4U	Yes
415.	Int	yes?
416.	4B	Yes

Note: Speaker codes identify group by number and participant by letter; the interviewer is identified by "Int"; speakers whose voice could not be identified from the recording are classified as "U" (unidentifiable).

There was often much agreement about the perceived rightness or wrongness of animals' treatment, but hunting proved highly contentious (so contentious that the issue was dropped to avoid a potential argument):

Transcript line	Speaker code		
296.	1E	well I consider myself an animal lover and I've hunted ever since I was a boy and at one time I used to love the thrill of the chase and everything that went it's it's not so important to me now but I would I would no more go and kick my pet dog or beat it or you know pick the cat up and sling it out by the scruff of the neck than than anybody	[throughout this discussion, 1F vigorously shook his head]
297.	Int	Mmm	
298.	1E	I think I think that er you know the last thing I want to do is get into a discussion on the ethics of fox hunting or whatever it might be but I think that my like of country sports or bloodsports whatever way you choose to look at it is for what it does to the country and what it's done for the country	
299.	Int	Mmm	
230.	1E	and what would happen if it doesn't continue rather than the actual scene and the sight of hounds hunting a wild animal and what that does	
231.	Int	Mmm	
232.	1E	and I consider myself an animal lover and I will I will catch a butterfly in our conservatory and put it out through the window you know	
233.	Int	Mmm	
234.	1E	or a bee you know we meticulously catch bees with glasses and a spatula you know	
235.	1A	all the time [laughter]	
236.	1E	although I think it's the er it's the two you know you can't really equate the two very well at all	

Note: Speaker codes identify group by number and participant by letter; the interviewer is identified by "Int"; speakers whose voice could not be identified from the recording are classified as "U" (unidentifiable).

1E's position is similar to Hills's (1993) finding that people do not consider issues of equality and dominance to be related. In contrast, for Participant 1F, who said nothing but glowered at 1E and shook his head throughout, these issues are very related.

Taste and meat refusal

Participants wrote down their own reasons for and against eating meat and then numbered them in order of each reason's importance or persuasiveness, starting at 1 for the most important or persuasive reason:

Figure 12: Reasons for and against eating meat

Reasons for eating meat	Reasons against eating meat
1. It taste[s] good	1. Animal welfare (intensive farming)
2. Nutritional factor	2. Live exports
3. By-product from dead animals (skin, milk, wool etc.)	3. Health factors (antibiotics, additives, preservatives)
4. Economy of the country	4. Emotive reasons (fluffy bunny brigade)
4a. It keeps farmers in jobs and able to bring up their families	
5. Continuation of species	
5a. They look nice in the country. Traditional English scenes	

The top two reasons for avoiding meat again demonstrate the tendency to positively evaluate animals for intrinsic reasons only through the rightness or wrongness of their treatment. Concerns about live exports and intensive farming both relate to animals' welfare, which only makes sense if participants positively evaluated animals' experiences, which in turn has been argued previously (see section 1.1) is an implicit claim that animals are positively evaluated for intrinsic reasons. However, these evaluations were not expressed as reasons for positively evaluating animals (see Figure 11 on p.87), but as reasons for avoiding meat. This pattern of not expressing perceived intrinsic qualities explicitly, but implicitly through concerns for their treatment, is now established.

These welfare reasons for avoiding meat better match vegetarians' reasons for avoiding meat than other meat-eaters' reasons identified in previous research (see section 2.1). This could be because these participants were more familiar with vegetarianism than meat-eaters were in previous research (having vegetarian family members, or representing a change in attitudes over the intervening time between research studies). Alternatively, their prioritisation of animal welfare could be a function of the research discussion itself that had spent time considering farmed animals' experiences. Further research would be necessary to resolve this issue.

5 and 5a, appearing under reasons for eating meat, could also have appeared previously under reasons for positively evaluating animals. Scruton's (2000) view that he

eats farmed animals because he likes them is therefore represented here. Another participant explains this view:

Transcript line	Speaker code	
308.	4A	... what I feel about animals being eaten is that in many cases if they weren't eaten they wouldn't exist for instance nobody would have erm lambs say er if people weren't going to eat them therefore if no-one was going to eat them there wouldn't be any sheep therefore there wouldn't have any existence at all

Note: Speaker codes identify group by number and participant by letter; the interviewer is identified by "Int"; speakers whose voice could not be identified from the recording are classified as "U" (unidentifiable).

Meat-eating was an easy definition: all participants ate meat, therefore they were meat-eaters. When questions explored ideas about eating non-conventionally farmed species, it was clear that this had not occurred to participants. 'Meat', to them, meant only the readily-available meat with which they were familiar, such as that defined in section 1.1. Participants agreed that people need protein and that it is natural for people to eat meat, but also agreed that they could get protein from sources other than meat.

The top reason participants gave for eating meat was because they liked its taste. Taste was considered the greatest barrier to vegetarianism:

Transcript line	Speaker code	
229.	1G	my daughter was a vegetarian for about 4 years when she was at school and the whole group of them decided they were all going to become vegetarian and she stuck it longer than all the rest of the group and she was quite proud that she was the last one to succumb to a bacon sandwich

Note: Speaker codes identify group by number and participant by letter; the interviewer is identified by "Int"; speakers whose voice could not be identified from the recording are classified as "U" (unidentifiable).

The codes 'taste' and 'meat refusal' could be placed at opposite ends of a continuum, perhaps with 'eat dogs/cats', 'personal distress' and 'kill own food' situated towards the 'meat refusal' end of the continuum, and 'economy', 'by products' and 'get something back' towards the 'taste' end of the continuum. Morality and its perceived relativism were also key concepts here: 'meat-eating morality', 'fairness', 'cultural food differences', and 'upbringing'.

Morality and personal experiences

People talked of being contented with, or distressed by, an animal's perceived experience. Contentment was considered a key indicator of virtuous actions, and so, for a participant to be content with an animal's treatment and perceived experience, he or

she had to feel that the animals' treatment and experience was justified, appropriate, valid or positive:

Transcript line	Speaker code	
1375.	2E	it was dearer it was it had a happy life because it was free range
1376.	2C	so are you saying
1377.	2E	so I was happier

Note: Speaker codes identify group by number and participant by letter; the interviewer is identified by "Int"; speakers whose voice could not be identified from the recording are classified as "U" (unidentifiable).

However, often comments veered more towards personal distress at animals' perceived experiences:

Transcript line	Speaker code	
267.	1A	and they talk of animals being 'a unit' and I think well you know there's no right you look at these sheep sometimes in the field when you're going by and you think "you poor devils you don't know what's in store for you" and that's er you know that's something at the back of your mind you know

Note: Speaker codes identify group by number and participant by letter; the interviewer is identified by "Int"; speakers whose voice could not be identified from the recording are classified as "U" (unidentifiable).

One group defined an immoral act as something that causes physical discomfort because it is wrong:

Transcript line	Speaker code	
675.	2C	my simple statement in life is that each person has their own moral views which can be different and my sort of description of what I feel is moral is something I feel comfortable doing or not if I feel uncomfortable then I would feel that to me would be immoral to me it might not be immoral to anybody else in the room that's what I would feel is a moral is what I would feel comfortable in myself in doing
676.	Int	so is that quite a physical feeling then that if you're doing something that you think is wrong you start to feel a bit uncomfortable?
677.	2C	yes yes as I would feel uncomfortable with it yeah
678.	2D	yes I would
679.	2C	you know you know this is quite a simple thing I feel uncomfortable lying you know so therefore to me a very important moral thing is to try to be truthful you know it's not always possible but I always feel uncom but to me that's where I feel uncomfortable

Note: Speaker codes identify group by number and participant by letter; the interviewer is identified by "Int"; speakers whose voice could not be identified from the recording are classified as "U" (unidentifiable).

This discomfort could be a symptom of dissonance; 2C's description matches Festinger's (1957) theory. An immoral act, in these participants' terms, is something inconsistent with one's own moral standards:

Transcript line	Speaker code	
1031.	Int	would there be a right answer do you think objectively where you can say we've got different views but the right answer is this
1032.	2A	yeah I mean my view is there's a set of values whether we're talking fiction whether we're talking truth or and those views should be consistent
1033.	Int	Right

1034.	2A	that's where the morality comes in you have a consistency and you set your values there or there or there

Note: Speaker codes identify group by number and participant by letter; the interviewer is identified by "Int"; speakers whose voice could not be identified from the recording are classified as "U" (unidentifiable).

Dissociation and knowledge

Participants endorsed the idea of the absent referent and the dissociation variables emphasised by theorists in section 2.3. Here was unanimous agreement, within and between groups, with many examples of how people keep animal ideas separate to meat ideas:

Transcript line	Speaker code	
232.	1U	my daughter was a vegetarian for about 12 years she gave it up when she went on travelling and her first meal I asked her what did she want and she said "fish fingers because it's not recognisable as anything"
233.	1U	No no
234.	1U	and that was her first non-vegetarian meal and then I had to cut everything up so that it didn't actually look like an animal or

---

1065.	2A	I reckon 90% of people that go into the butcher's shop
1066.	2D	don't think about animals
1067.	2A	and order a piece of lamb don't think of that as a sheep
1068.	2B	you don't you don't it's meat you don't see it as a sheep you don't see it as a cow
1069.	2A	if they actually knew how they were killed how that was dealt with
1070.	2B	it'd put you off for life
1071.	2A	there'd be a lot more vegetarians
1072.	2B	oh yeah true

345.	3C	but I'm sure a lot of people perhaps children think that meat is not a sheep in the field or a cow
346.	3A	Yeah
347.	3C	it's something you go to Tesco's and buy
...		
480.	3A	they don't want animals to <u>suffer</u>
481.	3D	mmm yes
482.	3A	while they're alive
483.	3D	Yes
484.	3A	but they're quite happy to see them killed
485.	3U	Yes
486.	3B	not <u>see</u> them killed if they <u>are</u> killed
487.	3D	well yes
488.	3A	well they have to be killed
489.	3B	they don't have to watch
490	3A	yes as long as somebody else will do it behind the scenes then they're quite happy and they will accept it
...		

515.	3B	so everything is removed and I think that actually makes a difference you know if you don't see liver in the shops and anything I'm quite sure I mean the children at school eat liver and bacon but I think that's probably because they don't even think what liver is and they probably don't know what it is actually

Note: Speaker codes identify group by number and participant by letter; the interviewer is identified by "Int"; speakers whose voice could not be identified from the recording are classified as "U" (unidentifiable).

In/consistency, dissonance and denial

The focus groups showed how people can simultaneously, and unproblematically live with inconsistencies, if they are not consciously known, and also that participants do not like to think of themselves as inconsistent. Throughout the discussions, and in relation to quotations about positively evaluating animals, were concerns about inconsistencies. Sometimes participants expressed their own perceived inconsistencies, sometimes each others', the farming industry's, government's, consumers', and other wider groups', including different generations' and cultures'.

One group endorsed the difference between species depending on their categorisation as pests. The following statements come from participants who said that they could not personally kill an animal for food, one of whom was participant 4C who had, until now, maintained that killing animals was wrong, even describing herself as a 'theoretical vegetarian', and being highly ambivalent about eating meat:

Transcript line	Speaker code	
510.	4A	what about slugs?
511.	4C	yeah I kill slugs
512.	4A	well that's mass murder
513.	4C	I put a jar of salt over them I know isn't it awful
514.	4A	now do that on a bigger scale

Note: Speaker codes identify group by number and participant by letter; the interviewer is identified by "Int"; speakers whose voice could not be identified from the recording are classified as "U" (unidentifiable).

Participant 4A is accusing participant 4C of being inconsistent, an accusation against which 4C finds herself unable to defend. In the following quotation, consistency drives the desire to de-categorise animals as pets:

Transcript line	Speaker code	
302.	3D	however if it was a named pet you know whatever the species if it were a sheep I'd probably sort of I would you know I'm contradicting myself but if it was somebody with whom I'd had a relationship with over a period of time and got to know them then I would struggle to eat that particular piece of meat but you know I eat lambs and pigs and anything outside of that
303.	3U	I would eat cats and dogs I'm with you I think if it were the local delicacy then I would like to try it intellectually I think there's nothing different it's just a piece of meat really I would think well it used to be a dog or cat but
304.	3D	Yeah

305.	3U	I suppose that's just so ingrained isn't it really that cats and dogs are pets and that's a big psychological step I wouldn't deliberately eat a cat or a dog but I wouldn't have a particular problem with it

Note: Speaker codes identify group by number and participant by letter; the interviewer is identified by "Int"; speakers whose voice could not be identified from the recording are classified as "U" (unidentifiable).

This group was particularly keen to strive for consistency in contrast to participants in other groups who categorically ruled out ever eating dog or cat meat.

When asked whether, in liking and eating animals, people simply liked animals, but only up to a certain point, or whether they were inconsistent, two participants in this same group maintained their consistency before a third tentatively suggested that inconsistency also plays a role. Note the "to be quite honest" in statement 496, indicating that it is something to which he is reluctantly admitting:

Transcript line	Speaker code	
492.	3C	I think there's a limit to their caring
493.	Int	Right
494.	3B	mmm I think so I think so
495.	3U	Yeah
496.	3D	I think there's probably a contradiction as well to be quite honest I mean it's come down to the er the wire and an animal's going to be harmed I think that most people would have a problem with it
497.	3B	you don't think it's
498.	3C	I mean they probably have a problem with it while you're telling them
499.	3D	yes that's right if it's done in front of them then it's very immediate
500	3C	Yeah
501.	3D	you know going back to the question earlier where we were saying about identifying that that lamb chop looks like a lamb in the field then you know you start addressing that contradiction I think
...		
511.	3D	I think it's contradictory I think if people say "oh I don't want animals to be harmed" or if we're saying it's both of these things then we're actually
512.	3A	if you ask the majority of people "would you like to see an animal harmed?" then they would say "no" because they don't want it harmed they don't want to see a cow harmed but they do want to eat beef it's the same thing you know I wouldn't want to see somebody suffer you know even though at the same time I'm quite happy

Note: Speaker codes identify group by number and participant by letter; the interviewer is identified by "Int"; speakers whose voice could not be identified from the recording are classified as "U" (unidentifiable).

While some participants said they had no concerns at all about eating meat, others showed strong signs of active denial strategies:

Transcript line	Speaker code		
234.	4D	well we tend not to think about it yes we tend not to think about it	
235.	4C	well I only eat meat because I don't think about it if I thought about it I couldn't possibly	
236.	4D	I don't think that would bother me actually	
237.	4U	you don't think about it you probably don't but	
238.	4B	it wouldn't mean anything to me	
239.	4C	I do think about it but I push it away	[at this point 4C motioned with both hands as if pushing something away to her right]
240.	Int	Right	
241.	4C	I deliberately don't think about it	
242.	Int	so that's quite a conscious thing then would you say that's every time you cook a piece of meat or when you do your weekly shop or is it just something that occurs to you every now and again	
243.	4C	I suppose it occurs to me every now and then we shouldn't be eating them	
244.	Int	but that's not the case for the rest of you	
245.	4B	No	
246.	4U	well it might be now	

Note: Speaker codes identify group by number and participant by letter; the interviewer is identified by "Int"; speakers whose voice could not be identified from the recording are classified as "U" (unidentifiable).

Participants were asked if they had thought about these questions before. Most of them answered that they were aware of them, but did not think about them much. Participant 4C, however, who in statement 243 above said that it occurred to her "every now and then", later on had increased her perceived frequency of discomfort:

Transcript line	Speaker code	
706.	4C	I do think about it quite a lot I think I'm conscious every time I eat meat that it is a bit repulsive it is a bit questionable but I like meat

Note: Speaker codes identify group by number and participant by letter; the interviewer is identified by "Int"; speakers whose voice could not be identified from the recording are classified as "U" (unidentifiable).

It seems that during the course of the focus group her dissonance had not only heightened, but her memory of how often she thought about these issues had changed too. This demonstrates Bem and McConnel's (1970) point about how, following a change in attitude, people will maintain that their old attitude was more like their new attitude than it actually was. It shows that this participant's dissonance affected how she processed information. No other participant in this group said that they thought about these issues a great deal, and certainly none of them showed a shift in attitude (or at least thinking about the attitude) like this participant.

Other participants supported Hills's (1993) findings that they were too preoccupied by immediate concerns in their personal lives to consider other issues. The emphasis on emotional concerns, and the physically draining aspect of it, was referred to by two participants as tiring:

Transcript line	Speaker code	
19.	1B	yes absolutely I find really its family that take up a lot of my thoughts mainly because I've got an ageing father who lives round the corner he takes up a fair bit my time I've also got a son who's got a mental illness so he's in and out of hospital like a yo-yo at the moment and I I'm lucky because I've got five daughters and my daughters are close at hand but I do find that most of my time is taken up with family and that's what occupies my thoughts
...		
37.	Int	So do you think it's the amount of emotion that's tied in to
38.	1B	yes and I think I think it's the emotion that's the tiring thing as well
39.	1C	it is tiring yes
...		
84.	1D	I've got two small children and because we're moving house everything's slanted towards that and I can't really think of anything else at the moment

Note: Speaker codes identify group by number and participant by letter; the interviewer is identified by "Int"; speakers whose voice could not be identified from the recording are classified as "U" (unidentifiable).

Kill own food

A lot of the codes discussed so far were epitomised in the relatively polarised condition of killing for one's own food. Some participants felt that they could not consider killing an animal and that they would rather become vegetarian; others answered that they could kill because they had done it before, but that they would not want to. This reticence was not just due to a lack of skill or squeamishness (a feeling which Ryder (2000) claims is closely related to compassion), but also because participants genuinely would not want to harm an animal.

Transcript line	Speaker code	
35.	3U	but you know the whole thing I think if people had to do it [slaughter] for themselves to eat meat most people wouldn't eat meat
...		
308.	3A	most people wouldn't
309.	Int	wouldn't
310.	3A	wouldn't
311.	3C	would not
312.	3A	but if somebody else did it
313.	3C	Yeah
314.	Int	why do you think that is, because of the time or lack of skill or?
315.	3A	well I think it's the way you look on life and the majority of people wouldn't want to do it
316.	3D	yeah I think it might be something to do with skill
317.	3A	Yeah
318.	3C	kill it cleanly
319.	3D	most people wouldn't know how to kill it cleanly and gut it and I think squeamishness would come into it as well

129.	4C	you don't have to bring yourself to do the horrible act do you
130.	4D	well over there it's not here
131.	4U	if you're not doing it for a living if you're not doing it for the whole of your life you will find it very difficult to do it I wouldn't be able to do it at all so only I think I couldn't eat a dog or cat unless I was absolutely starving and there was nothing else to eat
132.	4B	Yes
133.	4C	self-preservation
134.	4U	Xxx
135.	4D	yes each generation's completely different
136.	Int	... would you kill animals for meat yourself if there was a strike
137.	4B	oh I don't know if it was just a strike
138.	4C	no I'd become vegetarian I'd become vegetarian

Note: Speaker codes identify group by number and participant by letter; the interviewer is identified by "Int"; speakers whose voice could not be identified from the recording are classified as "U" (unidentifiable).

Section 7.1 builds on the results presented here to consider broad patterns of meat-eaters' attitudes and arguments that can be tentatively drawn from these discussions.

5.3 Answers to research questions

Focus groups explored the topic and identified key questions to follow up in further research. They were ideal designs for this topic because competing arguments were offered more naturally by members of a group than by a researcher. The groups were particularly used to assess research questions outlined on p.65.

(a) What are people's attitudes towards farmed animals and eating meat—independently, as well as in the context of each other?

Taste was people's main reason for eating meat, and most participants deemed that this sufficiently outweighed their ordinary concerns about animals. The use of animals for meat was one of many instrumental reasons for positively evaluating animals.

While participants felt that animals had intrinsic qualities, these were rarely made explicit, rather they were obvious qualities that animals automatically possessed and which should not be affected by people without very good reason (like eating meat), but even then, not with impunity. An uncontentious view, deemed so obvious that it did not warrant explication, was that animals can experience pleasure and pain, both physical and emotional.

(b) Do people's explicit attitudes match their more automatic (non-conscious, or implicit) attitudes, and do any attitudes match people's reported behaviour?

All participants were meat-eaters, and their positive attitudes towards eating meat and liking its taste were therefore consistent with their behaviour. While most participants felt that these reasons outweighed their concerns for farmed animals'

experiences, two in particular did not: 1F and 4C. 1F had greatly reduced his meat consumption and questioned whether he "really" wanted to eat meat when considering the life it cost, and 4C described herself as a "theoretical vegetarian". While the other participants shared many of the same concerns about animals' experiences prior to becoming their meat, suggesting some inconsistency between their attitudes towards farm animals and meat-eating behaviour, these two participants expressed attitudes that suggested greater inconsistency and possibly even that when these attitudes and behaviour were relevant in the context of one another (as in the focus group conditions), consistency may not have been maximised overall. Although implicit attitudes were beyond the reach of this method, participant 4C did demonstrate a physical response to some thoughts, automatically demonstrating how she pushed them away. This physical reaction may indicate an implicit response that would normally operate before such thoughts became conscious. If so, it suggests that her implicit attitudes towards animals' suffering matched her explicit attitudes and were perhaps even stronger. The quantitative methods include an implicit attitude measure designed to test these attitudes more robustly.

(c) In what relevant ways do vegetarians' and meat-eaters' attitudes differ, and in what ways are they similar?

Although these participants were all meat-eaters, some of them had vegetarian family members and confirmed the connection between animals and meat in vegetarian attitudes that previous research had found. This connection was noted by participants as an explanation of how vegetarians differed to themselves. Hence, either the absence of this connection, or concern about this connection, for meat-eaters may be inferred. However, they too were concerned about animals' welfare and experiences.

A key difference between these participants' own attitudes and those reported by previous research, was in these meat-eaters' perceived greatest advantages of a vegetarian diet: animals' welfare being deemed more important than human health benefits. This suggests that these meat-eaters' perceived advantages of a vegetarian diet better match vegetarians' perceived advantages of their own diets as recorded by previous research (see section 2.1). However, it has been noted that further research is required before this conclusion can be confidently accepted.

Participants' attitudes towards their own diet was that, on the whole, although they did not want animals to suffer, their access to meat took priority over animals'

experiences. This, they felt, was the greatest difference between themselves and vegetarians.

(d) Does simply focusing on genuinely held, relevant attitudes cause dissonance?

There was plenty of evidence for dissociation variables, offered independently by all four groups, and conversations often turned naturally to the issue of consistency and of wanting to avoid uncomfortable knowledge of the life and death behind meat. These concerns did not ordinarily come between participants' liking for the taste of meat and their meat-eating behaviour, however, which, without these concerns, were consistent with each other. Even in this exploratory research design there was evidence of increased dissonance caused by simply considering and discussing the topic as denial was physically demonstrated by one woman 'pushing' her thoughts away. A reluctance to 'admit' to feelings of inconsistency was also noted.

(e) Is consonance restored through attitude change and, if so, do attitudes move in expected directions?

Although consonance restoration, like attitudes and dissonance, was not explicitly measured by this method, many participants felt that they maximised consistency overall and showed no obvious consonance-restoration strategy. However, dissociation variables were accepted by all participants to aid the disconnection between meat and animals, and one participant experienced a change in her perceived frequency of feelings of discomfort and concern for animals and how troubled she felt by eating meat, suggesting her attitude towards eating meat became more negative over the course of the discussion. This direction of attitude change is contrary to the direction predicted as attitude changes were expected to reinforce behaviour. Hence, a reduction in positivity towards animals, and an increase in positivity towards meat for this meat-eater would have been expected. However, as the next Chapter shows, this result is not as aberrant as it first appears.

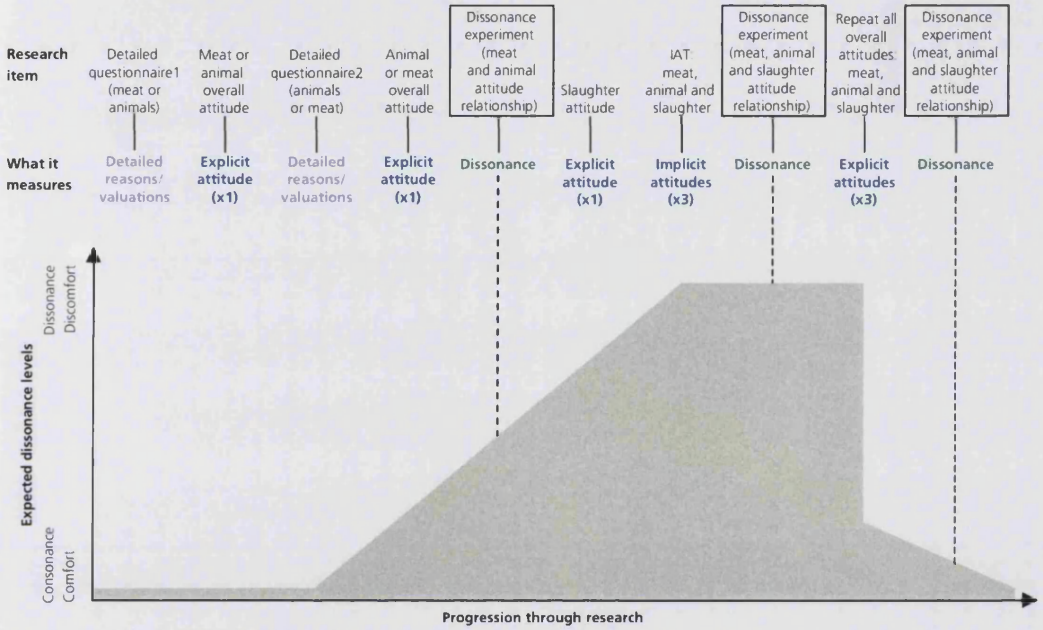
The next Chapter presents the quantitative research results that explicitly test many of the ideas explored here.

CHAPTER 6

Quantitative research results

Figure 7, repeated from p.78, again lays out the order of the quantitative research methods. Because the design was explained in Chapter 4, a brief summary is presented below. See Appendix D for the research guide and Appendix H for the tables of statistical analyses used in this chapter.

Figure 7: Order of research and expected levels of dissonance

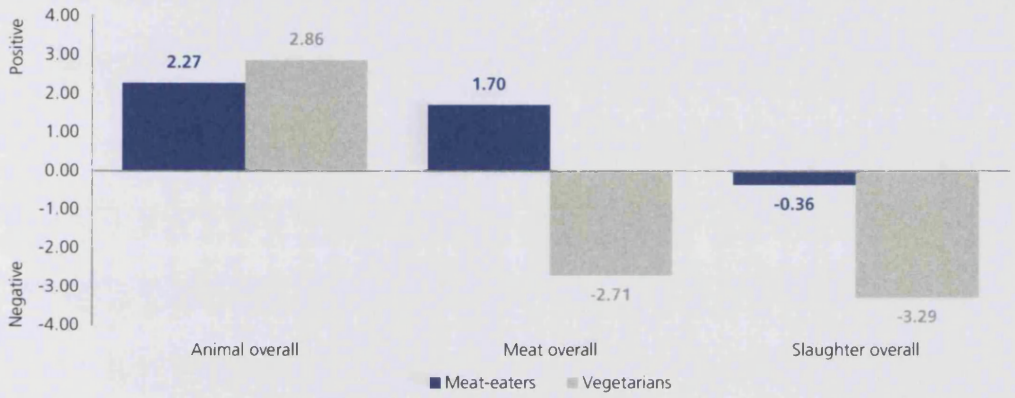


Participants answered detailed questionnaires about their attitudes towards eating meat and towards farm animals. They also completed overall attitude measurements about eating meat, farm animals and animals' slaughter. These overall attitude measurements were repeated towards the end of the procedure. Results of the detailed questionnaires and change in attitudes, along with dissonance reports, are presented later. The next section introduces the initial overall attitude results, which were largely made while the participants were unaware about potential connections between the attitudes. The attitudes towards eating meat and towards farm animals can therefore be considered "pre-dissonance", while the attitude measurements towards animals' slaughter were taken after the first dissonance measure. Measuring attitudes towards animals' slaughter automatically related eating meat to animals, so the first dissonance measure of the relationship between eating meat and farm animals alone was taken beforehand. Nevertheless, the first dissonance measure and the slaughter attitude measurement were both taken before the IAT. Although participants were therefore no

longer naïve when evaluating their attitudes towards animals' slaughter, they had not undergone the specific dissonance-stimulation of the IAT.

6.1 Explicit attitudes towards farm animals, eating meat and animals' slaughter

Chart 2: Mean explicit attitudes



As Chart 2 shows, meat-eaters' attitudes towards farm animals were significantly more positive than their attitudes towards animals' slaughter, $t(63)=6.44$, $p<.001$. Their attitudes towards eating meat were also significantly more positive than their attitudes towards animals' slaughter, $t(63)=6.72$, $p<.001$. The differences between meat-eaters' attitudes towards farm animals and eating meat were not statistically significant.

In contrast, vegetarians' attitudes towards farm animals were significantly more positive than their attitudes towards both eating meat, $t(13)=6.71$, $p<.001$, and animals' slaughter $t(13)=6.29$, $p<.001$, but the differences between their attitudes towards eating meat and animals' slaughter were not statistically significant (however, the small vegetarian sample size creates low statistical power of these tests).

While meat-eaters' and vegetarians' overall attitudes towards farm animals were not significantly different, vegetarians' attitudes towards eating meat and animals' slaughter were significantly more negative than meat-eaters', $t(76)=5.67$, $p<.001$ and $t(76)=3.55$, $p<.001$, respectively.

6.2 How people evaluate farm animals

Chart 3: How farm animals are evaluated

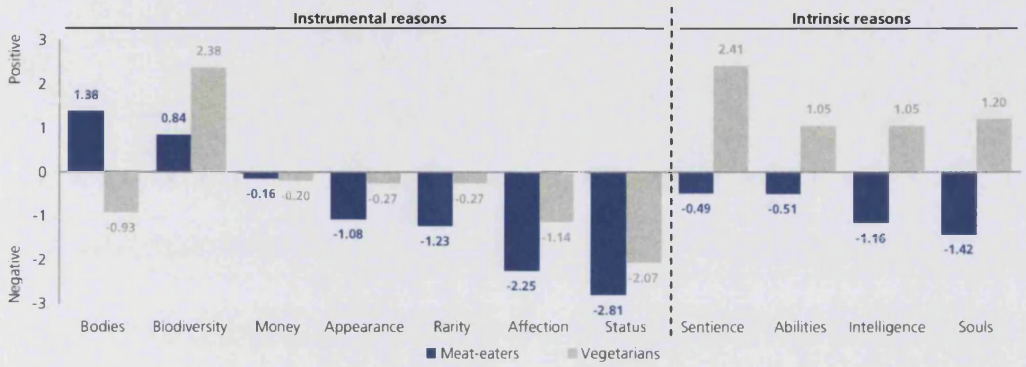


Chart 3 demonstrates that meat-eaters recorded that they positively evaluated farm animals for the products that could be made from their bodies significantly more highly than did vegetarians, $t(19)=2.39, p<.05$. But although this was meat-eaters' highest mean value, this, along with evaluating animals as status symbols, did not correlate with meat-eaters' overall attitudes towards farm animals. The highest rated detailed reason, in contrast with almost all other evaluations, is therefore not what meat-eaters think of when they generally evaluate their attitudes towards farm animals.

However, all of the other reasons (with the exception of biodiversity) that did positively correlate with overall attitudes toward animals (the highest rated of the three overall attitudes) actually achieved negative mean rankings from meat-eaters (biodiversity: $r(63)=.26, p<.05$, money: $r(63)=.34, p<.01$, appearance: $r(63)=.44, p<.001$, rarity: $r(63)=.30, p<.05$, affection: $r(63)=.37, p<.01$, sentience: $r(63)=.31, p<.05$, abilities: $r(63)=.37, p<.01$, intelligence: $r(63)=.29, p<.05$, souls: $r(63)=.26, p<.05$).

Chart 3 also shows that meat-eaters and vegetarians explicitly evaluated farm animals for different reasons. Meat-eaters' only mean positive evaluations shown in Chart 3 are the use of animals' bodies (which, as already stated, did not significantly correlate with overall animal evaluations) and animals' biodiversity. In contrast, while vegetarians also positively evaluated biodiversity, their evaluations of animals for more intrinsic reasons were significantly higher than meat-eaters', $F(1, 76)=9.37, p<.01$.

Meat-eaters' evaluations of animals for the products that can be made from their bodies correlated with positively evaluating animals for their monetary cost, $r(63)=.40, p<.001$, and rarity, $r(63)=.30, p<.05$. It did not correlate significantly with overall attitudes towards farm animals, eating meat or animals' slaughter, but did

correlate with a wide range of meat consumption, $r(63)=.40, p<.005$. On the other hand, vegetarians' evaluations of animals for the products that could be made from their bodies did correlate with their attitudes towards animals' slaughter, $r(13)=.66, p<.05$. This suggests that vegetarians connected the use of animals' bodies to animals' slaughter, while meat-eaters did not.

Meat-eaters' negative correlations between the perceived intrinsic reasons for positively evaluating animals (farm animals' perceived sentience, abilities, intelligence and souls) and overall attitudes towards eating meat and animals' slaughter also stand out. (Meat correlations: sentience: $r(63)=-.52, p<.001$, abilities: $r(63)=-.41, p<.01$, intelligence: $r(63)=-.54, p<.001$, souls: $r(63)=-.37, p<.01$. Animals' slaughter correlations: sentience: $r(63)=-.40, p<.005$, abilities: $r(63)=-.26, p<.05$, intelligence: $r(63)=-.44, p<.001$, souls: $r(63)=-.31, p<.05$.) For meat-eaters, all four intrinsic reasons correlated not just with each other, but with biodiversity, appearance, rarity and affection reasons, as well as all three overall attitudes. (Sentience correlations: abilities: $r(63)=.71, p<.001$, intelligence: $r(63)=.86, p<.001$, souls: $r(63)=.74, p<.001$, biodiversity: $r(63)=.47, p<.001$, appearance: $r(63)=.50, p<.001$, rarity: $r(63)=.49, p<.001$, affection: $r(63)=.56, p<.001$, overall attitudes towards animals: $r(63)=.31, p<.05$. Abilities correlations: intelligence: $r(63)=.79$, $p<.001$, souls: $r(63)=.57, p<.001$, biodiversity: $r(63)=.45, p<.001$, appearance: $r(63)=.43$, $p<.001$, rarity: $r(63)=.28, p<.05$, affection: $r(63)=.50, p<.001$, overall attitudes towards animals: $r(63)=.36, p<.005$. Intelligence correlations: souls: $r(63)=.71, p<.001$, biodiversity: $r(63)=.41, p<.01$, appearance: $r(63)=.47, p<.001$, rarity: $r(63)=.42, p<.01$, affection: $r(63)=.59, p<.001$, overall attitudes towards animals: $r(63)=.29, p<.05$. Souls correlations: biodiversity: $r(63)=.39, p<.005$, appearance: $r(63)=.49, p<.001$, rarity: $r(63)=.36, p<.005$, affection: $r(63)=.61, p<.001$, overall attitudes towards animals: $r(63)=.27, p<.05$.)

Factor and regression analyses: meat-eaters

Regression analyses revealed no significant prediction between meat-eaters' detailed evaluations of animals and overall attitudes towards farm animals or eating meat; however, biodiversity did negatively predict attitudes towards animals' slaughter, $\beta=-.37$; $t(63)=-2.34, p<.05$, as did beliefs about farm animals' intelligence, $\beta=-.59$; $t(63)=-2.16$, $p<.05$.

Meat-eaters' evaluations of animals for the products that can be made from their bodies predicted a wide range of meat consumption, β=.15; $t(63)$=2.32, p<.05.

Factor analysis of meat-eaters' evaluations of animals revealed three components, labelled in Table 3 as Intrinsic, Consumption & Global and Personal.

Table 3: Meat-eaters' evaluations of farm animals: factor analysis

	Component		
	Intrinsic	Consumption & Global	Personal
Bodies	.040	**.811**	.103
Biodiversity	.398	**.481**	-.118
Money	-.138	**.771**	-.308
Appearance	.301	.052	**-.604**
Rarity	.060	.247	**-.716**
Affection	.401	-.111	**-.675**
Status	-.142	.016	**-.881**
Sentience	**.908**	.004	-.032
Abilities	**.891**	.142	.140
Intelligence	**.928**	-.031	-.028
Souls	**.741**	-.124	-.234

Extraction Method: Principal Component Analysis
Rotation Method: Oblimin with Kaiser Normalization
Rotation converged in 9 iterations

Reducing the data into these components revealed that no component significantly predicted overall attitudes towards animals or the range of meat consumption, but the Intrinsic component (α = .92) did negatively predict attitudes towards eating meat, β=-.61, $t(63)$=-4.40, p<.001, and animals' slaughter, β=-.51, $t(63)$=-3.18, p<.005.

Factor and regression analyses: vegetarians

Positively evaluating animals for the products that could be made from their bodies predicted vegetarians' attitudes towards eating meat, β=1.69, $t(13)$=8.50, p<.05. Rarity, perceptions of animals' souls and their abilities negatively predicted vegetarians' attitudes towards eating meat, β=-.67, $t(13)$=-4.60, p<.05; β=-1.41, $t(13)$=-6.30, p<.05; β=-4.71, $t(13)$=6.09, p<.05, respectively.

Biodiversity, status and animals' intelligence negatively predicted vegetarians' attitudes towards animals' slaughter, β=-.61, $t(13)$=-7.39, p<.05; β=-.49, $t(13)$=-4.79, p<.05; β=-4.66, $t(13)$=-9.87, p<.05, respectively.

Factor analysis of vegetarians' evaluations of animals revealed a similar pattern to meat-eaters', and three components are labelled in Table 4 as Intrinsic, Consumption & Global, and Personal.

Table 4: Vegetarians' evaluations of farm animals: factor analysis

	Component		
	Intrinsic	Consumption & Global	Personal
Bodies	-.251	**.749**	-.205
Biodiversity	.534	**.552**	.112
Money	-.302	**.887**	-.019
Appearance	.353	-.155	**.465**
Rarity	.426	**.743**	.217
Affection	.348	-.474	**.665**
Status	-.430	.225	**.921**
Sentience	**.910**	-.057	-.054
Abilities	**.930**	-.034	.078
Intelligence	**.924**	-.073	.081
Souls	**.986**	.018	-.209

Extraction Method: Principal Component Analysis
Rotation Method: Oblimin with Kaiser Normalization
Rotation converged in 11 iterations

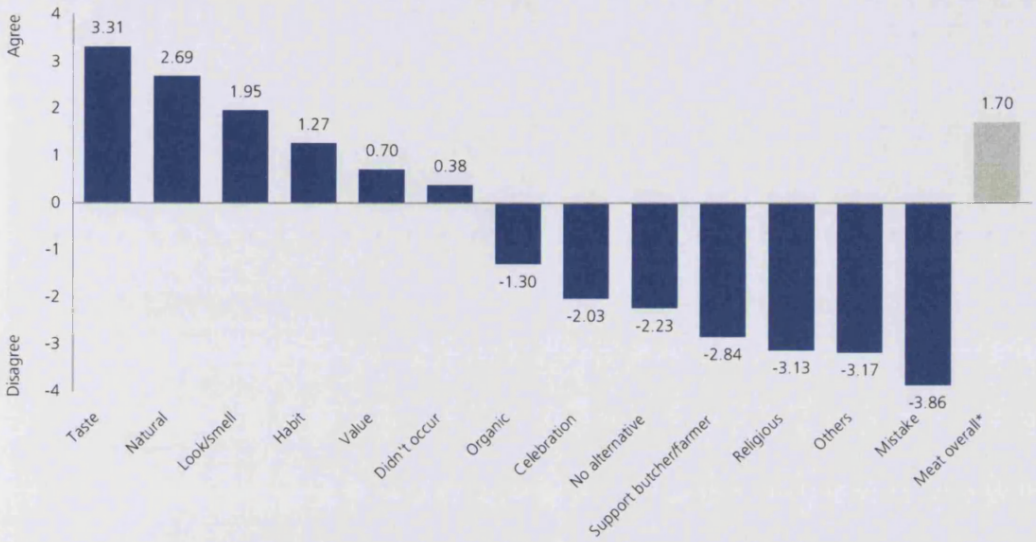
Unlike meat-eaters, vegetarians' overall attitudes towards farm animals were predicted by the Intrinsic component (α = .96), β=.55, $t(13)$=2.64, p<.05. No component predicted vegetarians' overall attitudes towards eating meat or animals' slaughter (however, the small vegetarian sample size creates low statistical power of these tests).

Vegetarians' Intrinsic component results were significantly higher than meat-eaters', $F(1, 76)$=9.37, p<.01. The other components differed slightly between meat-eaters and vegetarians, preventing their direct comparison.

6.3 Reasons for eating meat

The range of meat consumption correlated positively with meat-eaters' attitudes towards eating meat, both initially, $r(77)$=.44, p<.001, and after the IAT, $r(77)$=.41, p<.001. This relationship also held for attitudes towards animals' slaughter $r(77)$=.36, p<.001 before the IAT and $r(77)$=.28, p<.01 afterwards. Similarly, the range of meat consumption correlated positively with higher evaluations of animals for the products that can be made from their bodies, $r(77)$=.42, p<.001, and correlated negatively with positively evaluating animals for intrinsic reasons, $r(77)$=-.22, p<.05.

Chart 4: Meat-eaters' reasons for eating meat



Notes:
* First measure of the overall attitude towards meat

As Chart 4 demonstrates, meat-eaters' strongest reason for eating meat was because they liked its taste. This was followed by the view that meat was natural or good to eat, that it looked or smelled nice, that they ate meat out of habit, that it was good value for money and the fact that it did not occur to meat-eaters not to eat meat. However, habit alone significantly predicted overall attitudes towards eating meat, β=.40, $t(63)$=2.55, p<.05.

Table 5 demonstrates the result of factor analysis which identified four components, Principled, Senses & Natural, Normalised, and External Pressure.

Table 5: Why meat-eaters eat meat: factor analysis

	Component			
	Principled	**Senses & Natural**	**Normalised**	**External Pressure**
Taste	.064	**.827**	.153	-.060
Natural	.081	**.811**	-.133	.034
Look/smell	-.167	**.692**	-.272	.210
Habit	.142	-.096	**-.710**	-.355
Value	-.018	.050	**-.619**	.209
Didn't occur	.000	.117	**-.658**	-.105
Organic	**.890**	.102	-.003	-.231
Celebration	-.027	.084	.120	**.860**
No alternative	.040	-.449	-.203	**.521**
Butcher/farmer	**.662**	-.059	-.259	.228
Religious	**.718**	-.032	.018	.175
Others	.188	.041	.029	**.670**
Mistake	**.520**	-.118	.301	.459

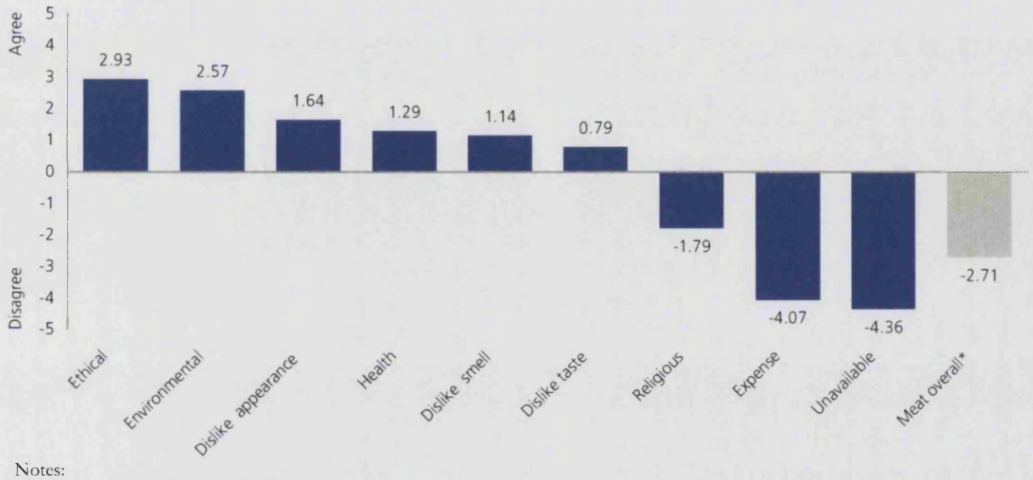
Extraction Method: Principal Component Analysis
Rotation Method: Oblimin with Kaiser Normalization
Rotation converged in 14 iterations

The Normalised component predicted overall attitudes towards eating meat, β=.35, $t(63)$=2.24, p<.05. However a low reliability score for this component (α = .46) demonstrated that the Habit variable alone explained 49% of the variance and so remained the only significant variable in attitudes towards eating meat.

None of the individual factors or components predicted the other overall attitudes or the range of meat consumption.

6.4 Reasons for avoiding meat

Chart 5: Vegetarians' reasons for avoiding meat



Notes:
* First measure of the overall attitude towards meat

As Chart 5 shows, the strongest reason for avoiding meat was ethics, followed by environmental concerns, a dislike of meat's appearance, health concerns, and a dislike of meat's smell and taste.

Regression analysis found that none of these reasons significantly predicted attitudes towards farm animals or eating meat, but religion and health negatively predicted attitudes towards animals' slaughter, β=-.30, $t(13)$=-3.63, p<.05; β=-.29, $t(13)$=-3.40, p<.05, however, ethics, environmental and health concerns correlated negatively with attitudes towards animals' slaughter, $r(13)$=-.92, p<.001, $r(13)$=-.63, p<.05, $r(13)$=-.60, p<.05, respectively.

Table 6 demonstrates the result of factor analysis which identified three components, Religious & Dislike, Meatless Meat-eater (reasons suggesting that people would eat meat out of choice, but are prevented from doing so by external variables), and Principled & Health.

Table 6: Why vegetarians avoid meat: factor analysis

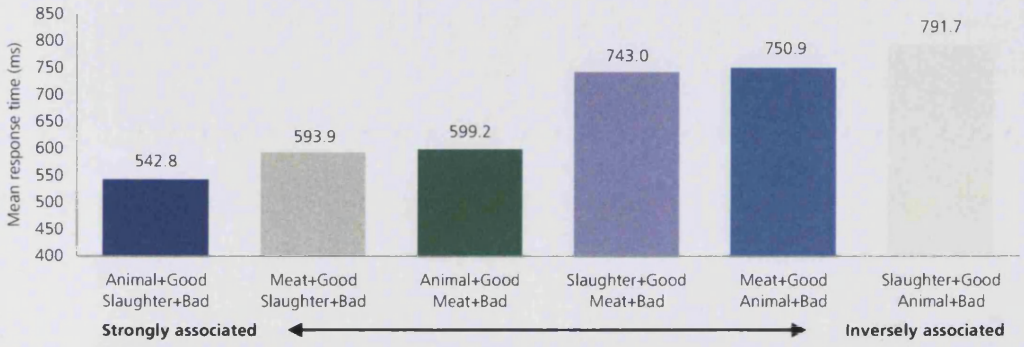
	Component		
	Religious & Dislike	**Meatless Meat-eater**	**Principled & Health**
Ethical	.092	-.041	**.938**
Environmental	-.262	-.515	**.699**
Dislike appearance	**.951**	-.070	-.007
Health	.027	.189	**.821**
Dislike smell	**.963**	-.135	-.093
Dislike taste	**.742**	-.123	.016
Religious	**.676**	.443	.162
Expense	-.236	**.926**	.108
Unavailable	-.009	**.962**	-.077

Extraction Method: Principal Component Analysis
Rotation Method: Oblimin with Kaiser Normalization
Rotation converged in 5 iterations

The Principled & Health component (α = .78, the strongest contributor being the Ethical variable, explaining alone 70% of the variance) predicted overall attitudes towards animals' slaughter, β=-.77, $t(13)$=-5.75, p<.001. Overall attitudes towards eating meat and farm animals were not explained by any of these variables, suggesting that avoiding meat is not about farm animals or meat itself, but about animals' slaughter (however, the small vegetarian sample size creates low statistical power of these tests).

6.5 Implicit attitudes towards farm animals, eating meat and animals' slaughter

Chart 6: Meat-eaters' mean implicit attitude (response speed ms)



Meat-eaters' responses were faster in the trials pairing farm animal images with good words and animal slaughter images with bad words, than the trials pairing animal slaughter images with good words and farm animal images with bad words, $t(63)=6.51$, $p<.001$. Their responses were also faster when pairing meat images with good words and animal slaughter images with bad words, than when pairing animal slaughter images with good words and meat images with bad words, $t(63)=4.69$, $p<.001$. Pairing farm animal images with good words and meat images with bad words was also faster than pairing meat images with good words and farm animal images with bad words, $t(63)=3.47$, $p<.001$.

Like their explicit attitudes, meat-eaters' implicit attitudes therefore demonstrated a preference for farm animal images over meat images and meat images over animal slaughter images.

Chart 7: Vegetarians' mean implicit attitude (response speed ms)

Vegetarians' responses were similar to meat-eaters'. The coloured columns in Chart 6 and Chart 7 highlight differences in the order of preferences between

meat-eaters and vegetarians. Pairing farm animal images with good words and animal slaughter images with bad words produced faster responses than pairing animal slaughter images with good words and farm animal images with bad words, $t(13)=5.63, p<.001$. Although, as Chart 7 shows, overall vegetarians' responses were slightly faster when pairing meat images with good words and animal slaughter images with bad words than when pairing animal slaughter images with good words and meat images with bad words, this result was not statistically significant (however, the small vegetarian sample size creates low statistical power of these tests). Pairing farm animal images with good words and meat images with bad words was however significantly faster than pairing meat images with good words and farm animal images with bad words, $t(13)=8.93, p<.001$.

Like their explicit attitudes, vegetarians' implicit attitudes therefore demonstrated a preference for farm animal images over both meat and animal slaughter images.

Vegetarians were significantly faster than meat-eaters when pairing farm animal images with good words and meat images with bad words, $t(41)=2.89, p<.01$. As the combination of farm animals with good words and animals' slaughter with bad words did not produce a significant difference between the groups, meat responses may be the key difference. The differences demonstrated between the ascending order of pairings in Chart 6 compared with Chart 7 also show that vegetarians were quicker than meat-eaters when meat images were associated with bad words and slower than meat-eaters when meat images were associated with good words in other combinations (although not significantly, however, the small vegetarian sample size creates low statistical power of these tests). While vegetarians' responses were generally quicker than meat-eaters', responses to meat images stand out: meat-eaters' responses being much more positive than vegetarians'.

6.6 Experience of cognitive dissonance through the research

Factor analysis revealed that the three dissonance measures (uncomfortable, uneasy and bothered) were closely correlated at all three phases of the research (see Table 7). They have therefore been collapsed into a single dissonance variable.

Table 7: Experience of dissonance: factor analysis

	Dissonance component		
	First measure	Second measure	Third measure
Uncomfortable	.944	.948	.983
Uneasy	.931	.967	.985
Bothered	.897	.966	.974

Extraction Method: Principal Component Analysis
1 component extracted at each stage

Chart 8: Mean dissonance experiences

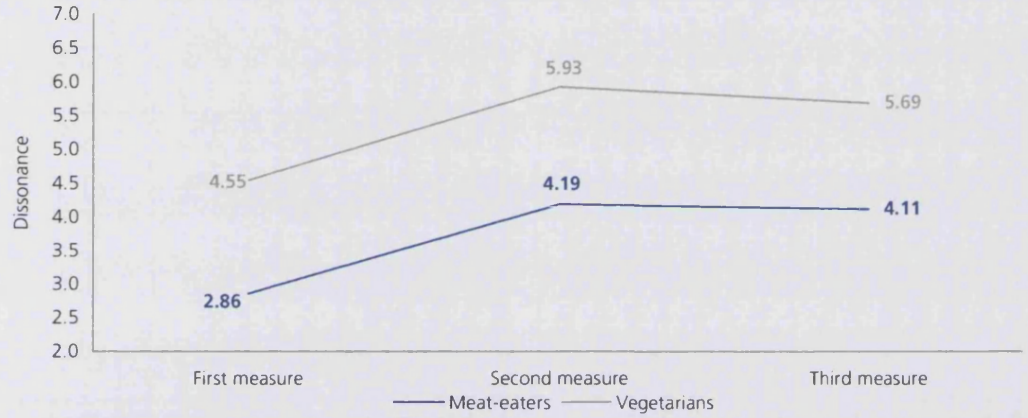


Chart 8 shows that, as predicted, participants experienced increased dissonance between the first and second measures (i.e. before and after the IAT), $t(77)=4.76$, $p<.001$. However, dissonance did not significantly reduce following the re-expression of attitudes, and by the third dissonance measure there remained a significant increase in dissonance between the first and third measures, $t(77)=4.05$, $p<.001$. Separating meat-eaters and vegetarians revealed that this pattern remained significant for meat-eaters, $t(63)=4.34$, $p<.001$; $t(63)=3.80$, $p<.001$, but not for vegetarians—although the pattern direction was similar (however, the small vegetarian sample size creates low statistical power of these tests).

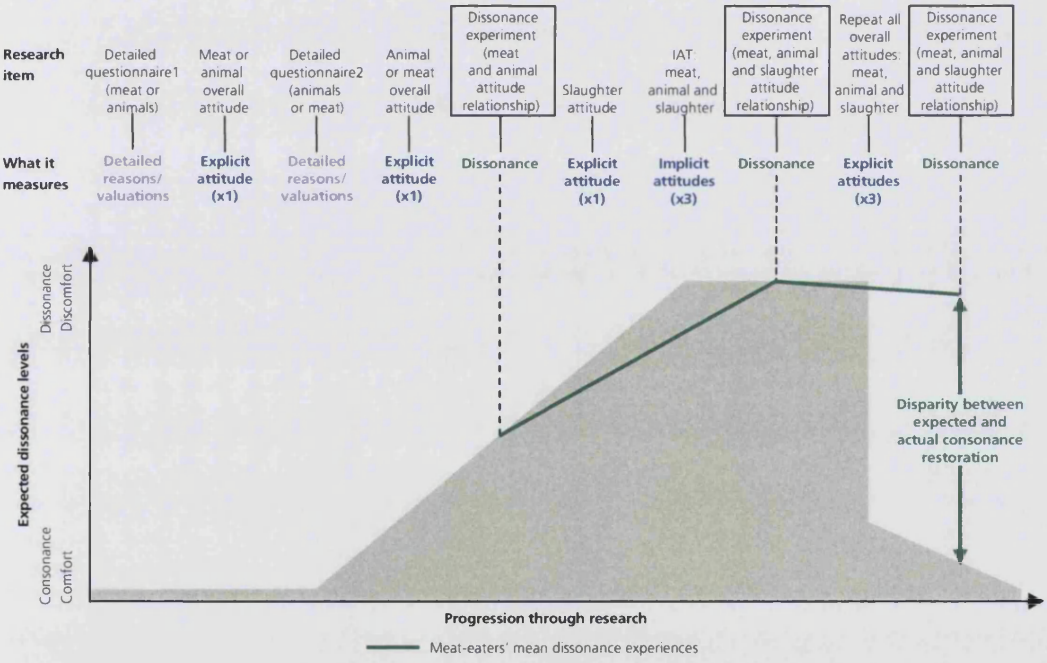
Vegetarians' mean scores were higher than meat-eaters', which was not predicted, although this difference was not statistically significant (however, the small vegetarian sample size creates low statistical power of these tests). Some vegetarians reported after the study that they felt so strongly about the attitude targets that they were unable to respond as instructed and instead reported their discomfort with the relationship between animals, meat and slaughter (rather than about their attitudes concerning this relationship). Thus, while some vegetarians reported nil dissonance

throughout the study, others reported high levels of dissonance. This strength of feeling is itself notable.

Most participants' dissonance was increased by considering their own attitudes and the relationship between them, as might happen naturally under certain social conditions (e.g. foot and mouth epidemics). While simply re-evaluating and expressing one's attitude seemed to slightly reduce the dissonance, the effect was not statistically significant. The fact that this effect was not larger is intriguing.

Figure 13 superimposes the dissonance results from Chart 8 onto the previous Figure 7 to demonstrate the disparity between the predicted and actual results between the second and third measures.

Figure 13: Disparity between predicted and actual consonance restoration



Comparing meat-eaters' range of meat consumption and first overall attitudes (towards eating meat, farm animals and animals' slaughter) to the dissonance data, reveals that attitudes towards animals' slaughter alone significantly negatively predicted dissonance, β=-.49, $t(63)$=-3.30, p<.005. That is, the more negative participants' attitudes were towards animals' slaughter, the more dissonance they experienced.

Although a similar result held for the group as a whole, when vegetarians' and meat-eaters' data were analysed separately, the vegetarians' data produced no significant

results, so meat-eaters are analysed here alone (however, the small vegetarian sample size creates low statistical power of these tests).

Subtracting the first dissonance scores from the second dissonance scores to reveal the increase in dissonance following the IAT, produced a similar result, β=-.32, $t(63)$=-2.41, p<.05.

This suggests that if vegetarianism is caused by cognitive dissonance, then the research which has previously cited a love for animals as the reason behind vegetarianism is incorrect. A love for animals does not cause dissonance: a concern over animals' slaughter does. This fits with the vegetarian data, which, as already analysed, identified that attitudes towards animals' slaughter (unlike the other overall attitudes) were predicted by reasons for avoiding meat. Here meat-eaters' dissonance scores and vegetarians' meat-avoidance attitudes converge to independently enforce the view that attitudes towards animals' slaughter are key.

6.7 How attitudes changed through the research

Chart 9: Meat-eaters' mean attitude changes

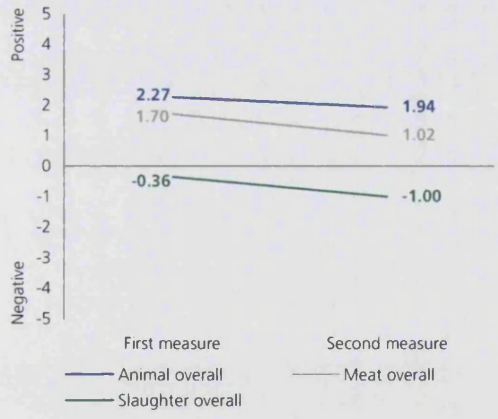
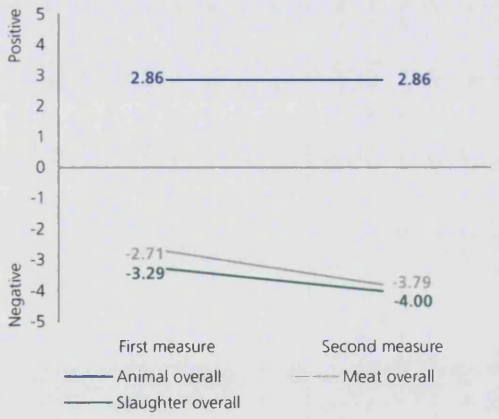


Chart 10: Vegetarians' mean attitude changes



There were three measures of attitudes towards eating meat, farm animals and their slaughter—two explicit measures and the IAT. The results all placed the attitude targets in the same relative order to each other, providing convergent validity and demonstrating that, in this case, implicit and explicit attitudes are similar.

While meat-eaters' reductions in positive attitudes towards farm animals were not statistically significant, their attitudes towards eating meat reduced significantly, $t(63)$=3.00, p<.005, as did their attitudes towards animals' slaughter, $t(63)$=2.56, p<.05.

Consequently meat-eaters' attitudes towards eating meat were significantly less positive than their attitudes towards farm animals in the second measures, $t(63)=2.14$, $p<.05$. The changes in vegetarians' attitudes between the first and second measures were not statistically significant (however, the small vegetarian sample size creates low statistical power of these tests).

As Chart 9 and Chart 10 demonstrate, many attitude changes were contrary to hypotheses and the majority of dissonance literature. Dissonance was expected to cause polarisation in the direction of existing behaviour patterns. Thus, meat-eaters were expected to enhance their attitudes towards meat, and to reduce their attitudes towards farm animals. In fact, almost all attitude targets were judged more negatively at the end of the research than at the beginning (with the exception of vegetarians' attitudes towards farm animals). This means that while negative attitudes did indeed become more extreme (slaughter for both groups and meat for vegetarians), positive attitudes became more uncertain (meat and animals for meat-eaters). Meat-eaters' attitudes towards farm animals were expected to become less positive, while attitudes towards eating meat were expected to become more positive, not less positive. These results being contrary to expectations suggests that the content of these attitudes and, as Stone and Cooper (2000) suggested, the level of interpretation of these attitudes and behaviour, affected the experience of dissonance and lack of consonance restoration, as well as the unpredicted attitude changes.

However, Chart 9 and Chart 10 do demonstrate that the attitudes moved further away from each other (with the exception of vegetarians' meat and slaughter evaluations), showing a relative, if not absolute, polarisation effect. The Charts also demonstrate that the movement (reduction in positivity) of attitudes towards meat and animals' slaughter was similar between meat-eaters and vegetarians. This suggests that dissonance through the research had the same effects on meat-eaters and vegetarians, and that any differences between them may be quantitative, not qualitative.

There are theoretical problems with meat-eaters' attitudes towards animals. First, farm animals provoked the most positive attitude when the most positive attitude was expected to be expressed towards eating meat. Second, based on behaviour, the positivity towards farm animals should have swapped places with attitudes towards eating meat after experiencing dissonance. The stability of attitudes towards farm animals

is in these ways difficult to explain: unlike the other attitudes, it seems highly resistant to change.

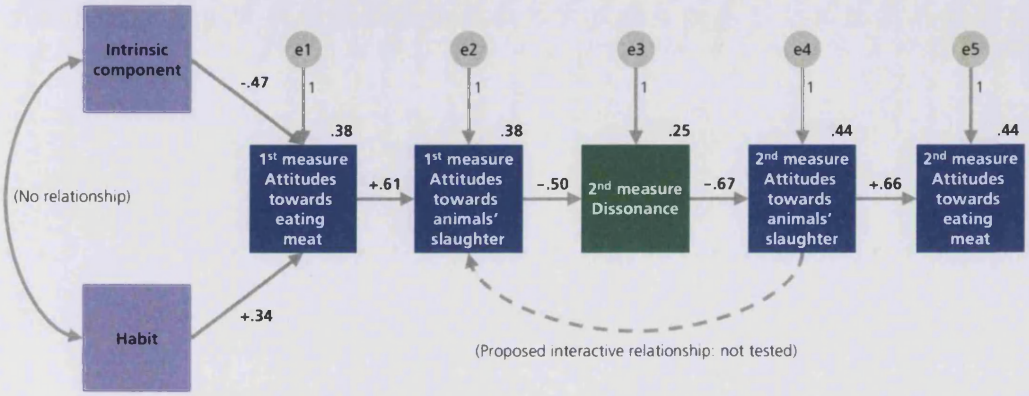
The greatest single attitude change was experienced by vegetarians with regard to eating meat. It was not a statistically significant change, perhaps due to the small sample size, but nevertheless, vegetarians were expected to experience the least dissonance and attitude change because their explicit attitudes and behaviours were more consistent at the outset than meat-eaters'. It was also likely that the vegetarian participants had already experienced dissonance in the course of their decision to become vegetarian (assuming they were not vegetarian from birth). The greater attitude change for vegetarians than meat-eaters are in these ways surprising. However, ignoring the stable attitude towards farm animals, vegetarians' attitudes towards meat and animals' slaughter faced little resistance to increased negativity, becoming even more consistent with behaviour, as predicted by cognitive dissonance theory. These were therefore easy changes to make; in fact, perhaps easier than maintaining attitudes unchanged and certainly easier than moving attitudes contrary to behaviour, as meat-eaters did.

6.8 Key attitudes and causal relationships

Causal attitudes or experiences cannot be easily identified because each correlated factor can 'predict' the other in the language of regression analysis. Some intuitive assumptions can be made, however, based on the order of relationships found (and not found) and their fit with the theories and the focus group data. A path analysis model, Figure 14, tests these assumptions (the statistical tables are in Appendix H, see Table 41).

Path analysis is an extension of regression modelling, depicting a figure in which single-headed arrows indicate theoretical causation (Bryman and Cramer, 1990). While path analysis treats the single-directional relationships as causal, this is a theoretical relationship as each individual regression could have been drawn in reverse (although it may not make theoretical sense and the model as a whole may fail). Ultimately a different research design would be necessary to confirm some of the individual causal directions assumed in this model. The following analysis identifies which directional relationships can be confidently asserted, and which cannot. (While the $\chi^2=96.0$ value indicates that the model is a poor fit, this would be expected from the small sample size and does not undermine the model, e.g. see Derkzen, 2007.)

Figure 14: Path analysis of key meat-eaters' relationships in the quantitative study



The model shown in Figure 14 was built in Amos V5 from the meat-eaters' data to explore how attitudes affected each other through the research. Variations modelled the previously correlated variables and refined the model to achieve the most parsimonious analysis containing only statistically significant relationships. (The exception is the relationship between the two exogenous variables, Intrinsic component and Habit, where a bidirectional arrow was included per statistical requirements, which only confirmed the lack of relationship).

The final path analysis confirms some previous relationships identified in this Chapter. A regression is shown along the single-headed arrow for each assumed causal relationship between variables. All β relationships (positive and negative values) are significant at $p<.001$. (The circular error controls and their regression weightings of 1 are included in Figure 14 to show that the model is statistically compliant, but are not otherwise informative). By controlling for the effects of prior variables, the model estimates the variance explained by preceding variables, shown alongside each box. Thus, 38% of the variance in the first measure of meat-eaters' attitudes towards eating meat can be explained by their evaluations of farm animals for Intrinsic reasons and Habit of eating meat. Together all of the preceding variables in the relationships represented by the model account for 44% of the variance in attitudes towards eating meat by the end of the study.

Figure 14 demonstrates that the Intrinsic component (identified from the factor analysis of detailed reasons for evaluating animals) and the Habit variable (identified from reasons for eating meat) both contributed to the first measure of attitudes towards eating meat (β=-.47, and β=.34, respectively). The model rejected the

relationship between the Intrinsic component and attitudes towards animals' slaughter. Habit, as a reason for eating meat, is tautological: meat-eaters positively evaluated eating meat because they ate meat. It is possible to reverse the causal relationship between attitudes towards eating meat, the Intrinsic component for positively evaluating animals, and Habit. However, the model would have failed at this point because neither the Intrinsic component nor Habit correlated significantly with attitudes towards animals' slaughter. Nevertheless, the causal direction of these relationships can only be tentatively proposed and should be tested by other methods in the future to increase confidence in the causal direction as shown.

As plentiful evidence has now shown that attitudes towards eating meat do not conventionally include behavioural beliefs about animals' slaughter, the model records the relationship from attitudes towards eating meat to attitudes towards animals' slaughter (β=.61). Attitudes towards animals' slaughter can only work in the causal position shown in the model because the regressions only connect attitudes towards eating meat with attitudes towards animals' slaughter, and attitudes towards animals' slaughter with the increase in cognitive dissonance. Hence, to remove the variable, or place it in a different causal relationship, results in failure of the model. Also, the relationship between the measure of dissonance and the attitudes can be confidently asserted as causal because dissonance (the dependent variable) was increased by manipulating the attitudes (as independent variables), and attitudes were then measured again (as dependent variables), following the experience of dissonance (which then became the independent variable). Consequently, the experimental design had already identified that cognitively connecting the attitudes towards farm animals, their slaughter and eating meat increased dissonance between the first and second measure. The model confirmed that attitudes towards animals' slaughter were key in this causal relationship (β=-.50). The previously discussed regression analyses failed to identify a direct relationship between cognitive dissonance and the reduced attitudes towards eating meat, but they did identify a relationship between experienced dissonance and attitudes towards animals' slaughter. Figure 14 confirms this relationship (β=-.67). Thus, despite relying on regression analyses, the model only works with dissonance causing an increase in negative attitudes towards animals' slaughter which, in turn, causes a reduction in positive attitudes towards eating meat.

Looking back in the model, because meat-eaters who initially had particularly negative attitudes towards animals' slaughter tended to experience particularly high dissonance levels, this means that meat-eaters with more negative post-dissonance attitudes towards animals' slaughter may now be more susceptible to dissonance in the future. Thus there may be an interactive relationship; attitudes towards slaughter caused dissonance, which caused (changed) attitudes towards slaughter, which could cause further dissonance ... and so on, as shown by the dashed arrow in Figure 14. This proposed interactive relationship cannot be directly tested by this model, hence its dashed differentiation.

Finally, with the attitudes specifically connected, as in this research, meat-eaters whose attitudes towards animals' slaughter became more negative also experienced less positive attitudes towards eating meat (β=.66). Again the relationship is therefore interactive, but this time the effects of dissonance were mediated through the attitudes towards animals' slaughter. Hence attitudes towards animals' slaughter can be said to cause attitudes towards meat in the unusual conditions of a cognitive connection between these attitudes, ensuing dissonance, and consonance restoration through attitude change (rather than denial strategies).

6.9 Evaluating hypotheses and answers to research questions

1) Vegetarians would evaluate animals more positively than would meat-eaters.

   McDonald's (2000) and Knight et. al.'s (2003) research discussed in Chapter 1 emphasised that vegetarians liked animals. This distinction was problematic due to the lack of control measures. This concern has been upheld by demonstrating that vegetarians did not evaluate farm animals significantly more positively than did meat-eaters (however, the small vegetarian sample size creates low statistical power of these tests). However, the detailed reasons for positively evaluating animals did seem to differ between meat-eaters and vegetarians, suggesting that vegetarians may evaluate animals for more intrinsic reasons than meat-eaters. In contrast meat-eaters reasons for positively evaluating animals did not fit with the rest of the data. The potential reasons for this result have started to be

analysed and the discussion in the next Chapter develops these ideas further.

2) Meat-eaters would tend to positively evaluate animals for instrumental reasons, while vegetarians would tend to evaluate animals for perceived intrinsic qualities.

   Following the concerns about other research lacking definitions about what "loving animals" means, here distinctions were made between instrumental and intrinsic ways of evaluating animals. This distinction was worthwhile as it demonstrated vegetarians' high evaluations of animals for their perceived intrinsic qualities. However, as noted above, meat-eaters' detailed evaluations of animals did not match their overall attitudes, suggesting that this explicit measure of detailed evaluations, perhaps in the same way as the focus groups measured attitudes on a different level to those in the quantitative research, measured meat-eaters' rationalisations for positively evaluating animals. In this sense the results remain worthwhile. Meat-eaters did tend to explicitly evaluate farm animals instrumentally in comparison to vegetarians, who emphasised more intrinsic qualities.

3) Vegetarians would show a stronger negative response to animals' slaughter than would meat-eaters.

   Again, based on the previous research stating that vegetarians are vegetarian because they like animals—assuming that this meant that they positively evaluated animals for intrinsic reasons more than meat-eaters did—they should have objected to animals' slaughter. Vegetarians did show stronger negative responses to animals' slaughter than did meat-eaters and attitudes towards animals' slaughter seemed to be a key reason for avoiding meat. However, the results identified that meat-eaters' attitudes towards animals' slaughter were also negative.

4) Participants would prefer meat pictures to animal pictures.

   Implicit attitudes were expected to be based on the mere exposure effect and subliminal attitude conditioning. Hence, greater exposure to meat than farm animals was expected to be reflected in these results. However, participants did not prefer meat pictures to farm animal pictures, in fact the opposite.

5) Participants would prefer animal pictures to slaughter pictures.
On the same bases of the mere exposure effect and subliminal attitude conditioning alone, participants were expected to prefer pictures of animals to pictures of animals' slaughter. This was the case. All participants preferred farm animal images to animal slaughter images.

6) Vegetarians would demonstrate disparity between explicit and implicit attitudes.
Because implicit attitudes are based on automatic effects, in contrast to explicit attitudes which can be consciously considered, disparity between explicit and implicit attitudes, such as Greenwald and Banaji (1995) found, is not uncommon. Vegetarians in this study were expected to have received the same exposure and conditioning effects as meat-eaters and to have consciously chosen a vegetarian lifestyle. Hence their explicit attitudes towards meat were expected to reflect their eating behaviour, while their implicit attitudes were expected to better match meat-eaters' and the proposed conditioning effects. In fact, neither meat-eaters nor vegetarians demonstrated disparity between explicit and implicit attitudes, and both groups' attitudes towards farm animals were more positive than their attitudes towards eating meat and animals' slaughter in the explicit and implicit measures.

7) Dissonance would increase between the first and second measures.
Following cognitive dissonance theory, it was proposed that focusing participants' attention on their own attitudes would create dissonance if they believed their attitudes were inconsistent with each other in any way. Dissonance did increase between the first and second measures.

8) Dissonance would reduce following attitude change.
Again, following previous cognitive dissonance research showing consonance-restoration as a result of attitude change, the same result was predicted here. In fact, as discussed, dissonance did not significantly reduce following attitude changes.

9) Meat-eaters would report greater dissonance than vegetarians through the course of the research.
Based on the expectation that focusing on perceived inconsistent attitudes

causes dissonance, meat-eaters' explicit attitudes, which were expected to be more inconsistent with each other than vegetarians', were predicted to cause greater dissonance than vegetarians experienced. In fact, as discussed, meat-eaters did not report greater dissonance than did vegetarians.

10) Attitudes would change in the direction of pre-existing behaviours at the end of the research.

As Chapter 3 demonstrated, many previous cognitive dissonance studies have found that to restore consonance, participants tend to change their attitudes to better match their behaviour. This effect is theorised to happen because attitudes are generally easier to alter than behaviours. Thus meat-eaters' attitudes were expected to become more positive towards meat and more negative towards animals; vegetarians' attitudes were expected to become more positive towards animals and more negative towards meat. However, meat-eaters' attitudes did not change in the direction of existing behaviours, although vegetarians' attitudes did. Meat-eaters' attitudes towards eating meat and animals' slaughter moved contrary to their pre-existing eating behaviour.

Answers to research questions

(a) What are people's attitudes towards farmed animals and eating meat—independently, as well as in the context of each other?

Despite different tasks and increases in dissonance, meat-eaters and vegetarians alike consistently evaluated farm animals over eating meat and eating meat over animals' slaughter in both the implicit and explicit attitude measures. Meat-eaters reported evaluating farm animals most positively for the products that could be made from their bodies. Yet this did not correlate with their overall attitudes towards farm animals, suggesting that when they generally evaluate farm animals, meat-eaters do not think of what could be made from animals' bodies, but positively evaluated animals for other reasons.

Meat-eaters' main explicit reason for eating meat was their liking for the taste, but habit emerged as the significant predictive reason for eating meat.

Attitudes towards animals' slaughter are crucial in the relationship between attitudes towards farm animals and eating meat—once this relationship is made explicit.

The changes in dissonance and attitudes reinforce the view that it is often an unacknowledged, invisible 'lack of relationship' for meat-eaters. The meat-eaters who experienced greatest discomfort over the course of the research were those who at the start rated their attitudes towards animals' slaughter most negatively. This data triangulated with vegetarians' reasons for avoiding meat, which in turn predicted attitudes towards animals' slaughter.

(b) Do people's explicit attitudes match their more automatic (non-conscious, or implicit) attitudes, and do any attitudes match people's reported behaviour?

Explicit and implicit attitudes matched in this research, the implicit attitudes showing the relative order of preferences by directly comparing attitudes, and the explicit attitudes demonstrating whether they were positive or negative.

Meat-eaters' eating behaviour was consistent with their positive attitudes towards eating meat. Vegetarians' eating behaviour was also consistent with their negative attitudes towards eating meat. Meat-eaters' more positive attitudes towards farm animals than eating meat are at odds with their behaviour if the attitudes are brought into context with each other (which they usually are not) and if, as has been argued here, meat-eaters positively evaluated animals for reasons other than the products that can be made from their bodies. This is explored further in the next Chapter.

(c) In what relevant ways do vegetarians' and meat-eaters' attitudes differ, and in what ways are they similar?

Meat-eaters tended to explicitly positively evaluate farm animals for more instrumental reasons, in contrast to vegetarians who emphasised more intrinsic reasons, suggesting that the groups evaluated farm animals in fundamentally different ways. Nevertheless, the same intrinsic reasons were identified by factor analysis for both groups, suggesting that relationships between such concepts are similar for both meat-eaters and vegetarians, but that their contribution to overall attitudes towards animals may differ in quantity. However, the qualitative and quantitative results have raised concerns about these detailed evaluations of animals which are explored more fully in the next Chapter.

Vegetarians avoided meat mainly for ethical reasons. The regression analysis results confirmed that vegetarians avoided meat because they disliked animals' slaughter, not because they especially positively evaluated farm animals or disliked meat itself. However, vegetarians' automatic reactions (i.e. not under conscious control) to meat

were more negative than meat-eaters'. Together with results demonstrating that vegetarians, unlike meat-eaters, connect the use of animals' bodies to animals' slaughter, vegetarianism is explained as driven by negative attitudes towards slaughter and maintained by a genuine, consequential qualitative and automatic change in attitudes towards meat.

Meat-eaters' and vegetarians' attitudes towards eating meat and animals' slaughter all became less positive (or, more negative), suggesting that both groups responded in qualitatively the same way to dissonance. (Vegetarians' attitudes are only used here as a point of contrast against meat-eaters who are the focus of this study.)

(d) Does simply focusing on genuinely held, relevant attitudes cause dissonance?

Yes, dissonance increased over the course of the study.

(e) Is consonance restored through attitude change and, if so, do attitudes move in expected directions?

Rather than their attitudes towards eating meat becoming more positive, as predicted, meat-eaters reduced their positivity towards eating meat and increased their negativity towards animals' slaughter. Meat-eaters' attitudes towards farm animals also slightly reduced in positivity, but, unlike their attitudes towards meat and animals' slaughter, the reduction was not statistically significant. In fact, overall attitudes towards farm animals were remarkably stable given the significant changes in other attitudes and discomfort experienced during the research.

Vegetarians' increased negativity towards eating meat and animals' slaughter is in the predicted direction.

Unexpected results

Four anomalies stand out between the anticipated and actual results. First, meat-eaters preferred farm animals to meat; second, meat-eaters' attitudes (with the exception of attitudes towards animals' slaughter) became more uncertain rather than more extreme; third, meat-eaters' attitudes towards eating meat and animals' slaughter became more negative, and fourth the dissonance reduction following attitude changes was insufficient to demonstrate statistical significance.

CHAPTER 7

Psychological consistency, inconsistency and cognitive dissonance in evaluating farm animals and eating meat

The thesis introduced on page 11 drew on some commentators' insistence that eating meat is inconsistent with positively evaluating farm animals. It argued that if these views were right, then there should be psychological evidence of people's perceived inconsistency that would demonstrate how the inconsistency was handled to allow the same people to eat meat and positively evaluate animals. The results provided some evidence for psychological inconsistency, but there were also some surprises. This Chapter discusses the theories introduced earlier in light of these results.

7.1 Patterns of meat-eaters

The cultural commentators introduced in Chapter 1 demonstrated different perspectives on eating meat and positively evaluating animals. There it was questioned whether any of these commentators actually represented more ordinary meat-eaters who had not so explicitly and publicly analysed their opinions. The focus groups enabled meat-eaters to express their views from which some patterns resonate with those commentators whose ideas now tentatively provide frameworks to categorise the groups' discussions. These frameworks are included here, rather than with the previous results section, because they are impressionistic, intended for interpretive purposes rather than as solid answers to research questions. The qualitative research sample was too small to allow greater certainty. Nevertheless, future research may evaluate these tentatively observed patterns.

For now, the participants have been categorised according to their predominant stances, but the categories are not discrete as participants and arguments often blurred into each other. Hence it is the structure and patterns of attitudes that are of interest, rather than any quantitative analysis. However, while there were insufficient numbers of focus group participants to analyse these patterns quantitatively, the observed patterns are later, again tentatively, compared to the quantitative data.

Knowingly-in-denial meat-eaters

Two focus group participants experienced awareness of inconsistency and unhappiness at causing suffering. Although they enjoyed the taste of meat, they believed that this enjoyment was, all things considered, insufficient reason to kill farm animals.

These participants were unwilling to personally kill unless it was essential for their own survival, which they felt was not the case in modern Britain. They experienced

guilt and discomfort, fitting Cohen's (2000) description of denial, but were aware both of their own denial and that they could not function as meat-eaters without it. They claimed to often feel unhappy about the animals behind their meat, but deliberately pushed such thoughts away.

In fact, these participants' responses to meat-eating were more like Johnson's (2004) than Cohen's (2000) own. The slaughter that so affected Johnson (2004) is something that these participants would rather not know about and so they pretend that it is not true, or at least not known. Knowing and not knowing—the denial paradox—was prevalent in the data. These participants can be identified as "meat-eaters knowingly-in-denial".

Taboo-bound balance-sheet meat-eaters

Fifteen participants agreed with those who knew they were in denial. They too had often experienced pangs of guilt and preferred not to think about the life and death of meat. But they said that overall they liked the taste of meat sufficiently to justify the cost to animals. Like those knowingly-in-denial, these participants were also unwilling to personally kill for meat under normal circumstances, and were unwilling to eat species or body parts that were taboo in Britain. When challenged by others, they agreed that they were inconsistent but remained steadfast in their views of edibility. These meat-eaters aimed to maximise their consistency and felt that they did so as far as they could. These participants can be identified as "taboo-bound balance-sheet meat-eaters".

Taboo-free balance-sheet meat-eaters

Four participants also assumed a cost-benefit approach to their meat-eating. Where they differed was in arguing that they would eat outside the bounds of British taboos and personally kill for meat. Although they had not done so, they felt that when abroad they would be willing to eat national dishes irrespective of which animal, or body part, the meat came from. Their views most matched Fearnley-Whittingstall's (2004), and they aimed to maximise consistency overall (in principle if not in practice). These participants can be identified as "taboo-free balance-sheet meat-eaters".

Logic-of-the-larder meat-eater

This final distinction actually comprised only one participant. She demonstrated the most explicit moral reasoning of all arguing, like Scruton (2000), that if

it were not for people eating certain animals then these animals would not be created and hence it was her duty, as an animal-lover, to eat meat. This view was powerfully argued, laid out as statements of irrefutable fact. Other participants, to whom the argument was addressed, either lacked the ideas, or the will, to contradict the forceful proponent. Although the reasoning was the same as Scruton's (2000), no reference was made to him or to other public sources of this argument. This meat-eater claimed to be entirely consistent and can be identified as the "logic-of-the-larder meat-eater".

Cultural commentators, quantitative data, and focus group patterns

Underlying some of the public representations in Chapter 1 do seem to be patterned private phenomena. The quantitative data add an extra dimension to these tentative patterns, assessing how these consciously considered views compare to the results gleaned from the experimental methods which measured more automatic responses. However, although focus group participants did have an underlying stance, they also often agreed with other viewpoints (balance-sheet meat-eaters acknowledging their often experienced discomfort, and those knowingly-in-denial agreeing that they must like the taste of meat a lot, for example). The exception was the logic-of-the-larder meat-eater, whose arguments were more uniform and discrete.

Johnson's (2004) distress and inability to consume the meat of the cow whose slaughter he had witnessed, and Cohen's (2000) view of his own denial as inexplicable, were strongly represented in the focus groups. The prevalence of denial, acknowledged at some stage by all but one participant, not just those knowingly-in-denial, suggests that, in this context at least (and in tune with Cohen's, 2000, theory), denial is far from aberrant, but normal. The focus groups also provided evidence for Fearnley-Whittingstall's (2004) cost-benefit approach and Scruton's (2000) logic-of-the-larder philosophy.

The unexpected presentation of animals' perceived intrinsic qualities through concern for animals' treatment also mirrors Fearnley-Whittingstall's (2004) approach. He too argues against 'cruel' treatment, favouring less intensive and more natural farming methods, but does not articulate the reasons for this. Perhaps the reasons are too obvious to him, like when these focus group participants agreed, without discussion, that animals experienced pleasure and pain. Alternatively, perhaps focusing on animals' subjective experience would raise other concerns, about their slaughter, say, that form a

wider challenge to meat-eating. Hence it might be possible that an explicit concern for animals' perceived mistreatment, is in itself a form of coping (distraction or denial) strategy to avoid a wider concern for animals' experiences. This warrants further research.

Those knowingly-in-denial meat-eaters were, like Johnson (2004), painfully honest, seeing themselves as guilty and inconsistent. Although these participants found their lack of consistency and state of denial perplexing and intellectually interesting, the strongest impetus for their condition and its maintenance seemed to be their concern for animals' suffering, rather than dissonance itself. Whatever they did or said, they found no way to satisfactorily justify animals' treatment, yet remained meat-eaters. The social intuitionist model of moral judgements introduced in Chapter 3 explains the experience of those knowingly-in-denial: Haidt (2001) found that people's inability to understand their own intuitive judgements under scrutiny is common, despite immediate and strong commitment to them.

Both groups of balance-sheet meat-eaters calculated a rough implicit formula of suffering measured against the pleasure they felt when eating meat. The logic-of-the-larder meat-eater also focused on cognitive arguments and intellectual reasoning.

Thus, generally speaking, the knowingly-in-denial meat-eaters used more explicitly emotion-based arguments than the other groups. They described their emotions and views as personal experiences, without trying to persuade others of their correctness. They sometimes admired the other participants who seemed to use intellect and formulae, rather than emotion, to argue their case. Those knowingly-in-denial spoke as if confessing a personal truth. For others, an intellectual argument or debate had less deeply personal relevance.

Therefore, it was not just the content of the groups' discussion that differed, but the styles of presentation. These styles are similar to Greene's (2007) distinction between 'up close and personal' dilemmas versus impersonal dilemmas, building on Latané and Darley's (1970) and Unger's (1996) research on bystander and moral problems introduced in Chapter 3. They also tie in to Stone and Cooper's (2000) emphasis on the level of interpretation of the meaning of behaviour which affects the experience and motivation of dissonance. Hence, these participants interpreted their behaviour of eating meat differently, leading to greater experience of dissonance for those knowingly-in-denial, for whom the problem was personally more relevant than for

other participants. It is possible that these participants' self-beliefs (as Plous, 1993, suggests) were threatened, unlike other participants. Greene's (2007) neuroimaging methods could be used in future research as they may identify whether knowingly-in-denial meat-eaters use areas of the brain associated with emotion and social cognition, while other meat-eaters use areas associated with working memory. If so, this would not only support Stone and Cooper's (2000) theory further, but also contribute to the research of moral dilemmas, as the interpretation of the content of the dilemma is important and hence variable responses can be expected to complex real-world dilemmas.

The evidence can also resolve the contradiction between those introduced in Chapter 2 who argued that people are troubled by their uses of other species and those who argued that consumers just don't care. Everyone seemed to care; albeit to differing degrees, and with different reasoning about what is right and wrong and why. Everyone also agreed that factory farming and slaughter methods could be cruel and would prefer a more humane method of making meat.

So the fashion industry experts who claimed that fur buyers simply do not care about the animals who comprise their garments, are unlikely to be correct. The anguish of the knowingly-in-denial group would make them unlikely fur consumers. Fur consumers are therefore more likely to pursue a balance-sheet philosophy to the lives behind their purchases.

However, while the point of the focus groups was not to derive quantitative data but to explore the range of views and observe patterns, the distribution of participants' views is, on the face of it, at odds with the quantitative data. The most prolific balance-sheet arguments cannot explain why animals were evaluated more positively than eating meat in the attitude questionnaires and IAT; in fact their arguments oppose the quantitative results. The explicit and implicit attitude measures found that participants showed consistently positive attitudes towards farm animals, both more positive than their attitudes towards meat and, in the IAT which directly compared attitudes, a significant preference for images of farm animals over images of meat. The ensuing dissonance confirmed that these preferences were psychologically inconsistent with each other and participants' behaviours. Johnson's (2004) experience matches the quantitative results where meat-eaters evaluated animals more positively than eating meat. The analysis of Johnson's (2004) experience and Cohen's (2000)

arguments can explain why the quantitative data revealed higher evaluations of farm animals than eating meat. However, this means that the quantitative data best fits the knowingly-in-denial pattern. Minority logic-of-the-larder meat-eaters would be expected to be lost in the quantitative data, but balance-sheet meat-eaters should have produced more positive attitudes towards eating meat than animals overall.

There are two possible explanations for this. First, the quantitative methods may have comprised more participants who were knowingly-in-denial than appeared in the focus groups. Second, the qualitative and quantitative methods may not have just measured the same target in different ways; they may have measured different targets. The focus groups asked people to consciously consider and explain their views to others. Rationalisations are often seen as a problem for methods relying on introspection. Under focus group conditions, participants explained and justified their views and behaviour to others; and they had plenty of thinking time in which to do so. In the quantitative attitude measures, participants sat alone in a cubicle, feeling more anonymous, and they were instructed to respond as quickly as they felt comfortable. The IAT also reveals automatic responses, not filtered through the reasoning processes of the focus group discussion. It is therefore possible that focus group participants believed their balance-sheet arguments genuinely expressed their views as they 'worked them out' in the groups, but that these arguments did not reflect their less considered attitudes towards eating meat and evaluating farm animals.

Based on the prolific balance-sheet arguments in the focus groups, it is unlikely that a shift in sampling could have produced quantitative research participants who differed so fundamentally. It is more likely that balance-sheet arguments represent post-hoc rationalisations, demonstrating one way in which meat-eaters handled being a meat-eater and positively evaluating animals.

The knowingly-in-denial pattern stands out, therefore, as the best tentative explanation of the quantitative results. These participants found their preference for farm animals over meat, coupled with meat-eating behaviour, which they themselves saw as facilitated by their own denial and cultural dissociation variables, to be inexplicable. This pattern alone matches the attitude and dissonance data.

The best tentative evidence for how well-matched the knowingly-in-denial pattern is to the quantitative data comes from the increased dissonance and attitude change experienced by the focus group participant 4C. Throughout the discussion, her

level of discomfort increased and her evaluation of eating meat decreased; the end of Chapter 5 observed that this was contrary to cognitive dissonance theory's expectations. However, this pattern went on to be quantitatively endorsed, suggesting that the knowingly-in-denial pattern represents the qualitative mirror image of the quantitative results. Naturally, more research is required to confirm this view.

7.2 Consistent and inconsistent relationships between attitudes and behaviour

This study supports much of Plous's (1993) and the Braithwaites' (1982) earlier work. Despite the passage of time, and three continents, meat-eaters in this research remained concerned about farmed animals' well being and supported the use of these same animals. They also condemned many production practices, and consumed the results of those practices.

This research has further supported previous findings outlined in Chapter 2 that meat-eaters' understanding of the modern meat industry is limited even among those with a childhood farming background. No focus group participant claimed that they did not care, or that the issue never occurred to them. Although facts about factory farming and slaughter techniques were questioned, and general widespread ignorance about the industry was acknowledged, no-one argued that modern methods of mass meat production were humane. Opinion was more divided over whether less intensive farming was cruel. Focus group participants agreed that they do not like to dwell on meat production and animal slaughtering, which supports Cohen's (2000) theory of denial and lends weight to the theory that perhaps focusing on mistreatment of animals is itself a defensive strategy to avoid considering farm animals' wider experience.

Although farm animals' slaughter was expected to be the least preferred attitude target, meat-eaters (and vegetarians in the implicit measure) were expected to prefer meat over animals (a) to match meat-eaters' eating behaviour, (b) because of the effects of familiarity, and (c) due to evolutionary and social associations between meat and the satiation of hunger. In fact, both groups, in both the explicit and the implicit attitude measures, had more positive attitudes towards farm animals than eating meat. Given that meat-eating may be a thrice-daily behaviour for meat-eaters, in contrast to the more esoteric evaluations of farmed animals, and that attitudes normally mould to

pre-existing behaviour patterns (as evidenced by the wealth of existing cognitive dissonance work), these results are surprising.

The unexpectedly positive attitudes towards farm animals proved highly resistant to change. This stability, especially in contrast to attitudes towards eating meat, points either to evolved predispositions (as Serpell, 1996, and Ryder, 2000, argued), or very profound and widespread social forces, immovable by cognitive dissonance. Why attitudes towards eating meat were not as positive or stable as attitudes towards farm animals is intriguing given many evolutionary theorists' emphasis on the past importance of eating meat.

There was no evidence for Ryder's (2000) view that people possess a deep-seated drive to dominate animals. Participants' reasons for eating meat seemed more mundanely motivated: quantitative results agreeing with focus group emphases on 'taste', while regression analysis revealed that 'habit' was strongly related to attitudes towards eating meat. If Ryder (2000) was correct, then different reasons for positively evaluating animals should have been found, perhaps emphasising status; instead, status was the least likely reason for meat-eaters and vegetarians alike to positively evaluate farm animals.

Hills's (1993) use of the dominance concept, where animals are subjugated simply for use, rather than to fulfil a drive to dominate for its own sake, could therefore perhaps be re-labelled "willingness-to-use", even if, for those knowingly-in-denial, it was an "unwilling willingness-to-use". In this sense, there was support for the notions of compassion and willingness-to-use other species.

The theory proposed here is that in issues as embedded in our culture as eating meat and positively evaluating animals, Greenwald and Banaji's (1995) view of automatic attitudes makes better sense than traditional attitude theories' conceptions of meat-eating and evaluating animals as consciously-considered, intentional attitudes. The evidence from this study also supports this view because, although the explicit and implicit attitude measures matched each other, they did not match the majority of focus group evidence where attitudes were consciously considered. That is not to say, however, that these theories are mutually exclusive; further research would be required to make any claims about whether the conscious/non-conscious relationship can be deemed discrete or continuum-based.

However, a problem with comparing attitudes towards farm animals and attitudes towards their slaughter with attitudes towards eating meat is that they cannot be

compared like-for-like. Farm animals are not a behaviour; eating meat is. Ajzen's (2002) theory about behavioural beliefs combined with this research's focus groups and cognitive dissonance experiment shows that meat-eaters do not ordinarily hold beliefs about farm animals and their slaughter readily accessible in their set of beliefs about eating meat. Top of the list of beliefs about eating meat are those relating to taste. Thus it would be wrong to claim that meat-eaters' behaviours do not match their attitudes. Their overall attitudes towards eating meat were positive; this is consistent with their behaviour.

This returns to the question of whether meat-eaters are inconsistent or not. On the single dimension of eating meat, they are consistent: they have positive attitudes towards meat overall and they eat meat. The animals whose bodies comprise that meat may rarely come into focus in the context of eating meat. However, focus group participants reported previously experiencing the discomfort caused by knowledge of this relationship. At this point the discomfort can be fairly acute, as would be expected by the more positive attitudes towards farm animals than eating meat found by the quantitative research. Here meat-eaters are inconsistent and do not maximise consistency overall. It is little wonder that denial prevents these thoughts from becoming uppermost in beliefs about eating meat.

With the exception of the logic-of-the-larder meat-eater, focus group participants felt that there was inconsistency in the relationship between eating meat and positively evaluating animals. The taboo-free balance-sheet meat-eaters felt that they maximised consistency overall, while taboo-bound balance-sheet meat-eaters felt that they were inconsistent in many respects. Those knowingly-in-denial accepted their perceived inconsistency but were unhappy with it.

The taboos identified by Leach (1964) and Eder (1996) remained largely inviolable for most focus group participants. Those few who felt that they would be willing to break the taboos outside of their home culture, drew shocked exclamations from fellow participants. However, while the narrow range of animals conventionally eaten in Britain suggests that social taboos define species' edibility, these taboos remain inadequate to altogether remove eaten animals from the frame of moral concern.

The broad lack of automatic connection between farm animals and eating meat itself supports the previous research identified in Chapter 2, especially concerning dissociation variables and the absent referent, and might also indicate the unconscious

collective moral feeling, or moral norm, that Eder (1996) emphasised. But these theories can now be improved upon by saying that it is not animals, or animals in meat, so much as animals' slaughter that features in vegetarians' attitudes towards meat. This returns to the problems posed by previous research identified on p.22. Vegetarians' greater negative attitudes towards animals' slaughter can account for their concern for animals' welfare that was previously identified.

No-one went as far as Eder (1996) in seeing conventional Western acts of slaughter as moral or ritualistic processes, but there was agreement among focus group participants that professionals, rather than amateurs, should kill. This agreement stemmed from concern for animals' experiences and focus group participants' unwillingness or inability to slaughter. Therefore, there was no evidence that the dissociation variables were ritualistically meaningful in themselves, rather they appeared simply functional. Again the differences between attitudes in the quantitative research endorse this view.

7.3 How dissociation variables and denial remove animals from meat

Research data confirmed that the life and death behind meat is unpleasant to think about. Many focus group participants freely and explicitly commented that this had not just occurred to them within the focus group, but that it had often troubled them before, if only momentarily. Negative evaluations of animals' slaughter in both the implicit and explicit attitude measures further support this view, as does the discomfort found by the dissonance experiment.

Supporting Povey et. al.'s (2001) theory (see p.21), meat-eaters did not often consider the animals in their diets unless prompted. Some focus group participants even showed surprise when the relationship between eating meat and positively evaluating animals was first pointed out; but they did know about the relationship.

Focus group participants overwhelmingly agreed that the meat they ate was abstracted from the animal, confirming Adams's (2000) concept of the absent referent. There was also support for Plous's (1993) concept of dissociation variables among the focus groups: once one variable had been offered by a participant, unilateral agreement quickly followed with a cascade of other variables, all previously outlined by Plous (1993). Despite different research questions, at some stage all groups commented on the

unrecognisability of animals in meat cuts, packaging, presentation, and far away factory farming and slaughtering: remote even from the rural participants with farming experience.

In some ways many of these variables were felt to deliberately manipulate consumers. Some meat-eaters argued that consumers were calculatedly deceived about the origins of their food—and the poor quality of lives, deaths, and products, behind them—in order to maximise consumption and profit. Much as they disapproved, for many participants these feelings of being deceived and cheated did not alter their consumption.

Dissociation variables are not entirely successful, however. The majority of focus group participants would rather not think about the issues or their consistency, but they can and sometimes do.

Participants agreed that dissociation variables meant that they did not have to kill animals themselves, which few thought they could do, and that they could consume meat, to a large extent, in 'blissful ignorance' of the life and death behind it. Thus, the application of Latané and Darley's (1970) research on the diffusion of responsibility and invisibility of the victim to this new area is endorsed. Most meat-eaters do appear to use strategies of denial to eat meat and positively evaluate animals without equating the two. That is, as Cohen (2000) suggests, knowledge is not refuted, but it is assigned to less troublesome categories where the ideas do not interact. When they are brought together, meat-eaters are aware of having known about the ideas and their relationship all along, and sometimes even that they have been active in their separation and avoidance.

Two aspects of meat-eaters' detailed evaluations of farm animals were problematic. First the high evaluations of animals for the products that can be made from their bodies and second the negative intrinsic evaluations. These evaluations alone would suggest that meat-eaters' attitudes towards farm animals are consistent with their attitudes towards eating meat and eating behaviour. However, there is a weight of evidence against this interpretation. The detailed evaluations do not match either the explicit or implicit attitudes as, if animals were positively evaluated for the products that could be made from their bodies then, as the most prevalent product, meat should have been evaluated as highly as, if not more highly than, farm animals. Especially when considering implicit attitudes, it make no sense for components to be evaluated more positively than the desired end product. The negative attitudes towards farm animals'

slaughter, a necessary part of meat production, support this view. This is also endorsed by the correlation analysis, which demonstrated that the products that could be made from animals' bodies were not what came to mind when participants rated their attitudes towards animals. Hence, the positive attitudes towards animals had nothing to do with how their bodies can be used for meat.

The strongest indication that participants believed that their attitudes were inconsistent stems from the increase in dissonance as attitudes' relationships were made explicit. The reduction in positivity towards meat, and increase in negativity towards animals' slaughter, following the increase in dissonance caused by considering the relationships between attitudes, also strongly supports the theory that farm animals were evaluated more positively than meat, that attitudes towards animals were stable, and that when farm animals and meat were brought into context with each other, dissonance ensued. This indicates that these attitudes were considered to be at odds with each other, and not that animals were positively evaluated as a part of meat (which would be consistent and cause no dissonance). Further, the lack of consonance restoration demonstrates that consistency was not maximised between attitudes and behaviour through the research. This was because the 'spreading of alternatives' increased inconsistency overall between attitudes and meat-eating behaviour (attitudes towards farm animals remaining stable, while attitudes towards eating meat and animals' slaughter became more negative).

However, while the quantitative results suggested that denial of the lives and deaths behind meat is widespread, in contrast, it was the qualitative results that showed that animals are positively evaluated for their perceived intrinsic qualities, which was not the case in the quantitative results. But, these evaluations were not made explicitly even in the qualitative research. When asked, participants immediately agreed that farm animals experienced pleasure and pain, without any discussion, the answer being obvious to them, but otherwise the only indication that these experiences were positively evaluated came from arguments about the wrongness of animals' treatment. The causation of pain and suffering being heavily criticised, often to the point of there being 'no excuse' for it, only makes sense if animals' sentience is positively evaluated. Yet it was the treatment that drew attention, not the reasons for its objection. This is typical when implicit judgements are automatically made that do not necessarily match consciously reasoned ideas. As Haidt (2001) found (see Chapter 3), implicit attitudes

often defy expression, but drive judgements nevertheless. It has already been proposed that there may be a defensive reason behind the separation of this automatic judgement from the consciously reasoned focus on mistreatment.

Consequently the detailed quantitative questionnaires, asking participants whether they evaluated animals for these intrinsic reasons, may not have stimulated the same responses as those made consistently and repeatedly in the focus groups. There the implications of positively evaluating animals' sentience when it is perceived to be violated (which is when sentience becomes relevant) were very clear. Indeed this fits with Ryder's (2000) view that it is less the spectrum of animals' experience that matters morally, but 'painience' (Ryder 2001), seeing the capacity to experience pain as the crucial factor in evaluating the rightness or wrongness of animals' treatment. All focus group participants implicitly, but reliably, applied this same intuitive judgement throughout the discussions.

Further evidence that farm animals were positively evaluated for intrinsic reasons comes from the dissonance caused by the research. If animals were positively evaluated for the products that could be made from their bodies, then there would be no perceived inconsistency, and no cause of dissonance. Crucially, there would also be no reason to have a negative attitude towards animals' slaughter. The final indication that meat-eaters experienced inconsistency is in the correlation between attitudes towards animals' slaughter and dissonance levels: the more negative the attitudes were towards slaughter, the more dissonance was experienced.

Meat-eaters' mean values only rated farm animals for the products that could be made from their bodies, and their contribution to biodiversity, positively. All other mean detailed evaluations were not reasons for positively evaluating farm animals, to different degrees. However, all of the detailed evaluations positively correlated with overall attitudes towards animals, with the exception of positively evaluating animals for the products that could be made from their bodies and as status symbols. Focus group participants agreed, without discussion, that animals experienced pleasure and pain; they talked in terms of respecting farm animals and some discussed animals' souls. The intrinsic evaluations were evident in the discussions about how animals should be treated, but the evaluations themselves seemed intangible to participants who, unlike moral philosophers, were unused to talking in these terms. These results are understood here in the context of dissonance and denial, but they indicate that further research

would be beneficial to explore the reasons for negative, but positively correlated, detailed evaluations.

Given the lack of correlation between attitudes and behaviour in some previous research (discussed in section 3.1), it is therefore accepted that there was a lack of correlation between detailed evaluations and attitudes/behaviours in this study. This suggests that there was something coming between the detailed evaluations of animals and the attitudes towards farm animals which prevented them from matching. However, meat-eaters' recorded detailed evaluations of farm animals (e.g. for the products that could be made from their bodies) did better match their meat-eating behaviour. Chapter 3 laid out Potter's (1996) criticism of attitude theory that when theorists tried to increase the correlation between attitudes and behaviours by making attitude measures more specific, research participants may simply restate their behavioural intentions via attitude measures. In other words, this is the same problem frequently noted in different theories throughout this thesis, and observable in the focus group studies, of rationalising attitudes by working backwards from behaviour. It may have then seemed inconsistent to evaluate animals for intrinsic reasons. While the presentation order of attitude measures was balanced, the fact that the animals were specifically farmed (food) species may have stimulated meat-eating frameworks which affected participants' interpretation of these measures. However, this does not explain why their overall explicit attitudes towards farmed animals were, in comparison, so positive or stable, matching the implicit attitude measures. It is possible that the quantity of measures being undertaken in the study prevented participants from rationalising between the detailed evaluations and the overall attitude measures.

Had it been just the explicit attitude measures that had thrown these detailed evaluations into question, then it would not have been clear which results were 'flawed'. However, the IAT, because the results cannot be consciously controlled, lends weight to the overall explicit attitude measure. Hence the detailed evaluations of farm animals may represent rationalisations, meaning that this area needs further research.

7.4 Cognitive dissonance

Meat-eaters experienced dissonance during the research because their attitudes towards eating meat were at odds with their attitudes towards farm animals and their slaughter, when beforehand, as far as their limited behavioural beliefs were concerned,

these attitudes were unrelated. In response, meat-eaters reduced the positivity of their attitudes towards eating meat, but not enough to make the attitudes negative overall. However, attitudes towards farm animals were already, and remained (becoming relatively even more) positive. Another surprise was that although the increase in dissonance during the research was entirely in tune with the last 50 years' research into cognitive dissonance theory, consonance was not restored following attitude change.

Psychologically, denial can now be understood as a symptom, and consonance-restoration strategy, of cognitive dissonance, which was confirmed by the qualitative study. Participants' discomfort with the relationship between their attitudes towards farm animals and eating meat when they come into the context of one another (which they usually do not) is dealt with by being pushed away, rejected, 'forgotten', denied (reported by focus group participants). This study, like others, may only have achieved attitude change because it left participants with little alternative for avoidance: possibly their preferred dissonance reduction strategy (e.g. McGregor et. al., 1999).

The focus groups endorsed Wicklund and Frey's (1981) theory (and Hills's, 1993, observations), that people's minds are often 'too full' to consider dissonant objects unless they block a goal. Sadly it seems from the focus groups that much of the ordinary conscious content of people's minds is negative: problems and worries. Focus group participants agreed that they deliberately tried not to think about the issues of eating meat and positively evaluating animals and so cognitive dissonance theory, as outlined in Chapter 3, explains that unless the issues blocked goal attainment, they may be 'forgotten', until the owner is once again reminded.

One of the possible responses to dissonance considered in Chapter 3 is changing the cognition least resistant to change (Hardyck and Kardush, 1968). In this case, contrary to hypotheses, attitudes towards meat and animals' slaughter became more negative. These attitudes, therefore, can be said to have responded to participants' perceived reality and lack of consonance with other cognitions. However, the remaining positivity of attitudes towards eating meat suggests that behaviour is unlikely to be affected for most participants because the satisfaction derived from the behaviour and the extent of ensuing pain or loss from ceasing it (Harmon-Jones and Mills, 1999) stand in good stead.

So, this research brought farm animals and their slaughter into focus with each other. Once they shared the same consciousness, meat-eaters perceived themselves to be

inconsistent and experienced the predicted discomfort (dissonance). Rather than reversing their evaluations of farm animals and eating meat, they reduced their evaluations of eating meat, reducing consistency between their eating behaviour and attitude towards meat. While the spreading of alternatives—reduction in evaluation of weaker attitudes, and widening gap between the opposing stronger and weaker attitudes—would normally be expected under cognitive dissonance theory's free-choice paradigm, this should be in the direction of behaviour. The peculiar result here means that quantitative research participants became less consistent between their behaviours and attitudes as a result of the research, than they were beforehand. This relates both to the relationships between their behaviours and all measured attitudes, as well as the main behaviourally-relevant attitude (attitude towards eating meat). This is an unusual result within traditional cognitive dissonance theory, but, as has already been noted, was also observed in one focus group participant.

Attitudes towards farm animals' slaughter also became more negative over the course of the quantitative research and greater negative attitudes towards farm animals' slaughter created greater dissonance. This may mean that, as a result of the research, people are more susceptible to dissonance in the future and even more negative attitudes towards animals' slaughter in an interactive process (see Figure 14, p.123).

The discomfort measures indicated that dissonance was created. This was expected both from the theory and focus group participants' responses. The expected consonance restoration, found in other dissonant experiments after attitude changes had been expressed, was not found here. Similarly, there was little sign that participants were "more confident than ... correct" (Blanton et. al. 2001, p.373). The overconfidence usually associated with cognitive dissonance was missing in this study. This is most likely because the strongest, most positive attitudes—those towards farm animals—did not match meat-eaters' eating behaviours. This is not a recipe for dissonance reduction, as indeed the experiment demonstrated.

If meat-eaters' attitudes towards farm animals and eating meat had been in reverse positions (i.e. attitudes towards eating meat were more positive than their attitudes towards farm animals), or if attitudes towards meat had become negative, suggesting a change in behaviour (toward vegetarianism), then consonance should have been significantly restored in line with other cognitive dissonance experiments. It is possible, therefore, that when attitudes do not match existing behaviours at the outset,

overall uncertainty, but relative polarisation, ensues following a dissonant experience. This possibility warrants further research.

An advantage of Stone and Cooper's (2000) synthesis of cognitive dissonance theories, which was enhanced in Chapter 3, is the flexibility of dissonance motivation depending on how personally relevant the interpretation of behaviour is perceived to be. Chapter 3 also showed that dissonance is culture-specific, as well as content-specific, again with the interpretation of behaviour causing different responses. Research findings are therefore likely to be variable to some degree when real-world phenomena are involved. Consequently, while the results are surprising, they are not beyond the remit of cognitive dissonance theory. Indeed, cognitive dissonance theory can now be improved upon to include an outcome where inconsistency between behaviours and attitudes is increased overall if strong and stable attitudes that are highly personally relevant and are psychologically inconsistent with behaviour are more positive than the attitudes towards that behaviour. This combination of variables will also not necessarily successfully restore consonance through attitude change, as the strongest attitude may not budge in favour of behaviour.

This study can update Plous's (1993) idea that the core inconsistency lies in the collision of people's perceptions of themselves as compassionate with the realisation that they, albeit indirectly, harm animals. Focus group participants did not raise concerns over their compassionate self-concepts, although they were concerned about teaching children to be compassionate through their treatment of animals. Overall, the core tension seemed to be the meeting of genuine concern for farm animals' experiences with the taste of meat (explicitly expressed) and/or habit of eating meat (identified by regression analysis). However, the failure of consonance restoration, along with attitude changes in unpredicted directions, does suggest that dissonance in the quantitative study was motivated at a reasonably high level of personal relevance. If, as is proposed here, the quantitative results can be most likened to knowingly-in-denial patterns of meat-eating, then this also suggests that dissonance is motivated at quite a high level of personal relevance. This is because the theories introduced in Chapter 3 suggested that inconsistencies at lower levels of personal relevance could be more easily resolved by attitude change to restore consonance, while those at higher levels of personal relevance involve greater complexity and consonance is not so easily restored. The evidence demonstrates that the latter seems to be the case in this research. The implications are,

therefore, that with this combination of attitude targets, and a quantitative research environment which disallowed denial strategies, Plous's (1993) view of inconsistency causing discomfort at a high level of personal relevance is a better explanation of the results than Hills's (1993) analysis of her results that inconsistencies lacked personal relevance and were consequently easily tolerated.

It remains to be identified which self-belief(s) may have been threatened by this research, however. Just because the level of personal relevance seems similar to that proposed by Plous (1993), this does not automatically endorse the rest of his theory. He argued that meat-eaters' compassionate self-beliefs were at odds with the realisation that they harmed animals in some ways. This may be the case, but there is insufficient evidence in Plous's (1993) work, and this study's, to test this theory. A more parsimonious explanation might be that people find their evaluations of animals for perceived intrinsic qualities to be at odds with contravening those qualities, or a more general psychological inconsistency of positively evaluating and consuming animals may be relevant. Further research is required to ascertain the precise content of disparity that causes dissonance.

Of course, Hills's (1993) research materials were different to those employed here and she did not directly measure dissonance arousal, attitude change or consonance restoration. Because the participants in this research retained positive attitudes towards eating meat (albeit less positively than at the beginning of the research), they are unlikely to have changed their eating behaviour significantly or permanently as a result of the research alone. They are therefore likely to have employed denial strategies to restore consonance soon after leaving the research environment. It is possible that Hills's (1993) survey measures allowed participants to respond from a position of denial (which has been proposed as the default position), leading to the conclusion that the topic was of little personal relevance to them. Indeed, the previous explanations that Hills's (1993) participants' cognitive capacity may have been 'too full' to consider such issues can now also be seen as allowing 'spontaneous distractions', explored in section 3.4, to enable denial of any perceived inconsistencies. This research, however, attending to the motivation and operation of cognitive dissonance, modifies and adds depth to that conclusion. While denial strategies are allowed to work normally (as in the focus groups in this research as well as potentially in Hills's (1993) surveys), many people may genuinely believe that they maximise consistency overall and are not personally affected

by any remaining inconsistency. But the quantitative measures in this study did not allow denial to operate so easily. For example, the IAT results can be correctly interpreted by participants because of their ease or difficulty with different test conditions. The dissonance measures also drew participants' attention to the relationship between their attitudes, all in an anonymous setting where self-presentation forces were minimised.

Consequently both Hills's (1993) and Plous's (1993) interpretations of their research results may be correct, as both are in evidence in this research, however, the interpretations need to account for the context and content of dissonance, as well as their meaning to research participants, in order to be properly understood.

7.5 Key differences between meat-eaters and vegetarians

The former conclusions raise the question about how vegetarians may have turned their backs on eating meat. Two key attitudes have been identified in this research—positively evaluating farm animals for intrinsic reasons and attitudes towards animals' slaughter.

McDonald (2000) found that the process of becoming vegetarian starts with awareness of information, which is unsuccessfully subjected to denial strategies, before further research leads to the decision to become vegetarian. Cognitive dissonance was almost certainly involved in trying to initially deny the information. It perhaps also increased people's negative attitudes towards animals' slaughter, and reduced their previously positive attitudes towards meat (as happened in this quantitative study) to such an extent as to transform their behaviour. Once this had happened, cognitive dissonance may have also worked to reinforce that behavioural change and, as a result, make the new vegetarians evaluate farm animals more highly for their perceived intrinsic qualities than they did beforehand. This matches Aronson and Mills's (1959) findings, introduced on p.50, that people tend to enhance their attraction towards those for whom they have suffered. To the extent that rejecting meat in a meat-eating culture can be said to involve 'suffering' (or, at least, 'effort'), there is motivation to enhance attraction towards animals. Hence causal relationships may not be in the direction that they have traditionally been assumed: vegetarianism may cause the perception of high regard for animals, not the other way around. However, this perception in itself may be a rationalisation as there was no evidence from the attitude data in this study that vegetarians' attitudes towards animals overall are significantly higher than meat-eaters'.

(Although the detailed evaluations suggest that the groups may evaluate animals for different reasons, this requires further research). Nevertheless the difficulty that McDonald's (2000) interviewees experienced in making their behavioural change (becoming vegetarian) is predictable by cognitive dissonance theory.

Perhaps the information which so affected McDonald's (2000) vegetarians is rare and simply did not come into contact with meat-eaters. Alternatively or additionally, these participants may also have had sufficient cognitive capacity to allow these concerns time and space to 'take root', while other meat-eaters' thinking ability may have been too full with everyday distractions. These vegetarians' experiences and difficulties suggest that they suffered cognitive dissonance at a personally relevant level, where consonance was not easily restored with a tweak of an insignificant cognition or denial strategies that sweep away concerns to the unknown.

McDonald's (2000) vegetarians' attempts at denial strategies also suggest that thought-suppression effects may have been operating. But more research would be necessary to confirm this, as not denying something is not necessarily the same cause or result as those found in thought-suppression experiments where personal relevance, inconsistency, and behavioural implications may demand qualitatively different processes.

The IAT results in this study demonstrated that vegetarians were more negative than meat-eaters towards meat. Hence these attitudes towards meat are, or have become, held at an automatic level, not just explicit rationalisations to justify vegetarianism. However, given that intrinsic evaluations of animals and attitudes towards their slaughter are key, these attitudes are likely to have reduced the evaluations of meat. Unfortunately, the IAT does not explain why this was the case. It cannot identify whether vegetarians were born with an aversion to eating meat, or whether their behavioural beliefs about eating meat include farm animals' slaughter, rather than their own taste-buds. However, the explicit attitudes demonstrated that vegetarians' reasons for avoiding meat were unrelated to their attitudes towards farm animals and eating meat, but centred around their attitudes towards animals' slaughter. This suggests that vegetarians are not just quantitatively different to meat-eaters in respect of their attitudes towards meat, but that the content of their beliefs about eating meat are qualitatively different.

McDonald's (2000) and Knight et. al.'s (2003) research, suggesting that vegetarians are vegetarian because they like animals, is clarified by this study. Vegetarians

do not evaluate animals more positively than meat-eaters overall, but they may evaluate them for different reasons. The factor analysis components for animal evaluations show that attitude contents are qualitatively similar, but vegetarians evaluated farm animals significantly more positively for intrinsic reasons (although further research into meat-eaters' evaluations is required). Therefore, expressing a "love for animals" is insufficient to distinguish vegetarians from meat-eaters. Rather it is essential to know in what ways animals are evaluated.

This does not clarify whether evaluating animals positively for intrinsic reasons causes vegetarianism, or whether something else (for example an aversion to animals' slaughter, as has been proposed) causes both enhanced intrinsic evaluations and vegetarianism.

Insufficient data prevents a path analysis of the vegetarian sample, however, vegetarians' ethical reasons for being vegetarian predicted their attitudes towards animals' slaughter, not the other attitudes, suggesting that this is the key attitude in explaining vegetarianism. Figure 14 on p. 123 also confirmed the relevance of positively evaluating farm animals for intrinsic reasons, and attitudes towards animals' slaughter. Attitudes towards animals' slaughter is further influenced by cognitive dissonance.

In the focus groups (unlike the previous research discussed in section 2.1 that showed meat-eaters' top perceived advantages of a vegetarian diet were health-related), participants listed welfare concerns as the top two advantages of vegetarianism, with health third (see Figure 12 on p.95). However, prior to listing these reasons, participants had been discussing their attitudes towards animals and eating meat, so it is possible that these ideas had been primed. Further reseach would be required to ascertain whether the perceived importance of these reasons can suggest a change in attitudes over time, or whether they represent a methodological function.

In light of this research it seems that meat-eaters rarely think about eating meat because there is little need for them to do so. Their behaviour and attitudes towards meat match, while their automatically-accessed behavioural beliefs rarely include farm animals or their slaughter. Meat-eaters ostensibly evaluated animals more positively for the products that could be made from their bodies. Yet this reason for positively evaluating animals did not correlate with meat-eaters' overall attitudes towards animals. This questions whether meat-eaters evaluated farm animals for the reasons that they think they do. The emerging picture is one where meat-eaters' rationalisations about their

attitudes are not the same as their overall attitudes, whether implicit or explicit (the latter perhaps still being intuitively drawn, rather than calculated from the rationalisations that follow—as Haidt, 2001, would argue). This picture is endorsed by the focus groups which produced one pattern that fitted the quantitative results, suggesting that meat-eaters' behavioural beliefs about meat do not normally include farm animals or their slaughter, but that, when they do, meat-eaters use denial and rationalisations to restore consonance.

Meat-eaters believe that they eat meat because they like its taste. However, the regression analysis predictor of overall attitudes towards eating meat turned out to be 'habit' alone. Habit is more behavioural in nature, where sheer repetition over years propels the behaviour's reproduction. Recall that Cohen (2000) maintained that behaviours were particularly difficult to change because this implies that past behaviours were sub-optimal, which is hard to accept.

Meat-eaters who experienced particularly negative attitudes towards animals' slaughter also experienced greater cognitive dissonance. If the dissonance is allowed to further reduce attitudes towards animals' slaughter, these meat-eaters may reduce their attitudes towards eating meat, if the behavioural beliefs come to include animals' perceived intrinsic qualities and/or animals' slaughter.

Meat-eaters' and vegetarians' responses to cognitive dissonance were qualitatively the same: both groups maintained stable attitudes towards farm animals themselves and reduced their evaluations of eating meat and slaughtering animals. This was not predicted and demonstrates that the groups have more in common than was expected.

By understanding how a meat-eater may become a vegetarian, it is possible to understand how a meat-eater remains a meat-eater. An absence of change may tolerate greater variation than the specific pressures demanded to produce a vegetarian, because, as this research has demonstrated, all that is required to maintain meat-eating in a meat-eating culture is for behavioural beliefs to remain unfettered.

Thus meat-eaters may range from possessing reasonably high evaluations of animals for intrinsic reasons, to very low; or from negative attitudes towards animals' slaughter, to very positive. The evidence suggests that attitudes towards animals' slaughter are sufficiently negative for most meat-eaters to routinely employ denial strategies.

CHAPTER 8

Summary and future developments

8.1 Summary of research findings

This research asked whether people experience psychological inconsistency in the relationship between their attitudes towards eating meat, farmed animals and animals' slaughter. While the focus groups provided initial evidence that many meat-eaters maximised consistency overall by evaluating the taste of meat above their concerns for farm animals, the groups also found their attitudes were inconsistent in many ways. This was explicitly said by many participants, and demonstrably experienced within the groups as participants talked about their difficulty answering questions, their perceived denial and how they "push away" uncomfortable thoughts. Participants independently and universally offered dissociation variables to highlight their difficulty of associating animals with meat.

The quantitative methods also found consistency between participants' positive attitudes towards eating meat and meat-eating behaviour. The focus groups had demonstrated that animals did not ordinarily comprise meat-eaters' behavioural beliefs about meat, so it was unsurprising to find this consistent relationship. What was surprising however was the relative order of preferences in attitudes towards animals and meat. While the explicit attitude measures identified more positive attitudes towards farm animals than eating meat, they were not directly compared by this measure. The IAT measured implicit attitudes and confirmed the relative order of attitude preferences, directly comparing attitude preferences to each other. Thus, the IAT demonstrated that images of farm animals were relatively preferred to images of meat. Consequently, although there was consistency between explicit and implicit attitudes (which was not expected in respect of vegetarians), meat-eaters' relatively more positive attitudes towards farm animals than meat were inconsistent with their meat-eating behaviour when forcing animals into the frame of behavioural beliefs, as in this research. The dissonance that ensued would have been predictable by this relationship under these conditions and provides further evidence in itself of psychological inconsistency.

Because the relative order of attitude preferences (farm animals being more positive than eating meat) was unpredicted for meat-eaters, this meant that the lack of consonance restoration was also not predicted prior to the research. This can now be understood as inevitable given the relative order of attitudes and relationship to behaviour, resistance to change of the attitude towards farm animals, and investment in

meat-eating behaviour. Consonance restoration cannot be expected under these conditions; understanding this contributes to the existing wealth of knowledge about how dissonance works in different contexts and with different attitude contents, especially those in the world beyond the laboratory.

People's detailed evaluations of farm animals also proved more complex than first envisaged. While vegetarians evaluated animals positively for perceived intrinsic qualities, these qualities were graded negatively by meat-eaters overall. The correlations demonstrate that evaluating animals for the products that can be made from their bodies is unlikely to result in positive attitudes towards animals, but meat-eaters' attitudes towards farm animals did correlate with their detailed evaluations of animals for their biodiversity, monetary value, appearance, rarity, affection, sentience, abilities, intelligence and souls.

Meat-eaters' correlations of the detailed evaluations of animals with the three overall attitudes (towards meat-eating, animals and animals' slaughter) highlighted the four intrinsic evaluations which correlated positively with farm animals and negatively with animals' slaughter and eating meat. When factor analysed into one component, meat-eaters' intrinsic evaluations negatively predicted their attitudes towards eating meat and animals' slaughter. The preference order of attitudes, and the evidence that people build evaluations backwards from their behaviour, led to the conclusion that the explicitly negative detailed evaluations of animals, and positive evaluation of using animals for their bodies, were justifications for eating meat.

The contents of meat-eaters' and vegetarians' attitudes towards farm animals were similarly structured to each other—the factor analyses identifying similar components—but vegetarians explicitly evaluated animals much more positively for their perceived intrinsic qualities. In this sense, meat-eaters and vegetarians were quantitatively, not qualitatively, different. However, it might suggest, if the detailed evaluations were accepted at face value (which the cumulative evidence warns against), that meat-eaters' and vegetarians' overall attitudes towards animals were qualitatively different. Hence, 'liking' or 'loving' animals are inadequate differentiations between meat-eaters and vegetarians. Meat-eaters' and vegetarians' overall attitudes towards farm animals were remarkably similar and stable, however. Unsurprisingly, vegetarians' explicit attitudes towards eating meat and animals' slaughter were much more negative than

meat-eaters', and while vegetarians saw animals' slaughter in the use of animals for their bodies, meat-eaters did not.

Indeed, attitudes towards animals' slaughter also predicted meat-eaters' tendency to experience dissonance. So while vegetarians' behavioural beliefs about animals' slaughter in their attitudes towards meat sets them apart qualitatively from meat-eaters, attitudes towards animals' slaughter were paramount for meat-eaters too.

The main debates in this study have centered around whether people's genuinely held attitudes cause cognitive dissonance when brought into context with each other, and what effect that dissonance has. To begin with, it was hypothetical that such long-standing and ingrained attitudes that were so culturally dominant could cause dissonance for individuals. This research confirmed that hypothesis and thereby validated cognitive dissonance's place in this study. However, the relative order of meat-eaters' attitude preferences (farm animals being more positively evaluated than eating meat) and stability of attitudes towards farm animals and less positive attitudes towards eating meat following dissonance was not only surprising but likely to explain why consonance was not significantly restored as in other studies.

The research found that inconsistency is not normally experienced because meat-eaters do not see animals in meat in the same way that vegetarians do. When the two attitudes are brought into context with one another, meat-eaters could potentially experience great inconsistency because, although their positive attitudes towards eating meat are in tune with their behaviour, their attitudes towards farm animals are even more positive. It therefore depends upon which attitudes are salient in the context of each other to determine whether consistency is maximised overall. Cognitive dissonance may usually employ denial to restore consonance between these attitudes but when this is disallowed (as in the quantitative research), consonance eludes participants and attitudes move further away from each other in the directions of increased inconsistency with behaviour.

Cohen (2000) had not formulated his theory of denial specifically as a consonance restoration tool. Yet this research allowed focus group participants to express their sometimes deliberate use of denial when faced with discomfort over the relationship between their attitudes towards farm animals and eating meat. However, when it came to explaining the quantitative research results, denial is the only pattern evident from the focus groups that fits the data. It alone can explain the higher

evaluations of farm animals than eating meat and may also explain the disparity between the detailed reasons for positively evaluating farm animals and the explicit and implicit attitudes. Thus Cohen's (2000) theory of denial can be assimilated into cognitive dissonance theory as proposed in Chapter 3.

The cultural commentators who helped frame the issue in Chapter 1 have been followed through the interpretation of data, with Fearnley-Whittingstall's (2004), Johnson's (2004) and Scruton's (2000) views featuring strongly.

In recent years, Fearnley-Whittingstall (2004) has been one of the most outspoken celebrity chefs about farming welfare standards while maintaining a strong commitment to eating meat. It is therefore possible that the majority cost-benefit approaches (suggested in Chapter 7), that were tentatively identified from the focus group data, were influenced by this viewpoint. Hence, the question is: were these participants' own views, or have participants been influenced by Fearnley-Whittingstall's (2004) arguments? Further research would be necessary to answer this question. However, the significant popular support for Fearnley-Whittingstall's (2004) public campaigns suggests that, whoever influences or represents whom, Fearnley-Whittingstall's (2004) arguments have struck a chord with the British public.

To a lesser extent, Scruton's (2000) views have also been publicised. The single focus group participant who explicated this position did not refer to Scruton (2000), but it was clear from her style of presentation that these arguments were not spontaneous and that she had considered them previously. Thus, while these views may have been entirely her own, it is perhaps more likely that she had been influenced. She may nevertheless have genuinely believed these views.

Much less likely to be the product of public influence was Johnson's (2004) experience, mirrored by two focus group participants' discussions. This is because this position involved so much discomfort, physical tears in Johnson's (2004) case and expressions of unhappiness by the two research participants, as well as the acknowledgement by all three people (including Johnson, 2004) of their perceived inconsistency. This is not an aspirational condition: evidenced by the focus group participants who seemed to envy those arguing for alternative viewpoints, and Johnson (2004) himself who explicitly agrees with Fearnley-Whittingstall's (2004) arguments.

The discomfort and apparently intellectually-confounding nature of the knowingly-in-denial position, makes it unattractive. This may explain why it was a

minority position in the focus groups, where participants had greater control over their self-presentation, but appeared to be the majority position in the quantitative research where participants' control over the data was more relinquished.

The interpretation here is that the cost-benefit and knowlingly-in-denial approaches, espoused by Fearnley-Whittingstall (2004) and demonstrated by Johnson (2004) respectively, represent the wider population in different ways. Fearnley-Whittingstall (2004) represents explicit attitudes to which people genuinely ascribe, while Johnson (2004) represents more implicit attitudes that people may wish to deny but may nevertheless influence behaviour and judgements.

Johnson's (2004) experience has been treated here as a demonstration of Cohen's (2000) theory of denial, while Cohen's (2000) own position as a cultural commentator was not separately mirrored in this data. The two knowingly-in-denial focus group participants did match his argument that they should reduce meat consumption, but, unlike Cohen (2000), they experienced their own denial as an uncomfortable effect. Cohen (2000), it seems, is correct in his self-analysis that his own denial, unlike these focus group participants', is successful in protecting him from such discomfort. Adams's (2000) views were not explored through the focus group data because her comparison between vegetarians and meat-eaters was not possible in an entirely meat-eating sample. However, there was quantitative evidence that vegetarians, unlike meat-eaters, do see animals' slaughter in meat. But the relative order of overall attitude measurements, and the effect of dissonance on those attitudes, was remarkably similar between vegetarians and meat-eaters, suggesting that they are not as alien to each other as Adams (2000) believes.

Ultimately, Chapter 1 concluded from the cultural commentators' positions that consistency in real life was not an 'all-or-nothing affair'. Perhaps more than any other, this observation has been upheld by this study. What is deemed psychologically consistent in one context can suddenly seem inconsistent with the shift of an instant, leaving participants with a range of possible responses depending on their level of interpretation of the meaning of their behaviour and the environmental options open to them.

8.2 Research restrictions

Naturally the disparity between meat-eaters' detailed evaluations of farm animals and their attitudes is disappointing. However, the vegetarian evaluations, which were consistent with their attitudes and behaviour, do highlight how the different groups approached the evaluations and the meat-eaters' evaluations do endorse the previous research, outlined in Chapter 2, that found rationalisations/backward justifications to be prevalent. So the results are still valuable in having confirmed previous research, but they have not enabled a full understanding of how meat-eaters evaluated farmed animals. In fact, ironically, in this sense the focus groups provide a better indication of how animals are evaluated through participants' difficulty with the issues.

Future research, however, should perhaps use an implicit measure to ascertain participants' automatic evaluations. In this case it would now be predicted, following the results in this study, that meat-eaters would evaluate animals positively for intrinsic reasons, and would not evaluate them positively for products that could be made from their bodies. Thus the expected results may be more similar to (if not as strong as) vegetarians' evaluations.

The tentatively proposed patterns of meat-eaters, based on the cultural commentators' arguments, that were outlined in the previous Chapter, need to be more rigorously tested before they can be accepted. One focus group participant sharing a spontaneous change in attitude and reported increase in dissonance, similar to that measured by the quantitative data, is sufficiently tantalising to draw comparisons, but insufficient to rely on further. More research is needed into these patterns and how they are manifested in different conditions.

Vegetarians struggled, and some failed, to follow the dissonance experiment instructions, saying that they just felt too strongly about the topic to record their views about the relationship between their own attitudes and instead recording their attitudes towards the target objects. This could have been an example of self-affirmation (Steele, 1988) and/or of thought-suppression (Wegner, et. al., 1987) where, being asked specifically not to think about something had the opposite effect. Other methods should be employed in the future to test these theories.

Other restrictions also highlight how alternative methods could be used in future research to corroborate the results of this study. For example, the IAT measured people's responses to pictures. It could be argued that the whole attitude target may not

be stimulated by pictures. Nevertheless, the IAT has previously been found to be an exceptionally reliable measure (see Chapter 3), and, in comparison with other written methods, the IAT's image stimuli may better represent the attitude targets. So, while the measurements remain limited, they may still be superior to many traditional attitude measurements. Further, together with the explicit methods, which used written stimuli, three measures independently confirmed the order of results.

Unfortunately the IAT results only demonstrate participants' views relative to each other. There is nothing in the IAT results alone to say that participants disliked images of animals being slaughtered. All that can be said is that participants preferred images of farm animals to images of meat, and images of meat to images of animals being slaughtered. However, because the implicit and explicit attitude results appeared in the same relative order to each other, it can be inferred that the IAT results also demonstrate that meat-eaters' attitudes towards farm animals and meat were positive, and attitudes towards animals' slaughter were negative.

Nosek et. al. (2007) review (and respond to) criticisms of the IAT. Traditional attitude research uses introspection to measure evaluations and Nosek et. al. (2007) claim that the absence of introspection in implicit measures has led to scepticism and a loss in value of the attitude concept to traditional attitude theorists. The lable of 'implicit' has also loosely collected heterogenous concepts that avoid requiring introspection together, perhaps losing the subtlety of variation between individual concepts such as 'cognition', 'attitudes', and so on. Nosek et. al. (2007) further accept that the IAT can only be validly used as a comparative measure (as in this study), and not to assess single category evaluations, which is another disadvantage in comparison to traditional attitude measures (like Likert scales, for example, Trochim, 2006). Nosek et. al. (2007) also report a variety of difficulties with the validity of stimulus selection, which is why this study employed extensive pretesting. Participants' cognitive fluency, age and familiarity with computers or speeded responding can adversely affect IAT response times, as can repetition. Nosek et. al. (2007) report that when combining the IAT with self-report measures, one may affect the other (this potential effect was used in this study to measure dissonance and attitude change, but may not be desirable in other research). Nosek et. al. (2007) note that the role of faking in IAT performance requires further research (although they also note that research thus far suggests that the IAT is less deliberately controllable than other explicit and implicit methods). The precise relationship beween explicit and

implicit attitude data also remains to be clarified. The IAT and explicit measures differ in their behavioural predictive power depending on the attitude content (it seems that the IAT may better predict socially undesirable behaviour, while explicit measures may better predict socially neutral or desirable behaviour). Nosek et. al. (2007) accept that the origins and development of social category knowledge and preference formation are not well understood but are clear that the IAT must not be misunderstood, or misused, as a 'lie detector'. Their review of IAT work finds that researchers using the IAT do not make this error, but that critics of the method do (e.g. Arkes and Tetlock, 2004). As discussed here, the best view of implicit and explicit data is that they are both real and true, but may measure different phenomena. Nosek et. al. (2007) are hopeful that a cognitive model of performance at the task that generates the IAT measure may soon be established, but regret that it is currently missing from an understanding of the IAT.

Of course dissonance and attitude changes may not have occurred (to this extent or in this direction) had the research used different stimuli or different variables. Omitting animals' slaughter, for example, and researching any perceived inconsistency between attitudes towards farmed animals and attitudes towards meat-eating, may have produced different results (and indeed this would be a useful line of further enquiry). But that is always the case: data are always a function of the research stimuli. What this research tells us is that when drawing together stimuli of animals and their slaughter with meat, dissonance ensues.

8.3 Research implications and opportunities for future developments

Section 3.5 identified some of the debates explored by the theoretical chapters and how this study could contribute to them. These debates are now finally reviewed.

Overall, the theories from Chapters 2 and 3 can be brought together in a complementary way. Evolutionary explanations form the core, surrounded by, influencing and influenced by, environmental and social realities and constructions. These are permeated by the cultural and communicative importance of a way of life that stretches through history and across space to bind a nation. Of course, resulting from this evolutionary and social background, but also contributing to, directing and limiting this background, are people's cognitive abilities.

The thesis started by asking whether people experience psychological inconsistency in the relationship between their attitudes towards eating meat, animals and their slaughter and, if so, how they handled this inconsistency. The cultural commentators demonstrated the diversity and disagreement on the subject, leading to question whether these views represented patterned phenomena that resonated with ordinary people. These questions were the main focus of the previous Chapter and have been summarised already in this Chapter. However, in short, meat-eaters are consistent in having positive attitudes towards eating meat and their meat-eating behaviour, but may be inconsistent when other attitudes, particularly those relating to animals' slaughter, are brought into context with meat-eating. When this happens, cognitive dissonance usually employs denial strategies, sometimes automatically and sometimes even consciously and deliberately, to restore consonance. In the quantitative study, denial was prevented from restoring consonance and consequently attitude change was recorded, but not in the expected direction. The possible reasons for this, and the implications for cognitive dissonance theory have been discussed. Most importantly it has been argued that cognitive dissonance theory must be flexible to cope with variable outcomes depending on how the content and context of dissonance affects the interpretation of the meaning of behaviour. The research has demonstrated that a flexible model of cognitive dissonance theory which accommodates variability can enhance our understanding of the problem.

This research has highlighted the need for further research into the content- and context-dependent nature of consonance restoration for real-world phenomena. Such future research will face methodological problems of its own about how much laboratory control can be exerted on genuinely-held attitudes before ecological validity is overwhelmingly compromised. This trade-off is not new (e.g. see Brewer, 2000), but may be particularly relevant when dealing with consonance restoration strategies in ordinary life (e.g. denial) that have traditionally been blocked by laboratory work. Nevertheless, the content- and context-specific nature of dissonance motivation now demands a closer look at these real-world problems.

The stability of attitudes towards farm animals, despite pressure from cognitive dissonance, suggests that these attitudes are psychologically deeply embedded and highly resistant to environmental pressure. The other attitudes were less resistant to change. While it could be argued that social conditioning could achieve similar effects, it does

seem to support theories emphasising evolved predispositions towards positive attitudes towards animals. A universal dislike of animals' slaughter suggests that these attitudes are also evolved. Attitudes towards meat-eating were less clearly defined. Although intuitively it would make sense if a liking for meat was an evolved disposition, the attitude was vulnerable to laboratory stimulation in a direction contrary to behaviour. Regression analysis also highlighted 'habit' as predictive of attitudes towards eating meat. This, combined with the fact that vegetarians' automatic IAT results (as well as explicit attitude results) were more negative towards eating meat, suggests that attitudes towards eating meat are relatively socially-malleable in comparison to the other attitudes.

Although the main focus was on meat-eaters, the research has also clarified existing theories about vegetarians. Vegetarianism is not about loving animals; it is about hating animals' slaughter. This research has redressed the failure of much previous work to compare research groups to control groups. In doing so it has questioned the conclusions drawn previously about the differences between vegetarians and meat-eaters. It has been less successful in defining how meat-eaters evaluate animals, however. This difficulty has further enlightened cognitive dissonance, but not satisfactorily resolved the questions surrounding the evaluations.

Focus group participants supported previous work suggesting that knowledge about the 'denial object' (animals' lives and particularly deaths) is indeed factually inadequate, by their own admission, somewhat hazy, and deliberately avoided. Hence Cohen's (2000) theory about denial being a state of 'knowing and not knowing' is upheld, but at least some of the 'not-knowing' can be considered a genuine, but active, absence of knowledge, whereby sufficient information is known to stimulate avoidance of further information and denial of detail.

More research is also necessary into whether the failure of denial strategies is the same as thought-suppression. For example, McDonald's (2000) vegetarian interviewees reported trying to avoid knowledge before feeling compelled to investigate further. It has been proposed here that the failure of denial involves qualitatively different processes to thought-suppression, but this was not specifically tested by this study and the field would benefit from further exploration.

Similarly, focus group participants' perceived top advantages of a vegetarian diet in this study were listed as animal welfare, followed by human health. The order of these reasons are opposite to those found in previous studies. One possible conclusion

may be that attitudes are starting to change and animal welfare is more highly prioritised now than at the time of previous studies. An alternative conclusion may be that the preceding discussion primed welfare concerns for the participants in this study. Further research should clarify these interpretations.

Section 8.2 has already identified that future research should measure detailed evaluations of farmed animals using implicit techniques to prevent the interference of backward justifications/rationalisations and better understand how animals are evaluated. The tentatively proposed patterns of meat-eaters, based on the cultural commentators, should also be more rigorously researched.

Attitude theory, cognitive dissonance theory and theories on social taboos have been evaluated by the research. Despite all the criticisms of attitude theory, here three measures—explicit and implicit—converged to validate the order of people's preferences. The research also powerfully demonstrated the effects of dissonance through attitude change in directions that could not have been predicted beforehand, but which make sense in relation to each other. Cognitive dissonance theory still has plenty to contribute, with this research showing that when a pattern of attitude preferences does not maximise consistency overall, dissonance effects are unusual.

Could the direction of change in attitudes in the quantitative research have been anticipated, this research would have benefited from contacting participants later to enquire whether any attitude changes survived outside the laboratory, or even led to behavioural changes in diet. This would now be a worthwhile future study.

Modifying independent variables to identify their effects on dissonance and attitude change would also be valuable. Focus group participants here felt strongly against intensive 'factory' farming methods and it would be interesting to identify whether this production method—responsible for the majority of meat consumed in Britain—affected quantitative results as much as, or more than, the slaughter variable.

Calogero et. al.'s (in press) connection between individual differences in people's need for cognitive closure and their underlying values, which affect their approaches to the world, (introduced on p.46) also opens up a wide area requiring further research. This could identify whether such idiographic factors can explain some differences between meat-eaters and vegetarians, or account for people's consonance restoration methods. Investigating people's cognitive styles, and their relationships to

underlying values, may then make it possible to extrapolate research findings to other topics.

Greene and Haidt (2002) ask: "How do moral judgments of real events differ from those of the hypothetical stories that have been used for convenience in neuroimaging studies?" (Greene and Haidt, 2002, p.522). This topic could help answer their question as the complex levels of judgement between the quantitative and qualitative methods employed here demonstrate the difficulty participants experienced in some judgements. The potential advantages of using neuroimaging techniques to identify which brain areas work on processing information about the relationship between relevant attitudes were introduced in the last Chapter. There may be considerable empirical and theoretical contributions from connecting moral dilemma research to Stone and Cooper's (2000) theory of dissonance motivation variability, made possible by the different patterns of meat-eaters found in this research that draw the theoretical fields together. This could also confirm the theory that a balance-sheet approach to eating meat, such as Fearnley-Whittingstall's (2004), which was so prevalent in the focus groups, may be a defensive strategy—missing from the quantitative data—to protect meat-eaters from the threat to their self-beliefs. Indeed, Chapter 7 identified that the precise content of this threat (i.e. which self-beliefs) also remains to be explicated by further research.

This picks up on the debate left in section 3.5 about where to ascribe behavioural causation: at the level of explicit decision-making or implicit judgements? While this study has not aimed to specifically resolve such debates, and the proposals for future neuroimaging research may be better equipped for such a task, the theories which best fit the empirical data gleaned here do, nevertheless, suggest a starting point from which to proceed with future research. This starting point is that meat-eating behaviour is 'intuitive' rather than 'reasoned'.

For example, first there was much evidence from the focus groups and quantitative results that attitudes and arguments were constructed to justify and rationalise existing behaviour. Some perceived inconsistent intuitions about farm animals' intrinsic qualities were difficult to express and explain in comparison to meat-eating behaviour. This supports the implicit/intuitive attitude approach where decisions are made non-consciously. However, second was the variation in cognitive dissonance responses found in patterns of arguments in the focus groups and

unexpected results in the quantitative data. This supports Stone and Cooper's (2000) flexible approach to cognitive dissonance based on the interpretation of the meaning of behaviour. It is not clear if this 'interpretation' can be considered a conscious function or is, as is perhaps more likely, also an intuitive judgement, but it does suggest an interactive process between the 'top-down' implicit attitudes and the 'bottom-up' world providing stimulation for interpretation.

The view which most fits the data, especially based on the apparent difficulty with which focus group participants struggled in understanding and explaining their own attitudes, is that much behaviour is driven implicitly. However, conscious reasoning may affect judgements when dissonance demands attention, as has been discussed here.

There are complementarities and debates with other theories that also consider the possibility that people hold inconsistent ideas. One of these theories is cognitive polyphasia (e.g. Moscovici, 1963, 1973, 1976; Jovchelovitch, 2002). While attitudes have been pursued here because of their clarity of explication and measurement strengths, cognitive polyphasia embraces the fluidity and plurality of representations through which attitude theory traditionally attempts to steer in search of a single, measurable, attitude.

Cognitive polyphasia conceives of different simultaneous rationalities. According to Jovchelovitch (2002), the context means that knowledge is never a closed concept, but one that is constantly changing. Indeed this is similar to the conclusion derived from this study in Figure 3, where the content and context may affect 'self-presentational forces' to produce explicit attitudes that do not mirror implicit attitudes. Different outcomes from cognitive dissonance have been postulated baed on the level of interpretation of the meaning of behaviour. Further, Eder's (1996) theory, introduced in section 2.5, prioritises the culturally embedded status of knowledge and morality. But where cognitive polyphasia differs is in the rejection of fairly static intrapersonal concepts, like 'self-presentational forces' and 'rationalisations', that more mid-range psychological theories like attitude and cognitive dissonance theories consider distort knowledge. Rather, 'distortion' becomes a void idea when: "... knowing is an activity that can only be understood in relation to a context from which it derives its logic and the rationality it contains ... all knowledge is constituted by a desire to represent" (Jovchelovitch, 2002, p.5). For cognitive polyphasia, there are infinite forms of social knowledge and logic because there are infinite forms of context that are not mutually

exclusive or continuous. Hence, they do not replace each other on a progressive scale of poor-to-better knowledge.

Near the opposite end of the social psychological spectrum from cognitive polyphasia are views of modularity (e.g. Fodor, 1983; Chomsky, 1984; Kurzban and Aktipis, 2007). Both modularity and cognitive polyphasia see potentially many co-existing representations as inevitable and theoretically unproblematic. However, according to the modular view, differing representations stem from the different functions of specialised information-processing mechanisms. Consequently, "a brain can simultaneously represent two mutually contradictory states of affairs" (Kurzban and Aktipis, 2007, p.133). Although a mechanism may present a unified view of the self, this, say Kurzban and Aktipis (2007), is to gain social advantages, not to appease any angst internal to the non-existent 'self', as envisaged by cognitive dissonance theory. Theoretically this could incorporate Stone and Cooper's (2000) idea, explored in Chapter 3, that different levels of interpretation of behaviour lead to qualitatively different dissonance processes. The interpreted level of personal relevance could each involve an independent module rather than one master motive. Kurzban and Aktipis (2007) propose the idea of a module between 'the brain' and the social world that operates like a press secretary, 'spinning' the individual's actions in a positive light. This is an explanation of the frequently observed tendency of research participants to work backwards from behaviour when explaining their attitudes (see Chapters 2 and 3 and the analysis of this study's focus groups).

Kurzban and Aktipis (2007) accept that they cannot answer all of the evidence for cognitive dissonance theory, such as that reviewed in Chapter 3, including the evidence for neurological arousal and some of the subtler measurements of post-dissonance-resolution attitude change. However, it remains an interesting alternative and contextualises the interpretation of evidence here as one option among potential others.

Cognitive polyphasia and theories of modularity do not argue with this study's results, but interpret them from a different position. However, it has been argued here, in tune with the conception of cognitive dissonance theory that emphasises content- and context-dependent dissonance, that consistency in real life is not an 'all-or-nothing affair' (see p.159). Here the theories converge. Despite different underlying explanations between theories of cognitive dissonance, polyphasia and modularity, there is commonality in their views of cognitive and experiential outcome. As the remaining

paragraphs in this Chapter demonstrate, cognitive dissonance theory still has much to contribute, including some worthwhile practical implications.

This research has demonstrated how people handle their perceived inconsistency about an empirically-widespread real-world phenomenon. Meat-eaters' eating behaviour was consistent with their positive attitudes towards eating meat. However, they were inconsistent in evaluating farm animals more positively than meat-eating and in reducing their evaluations of meat-eating and animals' slaughter following dissonance. This did not restore consonance and in fact meant that their attitudes towards eating meat were less well-aligned at the end of the research than at the beginning. Absolute uncertainty, rather than polarisation, may ensue (although relative polarisation did occur) and as a result consonance may not be restored. These results challenged traditional cognitive dissonance theory, demanding that it become flexible to accommodate the data that responded to dissonance by moving in the opposite direction to that hypothesised. Cognitive dissonance theory can accommodate the data if it accepts that socially- and psychologically-complex topics may not follow the prescribed dissonance reduction routes of laboratory-bound research designs. While this research builds on Stone and Cooper's (2000) theory, there is more empirical work needed before the boundaries of cognitive dissonance theory are properly defined. The theory has adapted to pressures to increase its flexibility in response to variation found in the content and context of dissonance stimulation and the interpretation of that stimulation, but the full extent of that flexibility remains to be exhaustively tested.

A specific methodological lesson can be learnt from the factor analysis which reduced the dissonance measures (uncomfortable, uneasy, bothered) to one factor. Researchers may therefore simplify future research to use only one factor: "uncomfortable" may be the best as it most closely follows the definition of dissonance. The dissonance method used here also demonstrates that researchers need not be restricted to the induced compliance paradigm or post-hoc explanations. This study's method combined greater ecological-validity with testability to demonstrate variable cognitive dissonance responses to real-world phenomena.

It is possible that findings from this research may be cautiously extrapolated to other topics, for example attitudes towards euthanasia, environmental issues, healthy living, or other dilemmas where accepted and ordinary lifestyles may be at odds with a complex range of attitudes. However, the results are likely to be fairly content and

context specific as this is the explanation for the unpredicted results here. The potential for generalising from them is therefore limited; but indeed this is the point and interest of researching other ecologically valid topics, featuring people's own genuine attitudes, rather than contrived dilemmas.

Further, the implications of research such as that undertaken in this study are potentially wide-ranging, affecting many disciplines and having applications beyond academia. While social psychologists, sociologists and anthropologists welcome contributions between their fields, Frank (2002) (see page 62 in Chapter 3) highlighted the implications for policy-makers. Policies should be both informed by empirical evidence and sensitive to people's beliefs. Greene (2003) argues that scientific facts have profound moral implications yet moral philosophers have ignored the natural sciences, "... the scientific investigation of human morality can help us to understand human moral nature, and in so doing change our opinion of it" (Greene, 2003, p.847). The status of ethics as a whole must, like psychology, appreciate its own motivation. Rollin (1992) too points out that moral theorists must learn from what humans are psychologically capable of, otherwise "... our arguments degenerate into merely scholastic exercises or intellectual oddities" (1992, p.79). Indeed, Richards (2000) notes that while philosophers have traditionally regarded strong intuitions as guides to truth, psychological explanations of why people have strong intuitions in the first place recommend a review of such 'guides to truth'. This was endorsed by the theories of implicit attitudes (and similar ideas) explored here, and the IAT's demonstration that some focus group patterns appear like rationalisations in comparison to automatic responses.

Frank's (2002) earlier comments that consumers act out of 'ignorance' can be partly supported due to the focus group results, but should also include the normal operation of denial to exclude animals from attitudes about consuming meat. The implications of his arguments remain. He asks whether ignorance is a preferred state for society, to this can be added: do we want a culture where many consumers' behaviour is enabled by automatic (and sometimes deliberately manipulated) denial? With psychological contributions, policy makers can become better informed and make more relevant and appropriate decisions.

The possibility that explicit concern for animals' perceived mistreatment in intensive farming, for example, may actually form a defence to remove an animal's wider

experience, including their slaughter, from the focus of concern should also be explored. The implications of such further study are potentially profound, not just for Fearnley-Whittingstall's (2009) campaigns, but the RSPCA's (Anon, 2009b) 'freedom foods' campaigns which are also heavily promoted and gathering consumer support.

Another example of the relevance of understanding these attitudes and their effects concerns the application to workers suffering PiTS (Rholf and Bennett, 2005). This research has lent weight to worries about the mental health of people who work with animals. The positive attitudes towards animals and denial about their experiences observed in the focus groups among people who did not work with animals, suggests that PiTS could be widespread in some industries among people who do work with animals and that psychological support is crucial.

Finally, Chapter 3 outlined Ryder's (2000) theory that our huge reliance on, and fascination with, other species defines our lifestyles. He assumes that our use of animals will change. The evidence from this research is that, under certain specific conditions—not prevalent in modern Britain—where animals' slaughter is entwined with people's beliefs about meat, Ryder (2000) might be right. However, even after dissonance in these experiments, meat-eaters' attitudes towards eating meat remained positive (reduced, but positive nonetheless). This suggests that a cultural change would be necessary to produce and sustain conditions for dissonance to demand meat-eaters' attention, against all their denial strategies, for long enough whereby attitudes towards animals' slaughter and cognitive dissonance spirally interact to repulse them from meat. Nevertheless, this is happening to some individuals and, of course, if sufficient numbers of people became vegetarian, then their influence could produce a cultural paradigm shift. The evidence from the research in this study is that modern Britain is some way off from such a shift and that these cultural conditions are by no means certain of ever being reached.

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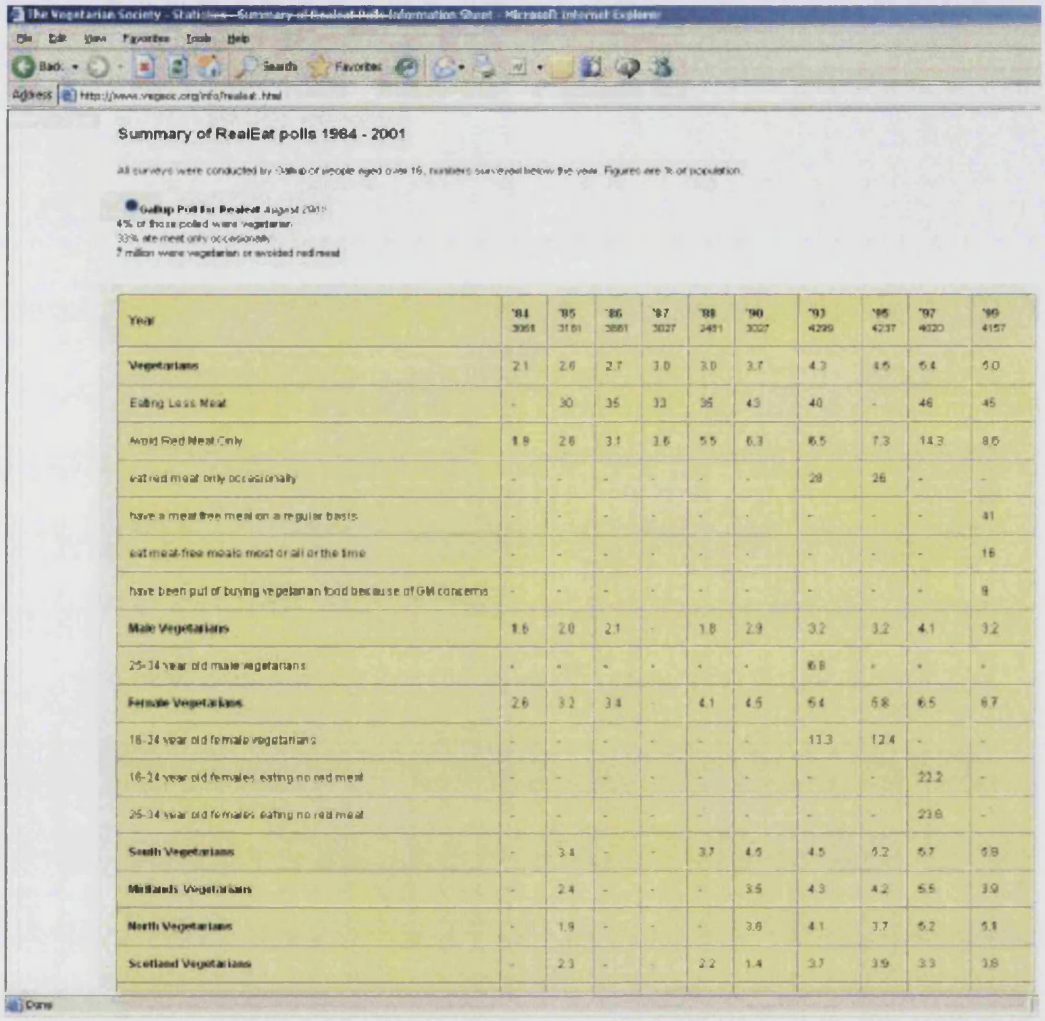
APPENDIX A

Internet resources



The Vegetarian Society - Statistics - Summary of RealEat Polls Information Sheet - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Search Favorites

Address http://www.vegsoc.org/info/realeat.html

Summary of RealEat polls 1984 - 2001

All surveys were conducted by Gallup of people aged over 15, numbers surveyed below the year. Figures are % of population.

Gallup Poll for RealEat August 2001
4% of those polled were vegetarian
33% ate meat only occasionally
7 million were vegetarian or avoided red meat

Year	'84 3061	'85 3161	'86 3661	'87 3027	'88 2481	'90 3027	'93 4299	'95 4237	'97 4020	'99 4157
Vegetarians	2.1	2.6	2.7	3.0	3.0	3.7	4.3	4.5	5.4	5.0
Eating Less Meat	-	30	35	33	35	43	40	-	46	45
Avoid Red Meat Only	1.9	2.6	3.1	3.6	5.5	6.3	6.5	7.3	14.3	8.6
eat red meat only occasionally	-	-	-	-	-	-	28	26	-	-
have a meat free meal on a regular basis	-	-	-	-	-	-	-	-	-	41
eat meat-free meals most or all of the time	-	-	-	-	-	-	-	-	-	16
have been put of buying vegetarian food because of GM concerns	-	-	-	-	-	-	-	-	-	9
Male Vegetarians	1.6	2.0	2.1	-	1.8	2.9	3.2	3.2	4.1	3.2
25-34 year old male vegetarians	-	-	-	-	-	-	6.8	-	-	-
Female Vegetarians	2.6	3.2	3.4	-	4.1	4.5	5.4	5.8	6.5	6.7
16-24 year old female vegetarians	-	-	-	-	-	-	13.3	12.4	-	-
16-24 year old females eating no red meat	-	-	-	-	-	-	-	-	22.2	-
25-34 year old females eating no red meat	-	-	-	-	-	-	-	-	23.6	-
South Vegetarians	-	3.4	-	-	3.7	4.5	4.5	5.2	5.7	5.8
Midlands Vegetarians	-	2.4	-	-	-	3.5	4.3	4.2	5.5	3.9
North Vegetarians	-	1.9	-	-	-	3.6	4.1	3.7	5.2	5.1
Scotland Vegetarians	-	2.3	-	-	2.2	1.4	3.7	3.9	3.3	3.8

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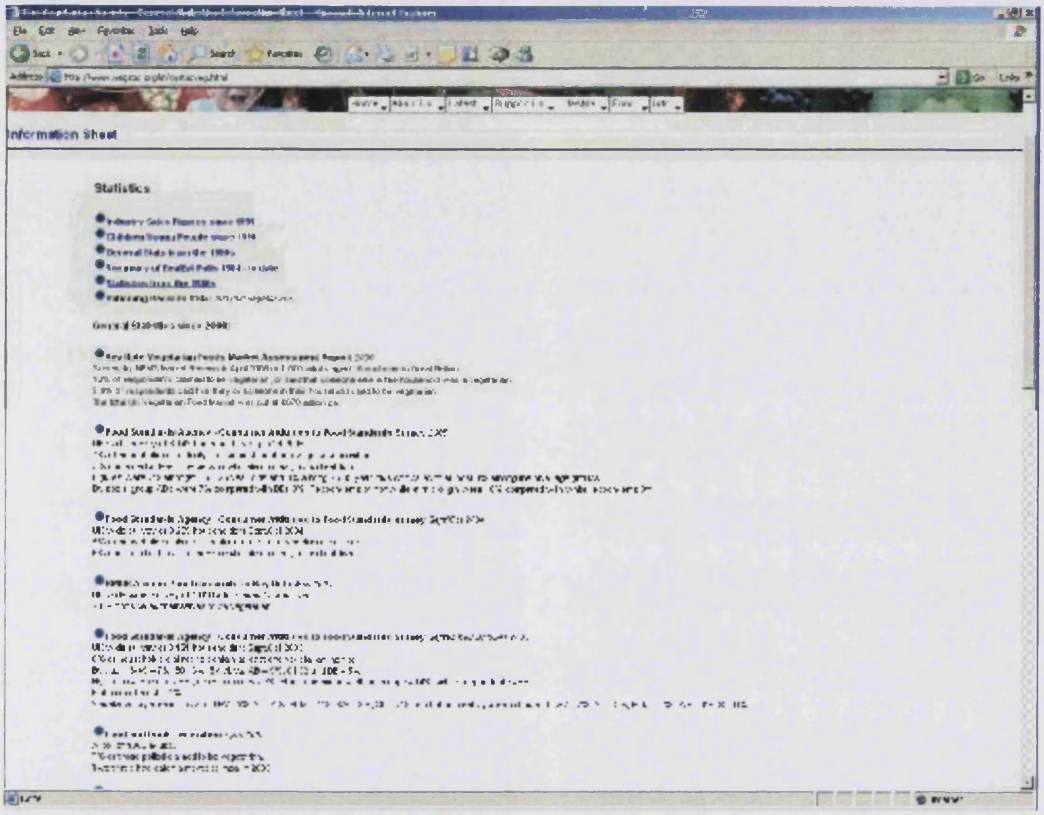
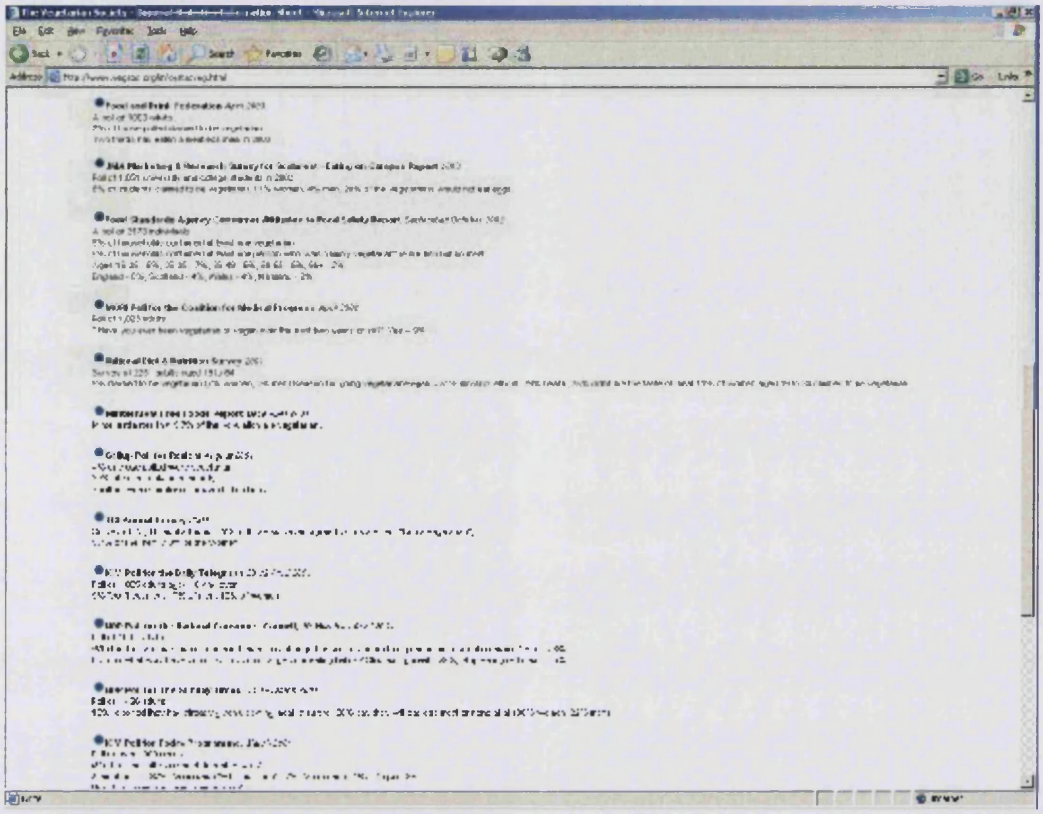
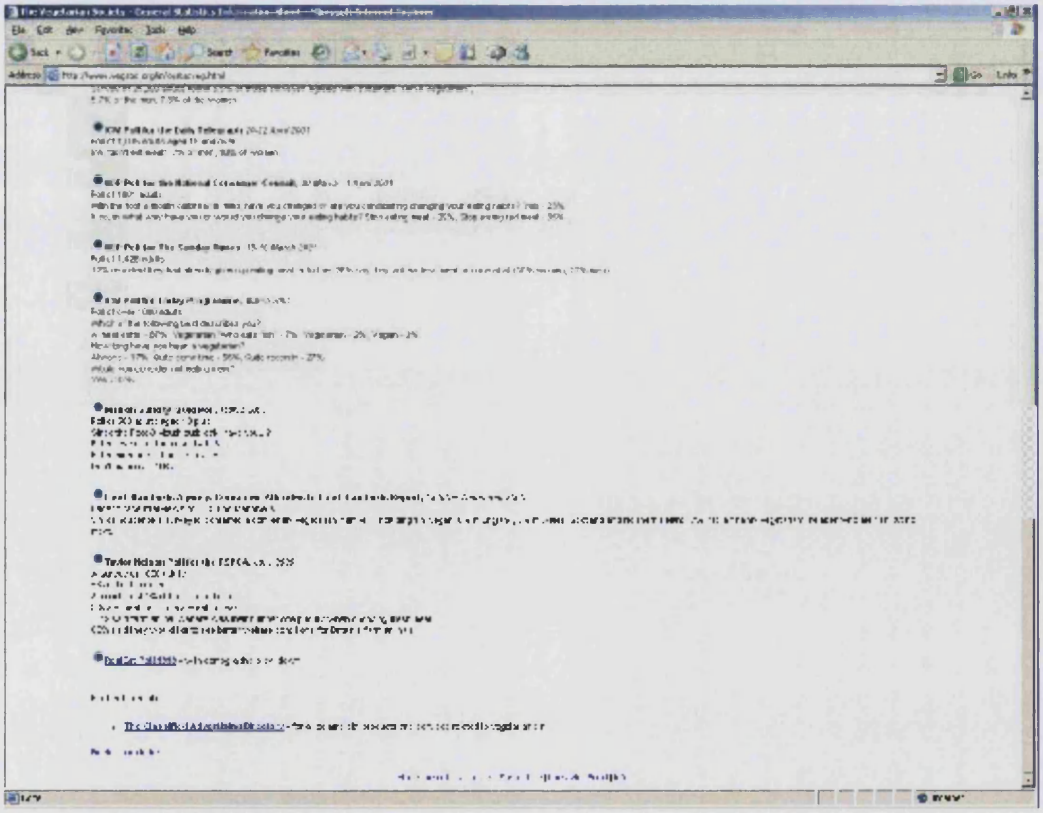

Information Sheet
Statistics





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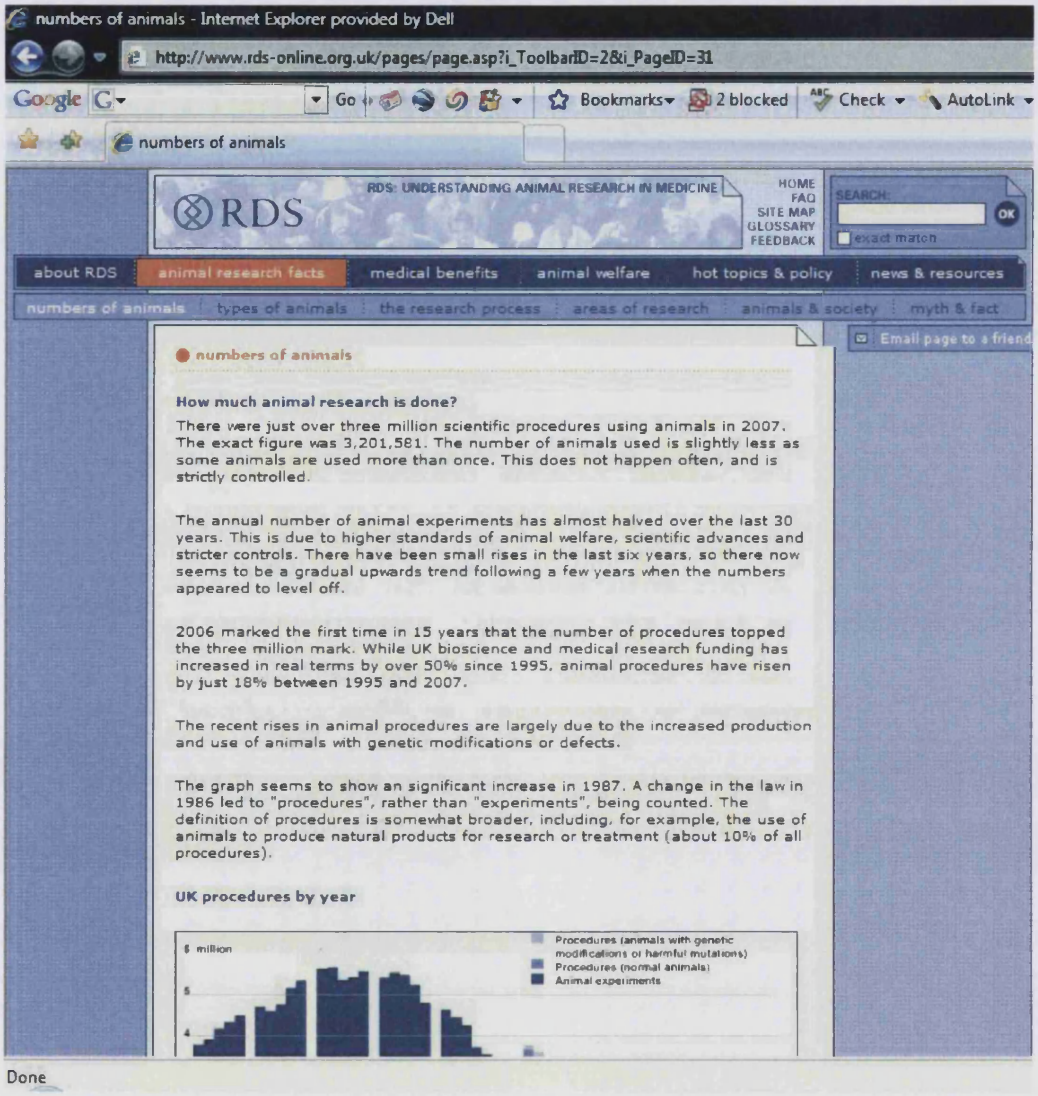
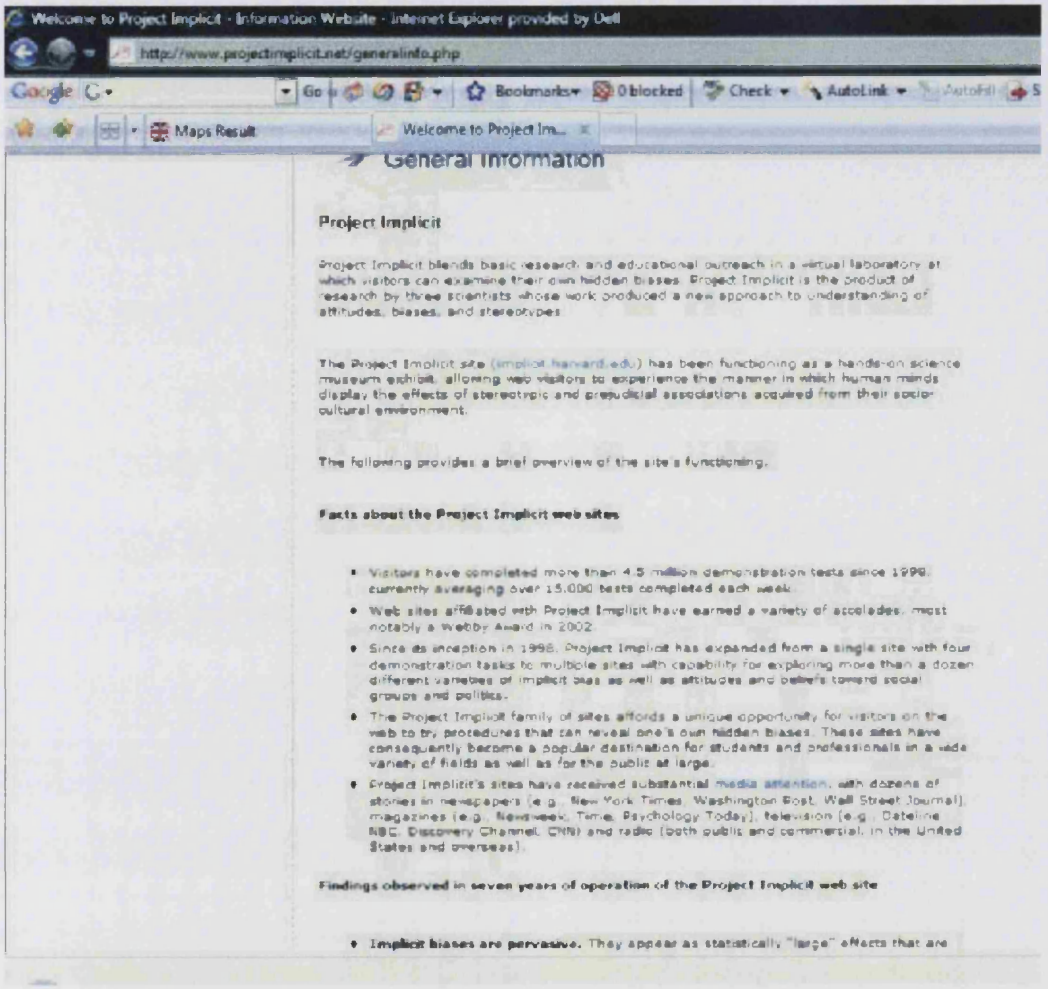


9 February 2009

21 January 2008: IAT information website



APPENDIX B

Focus group schedules

Schedule for design 1

What occupies participants' conscious attention and how does it get there?

The following questions were presented for group discussion which took up the first half of the hour:

> Propose answers to the following questions and discuss them in the group. Guess or imagine the answers if you're unsure.
>
> 1. What sort of things do you think take up most of your thinking time?
>
> 2. In what ways do these things grab and hold your attention?

Participants were told that objectively true answers were not expected to these questions and that they should perhaps consider 'types of things' rather than specific examples that they might feel to be too personal.

How many of the participants eat meat and value animals

Participants answered a series of questions, presented as a questionnaire, embedded within which were the two target statements "I eat meat" and "I like animals". The following questions were then presented for group discussion:

> What did you take these statements to mean?
>
> "I eat meat" (or "I don't eat meat")
>
> "I like animals" (or "I don't like animals")
>
> Followed by:
>
> When someone is described as an "animal-lover", what do you think this means?

What reasons for and against eating meat and positively evaluating animals do the participants have and how good do they think these reasons are?

This task elucidates participants' own reasons for and against eating meat and positively evaluating animals. Ostensibly this task should identify *why* people eat meat and positively evaluate animals, but interpretations must be cautious as participants may be unable to access all of their reasons and evaluate them in this way. Nevertheless, people's reasons show some of the tools available to their conscious resources for combating cognitive dissonance.

The group was split into two and each group's discussion was separately tape-recorded. One group created reasons *in favour of* meat-eating and the other group created reasons *against* meat-eating.

> Using the post-it notes provided, write one reason per post-it in favour of, or against, meat-eating (depending on which group you are in).
>
> When you have finished, arrange the post-its in order of how good each reason is. Place the most important or persuasive reasons at the top and the poorer reasons toward the bottom.

The groups repeated the task in respect of liking animals. The post-it notes were numbered to retain the priority participants gave each argument.

> Using the post-it notes provided, write one reason per post-it in favour of, or against, liking animals (depending on which group you are in).
>
> When you have finished, arrange the post-its in order of how good each reason is. Place the most important or persuasive reasons at the top and the poorer reasons toward the bottom.

Schedule for design 2

Participants' basic moral ideas were contrasted with those regarding other animals.

What are participants' basic moral ideas?

All of the questions were entirely fictitious except the last one. The life of the yellow alien is based on a factory farmed pig's life (factory farming accounts for 95% of pig-meat in the UK, Anon, 2003c). (Thanks to Alistair Currie of VIVA! for reviewing and commenting on the accuracy of this scenario.)

Figure 15: Rationale behind posed questions

Rationale	Posed questions
What makes something good or bad? These questions evaluate Ryder's statement that people really positively evaluate happiness and that all other 'goods' are only good to the extent that they enable happiness. In other words, happiness alone has intrinsic quality. ***If*** this is so, then whether participants veer towards hedonism or utilitarianism indicates how their views towards other species could shape up. Thus, participants were prompted to state *in what way something is good* until they reach the point at which they can go no further: "it just ***is***".	Your good fairy offers you one wish for anything you want. What would you wish for? Each of you should state your wish, then the group must choose only one wish out of those options and state why it's the best wish possible. Followed by: Your good fairy's powers have been changed, she can only grant you one wish: to prevent the worst thing that you can imagine. What would you wish to prevent? Each of you should state your wish, then the group must choose only one wish out of those options and state why it's the best wish possible.
What criteria are considered in deciding how others should be treated? Underlying principles about how *others'* interests are evaluated can be contrasted with how *other species'* interests are evaluated.	When you think about *how disadvantaged people should be treated* (e.g. 'the poor', children, or people with severe and irreparable brain injuries) *what are the important criteria to consider?*
What constitutes suffering? If suffering can be defined in any abstract physical and/or psychological form it can be contrasted both with the earlier questions of how participants measure 'goods' and 'bads' and how participants evaluate farmed animals' experiences.	Jack is reported to be suffering. What might he be experiencing and why?
How do you weigh opposing interests against each other? People implicitly answer this question by evaluating their preference for meat over another animals' 'preference' for life and happiness or vice versa. This question ascertains how participants interact with issues of fairness. For example, they could pick either Jack or Jill's preference on purely prejudiced or arbitrary grounds. Alternatively they could consider issues such as who is likely to be most affected by the colour—for example, if Jack spends more time in the house than Jill, then his interests in the colour scheme could be greater than hers.	Jack and Jill share a house. Imagine you have to paint their house. You have only red and blue paint and cannot mix or change the colours. Jill loves blue and hates red. Jack loves red and hates blue. What things would you consider in deciding what colour to use if the couple refuse to compromise?

Is the life of a 'factory farmed' pig worth living?

A hard copy of the following scenario was given to each participant and is replicated below.

The scenario distorts some descriptions about factory farmed pigs' lives so that people answered the question based on the facts rather than possibly distorting their answers to appear consistent. It tried to evaluate whether people agreed with Singer's (1993) position that farmed animals' lives are so miserable that they are not worth living, or Appleby's (1999) position that farmed animals have a net positive experience simply by being alive.

As with the other questions in this task, how the answers to this question compared to specific questions about other animals (and where and why any differences occur) is crucial to understanding meat-eaters.

Posed scenario

In the year 2050 astronauts land on a previously-unknown life-supporting planet. After an Earth month on the planet, the Captain's log sends the following entry back to Earth.

"This planet is far from barren. It has an interesting, textured landscape and much 'vegetation' and natural resources for its inhabitants. There are two types of life-forms with different colours, shapes and levels of intelligence. The aliens are perfectly adapted to their surroundings and are clearly contented and entertained by the natural stimulation this rich planet naturally offers. Nothing on this planet threatens Earth.

All the aliens are warm-blooded mammalian-like creatures. We struggle to understand their languages and culture, but contact with the aliens has been friendly. In human terms, long red aliens are the most intelligent life-form on this planet; nevertheless our tests read their IQ at 80—lower than the average human. Square yellow aliens are untestable by our measures but their intelligence level seems to be similar to that of an Earth dog.

There is no government on this planet with vast areas sparsely occupied by both types of aliens who live simply, freely and sociably in groups of their own kind without any manufactured energy systems. In some areas there is an accumulation of long red aliens who run a rudimentary energy system powered by the excrement of young square yellow aliens.

In contrast to their free lifestyles, the yellow aliens captured in these 'towns' are forced in to enclosures. Some enclosures are inches larger than the yellow aliens' bodies, meaning that they only stand or lie down and stare at a blank wall. As far as our equipment can ascertain these conditions do not suit the yellow aliens' natural instincts, and they appear discontented and stressed. Unlike their free counterparts they also appear vulnerable to disease and infection.

Some of these yellow aliens have a range of illnesses which the Ship's Doctor has interpreted as like pneumonia, dysentery, wasting syndrome, meningitis, enteritis, broken limbs, abscesses and ruptured stomachs. By no means all of the captured yellow aliens, but certainly some, give birth in their own excreta and live coated in their own faeces and blood. They drag themselves around, unable to mobilise themselves like their free counterparts. Ship's Doctor measures the yellow aliens' experience of pain as 'highly-developed'.

After five or six Earth months (a fraction of a free yellow alien's life) their excreta loses its power, so the red aliens kill the yellow aliens in the following manner. They injure their brain to render them unconscious (but Ship's Doctor measures occasional failure, meaning that some yellow aliens remain partially or fully conscious). The red aliens then cut through the yellow aliens' main arteries and turn them upside down to bleed to death before plunging them into a boiling liquid to kill bacteria. The inefficiency of this practice means that some yellow aliens visibly struggle in their restraints as they hit the boiling liquid."

On reading this entry, the communication from Earth's Leading Council asks the Captain:

"Re: the square yellow aliens used for power by the long red aliens:

Are their lives worth living?"

If you were the Captain, how would you answer this question? Discuss with the group.

Participants were then asked:

What do you think distinguishes a morally right action from a morally wrong action?

What are participants' meat-eating and animal-evaluating ideas?

This task compared the 'basic philosophy' questions to those specific about animals. The design was kept flexible to avoid repetitions, the following is a rough schedule. Because these questions depended on participants' previous answers, they were not given hard copies.

Earlier you said that the criteria for deciding how people with different levels of awareness should be treated was [ ]/[is this how you would treat animals with a similar level of awareness?].
Why not?

If and makes things good or bad, are and good and bad to animals too?

If constitutes suffering, can animals suffer?

If and is important in weighing up different demands, how does this compare to weighing up an animal's experience against our need for meat?

Is meat-eating morally justified?

Participants were advised that the alien thought experiment was based on the life of a factory farmed pig and asked:

On the whole, do you think that 'factory farmed' pigs lead a worthwhile life?

Connections with their earlier answers were made where possible and participants explored any topics that they wished to make clearer.

Schedule for design 3

What are participants' beliefs about farmed animals' treatment; what are their philosophies about meat and farmed animals; how do they evaluate animals; how do those views fit together?

The group chose a 'correct' statement from opposite pairs which are presented as numbered cards. Participants were allowed roughly 5 minutes per pair.

Beliefs

When they are slaughtered for meat, most animals suffer	When they are slaughtered for meat, most animals do not suffer
Animals experience pain and fear and pleasure and happiness	Animals cannot experience pain and fear or pleasure and happiness
Meat is unnecessary in a healthy diet	Meat is necessary in a healthy diet
Most farm animals live miserable lives	Most farm animals live contented lives

Moral ideas

All animals are equally important	Some animals are more important than others
People should be limited in what they are allowed to eat	People should be allowed to eat whatever they want

Evaluating animals

Most people don't want animals to be harmed	Most people don't care if animals are harmed
It is important to care for animals' well-being	Caring for animals' well-being is unimportant

In/consistency

It makes no difference whether an animal was	If an animal was bred just to be eaten, then eating it

bred to be eaten or not	is different to eating a pet
Most people would not kill animals for their own food if slaughterworkers went on strike	Most people would kill animals for their own food if slaughterworkers went on strike
Eating meat causes animals to be harmed	Eating meat does not cause animals to be harmed

Schedule for design 4

How do participants respond to questions about in/consistencies?

Theoretical arguments, popular news articles and feedback from a pilot group identified the questions shown below.

In what ways are humans and animals different to each other which justify treating them differently? (In other words, what are the morally-relevant differences between humans and animals?)

In what circumstances would you eat dogs and cats?

If meat was unavailable in shops would you kill animals for meat yourself?

On the whole, is it cruel to eat meat?

Is being an animal-lover at odds with being a meat-eater?

Do you care about some animals more than others? If so, in what ways do you care about some animals more than others?

Is being a compassionate person at odds with being a meat-eater?

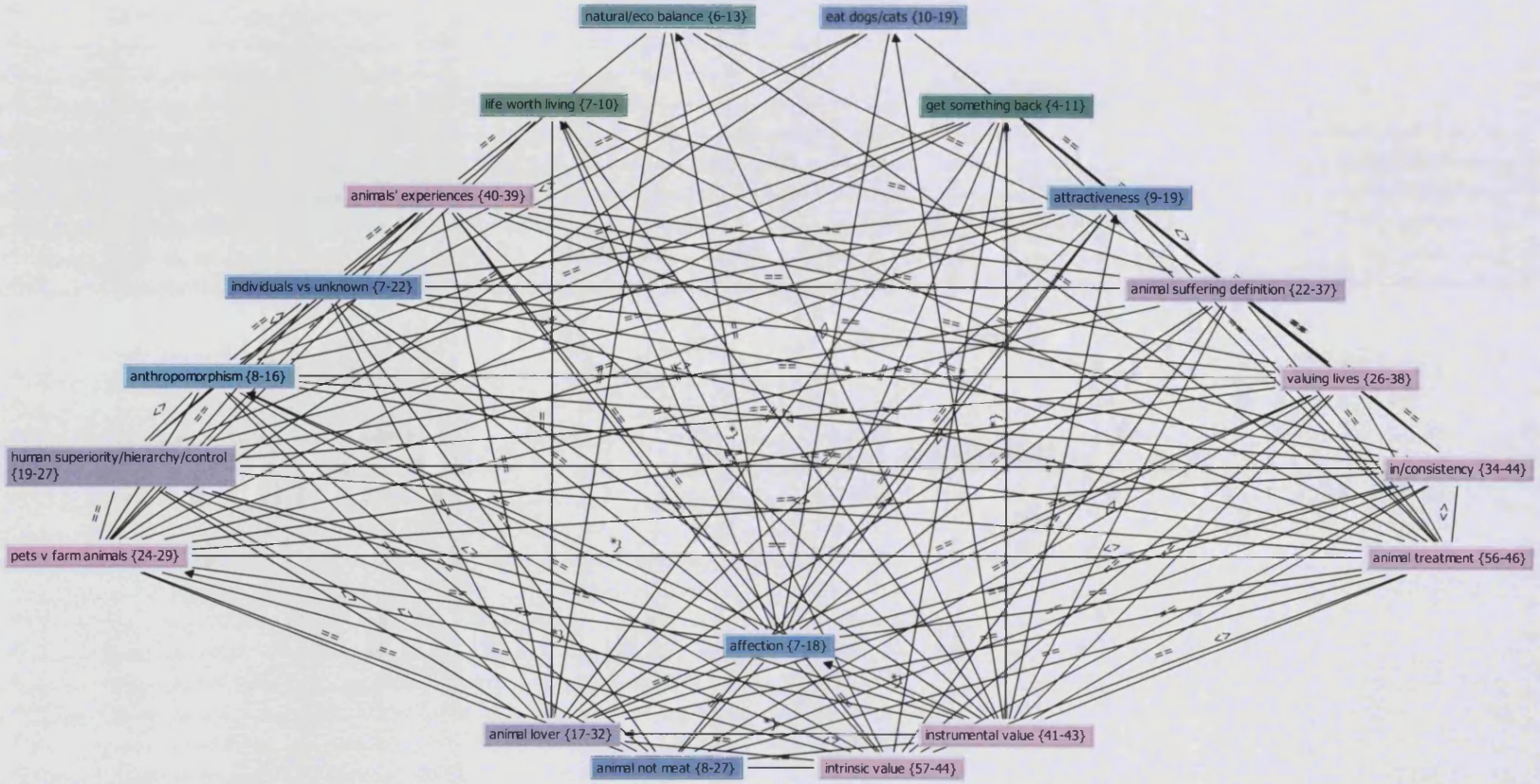
Have you ever thought about these questions before? How much/deeply? What made you think about them?

APPENDIX C

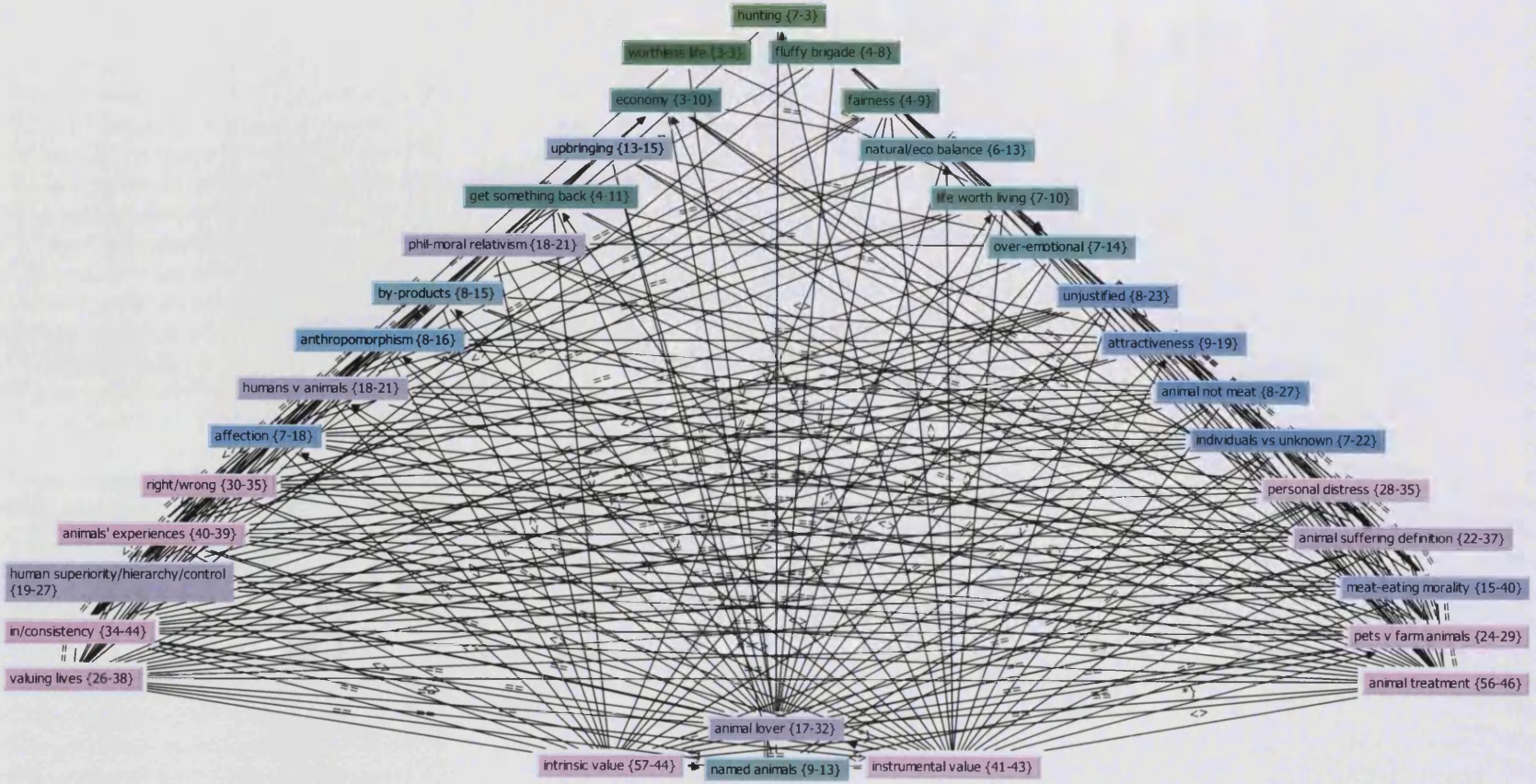
Atlas.ti code networks (original images also on associated CD)

Please refer to original images on CD to enlarge any of the networks in this Appendix

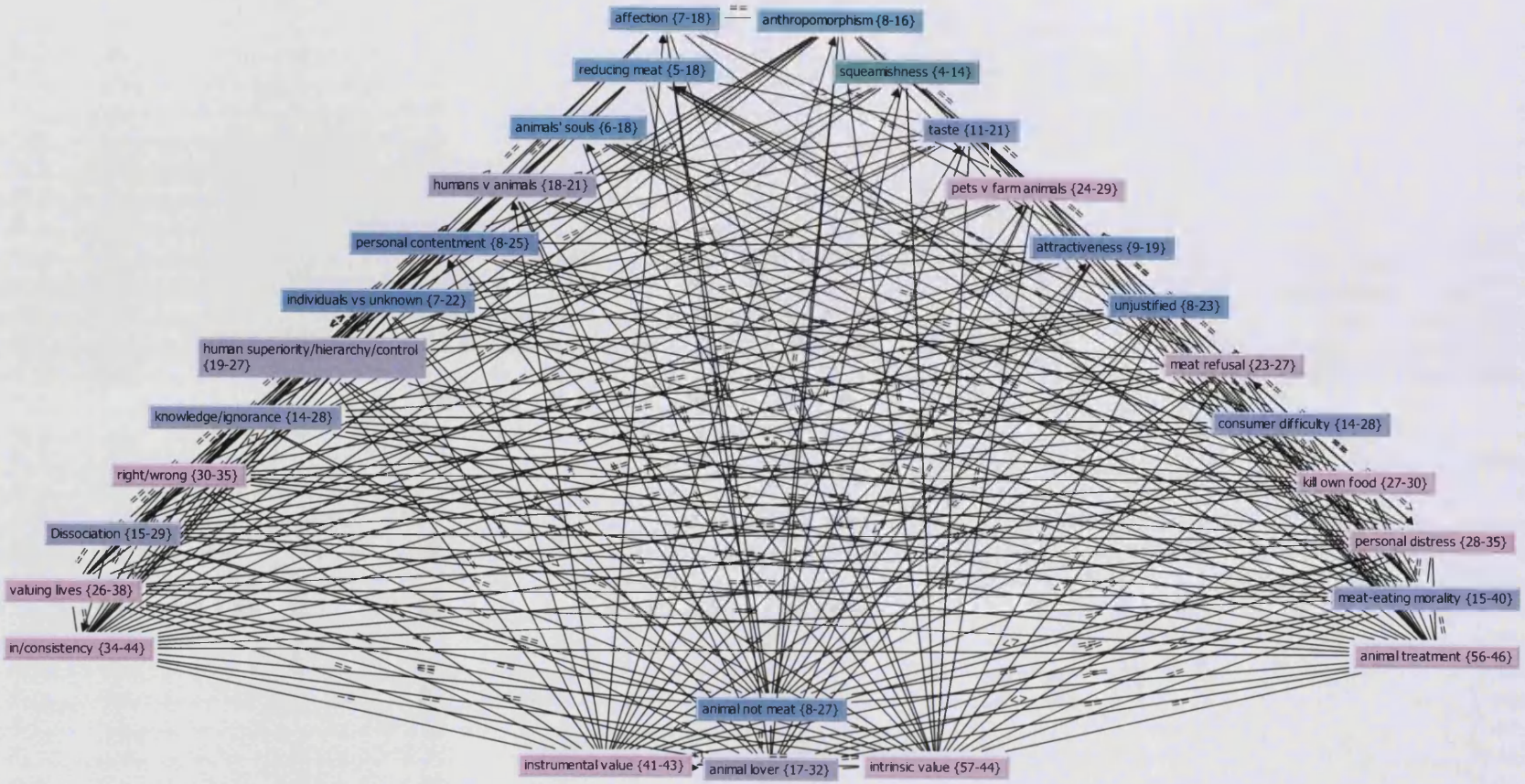
Network View on affection



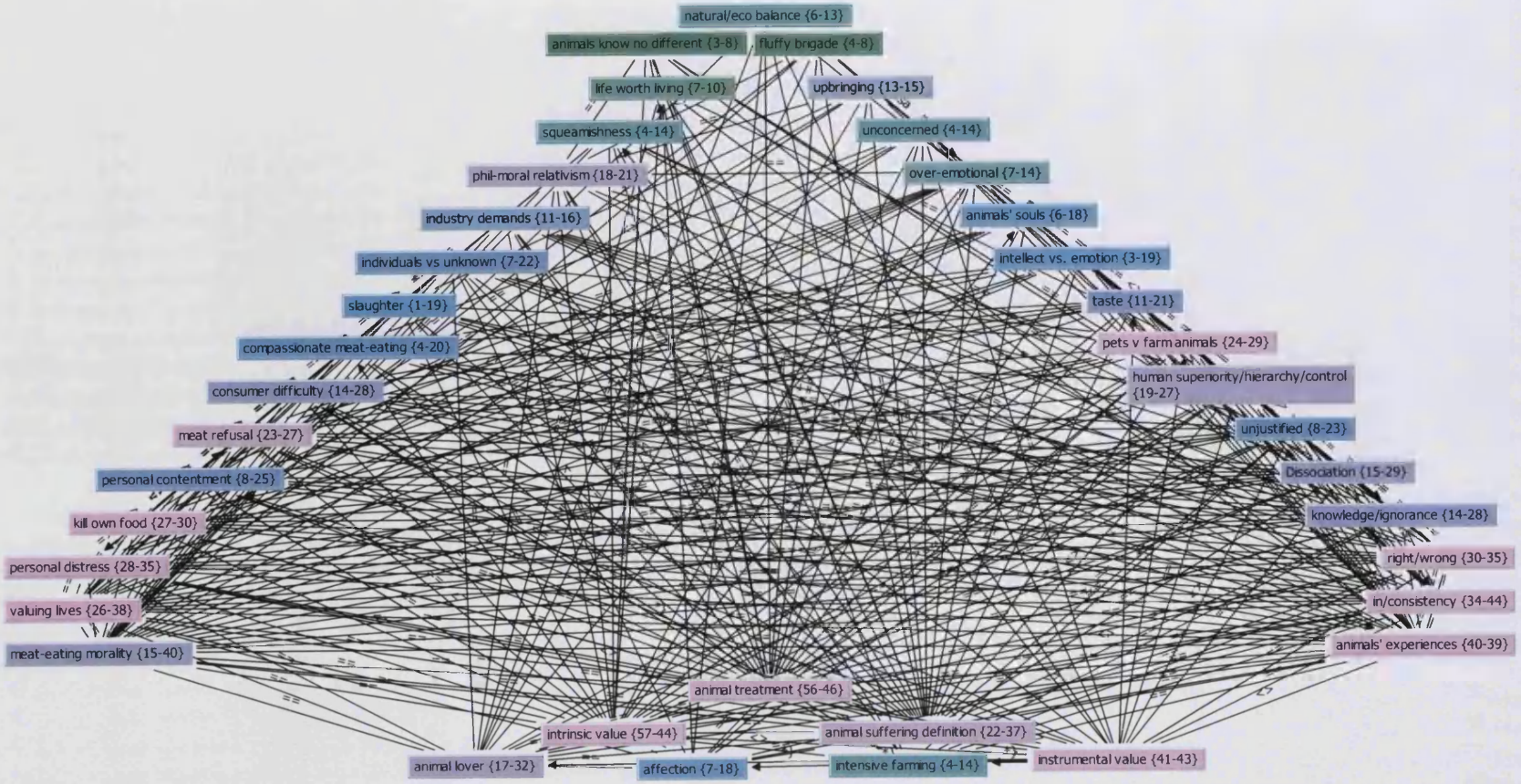
Network View on animal lover



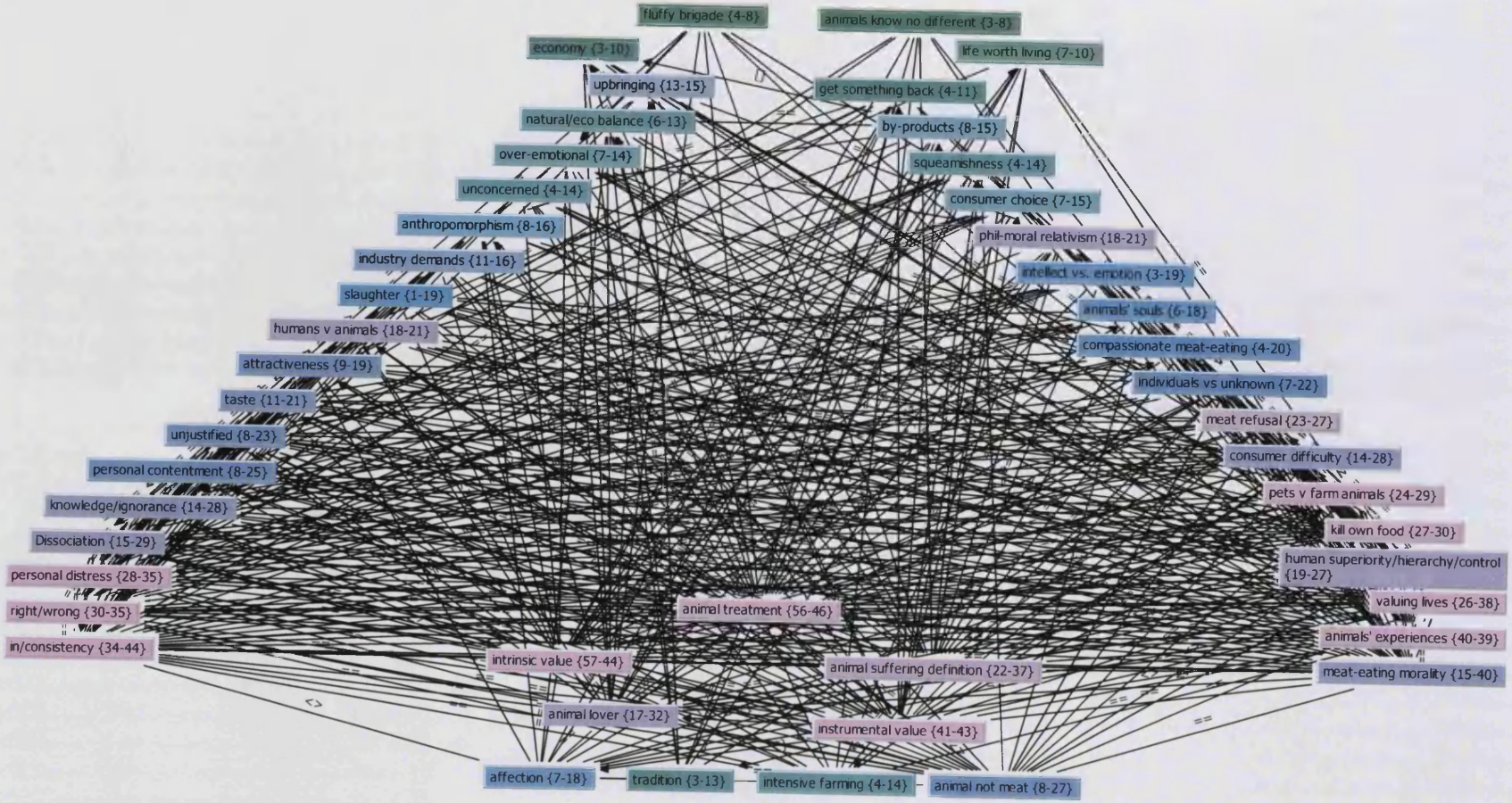
Network View on animal not meat



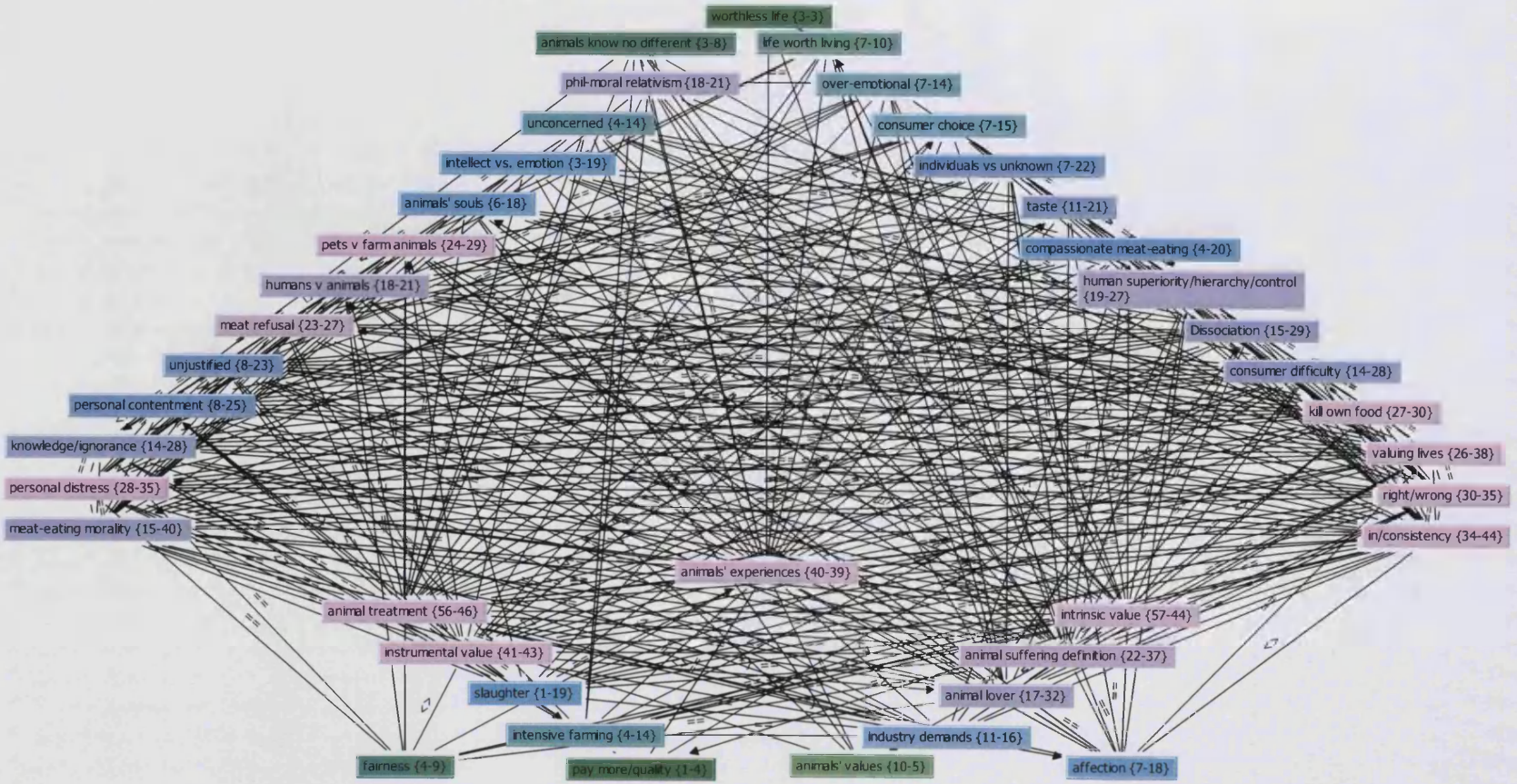
Network View on animal suffering definition



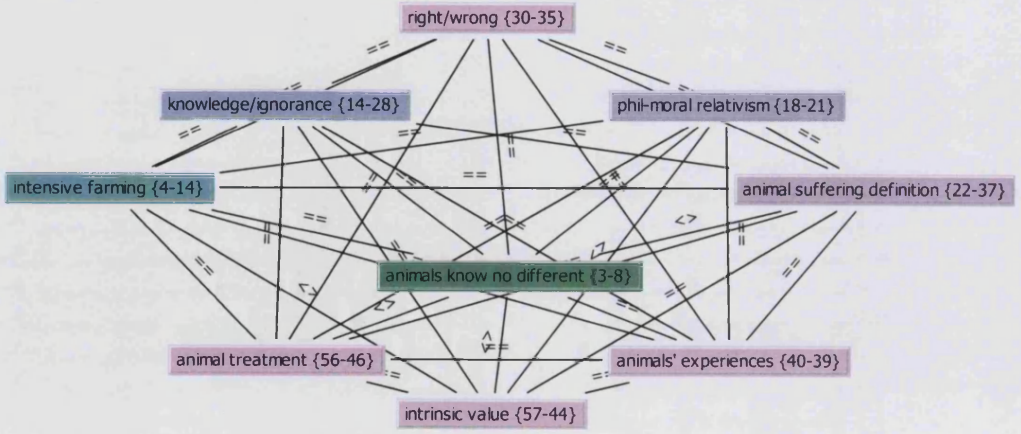
Network View on animal treatment



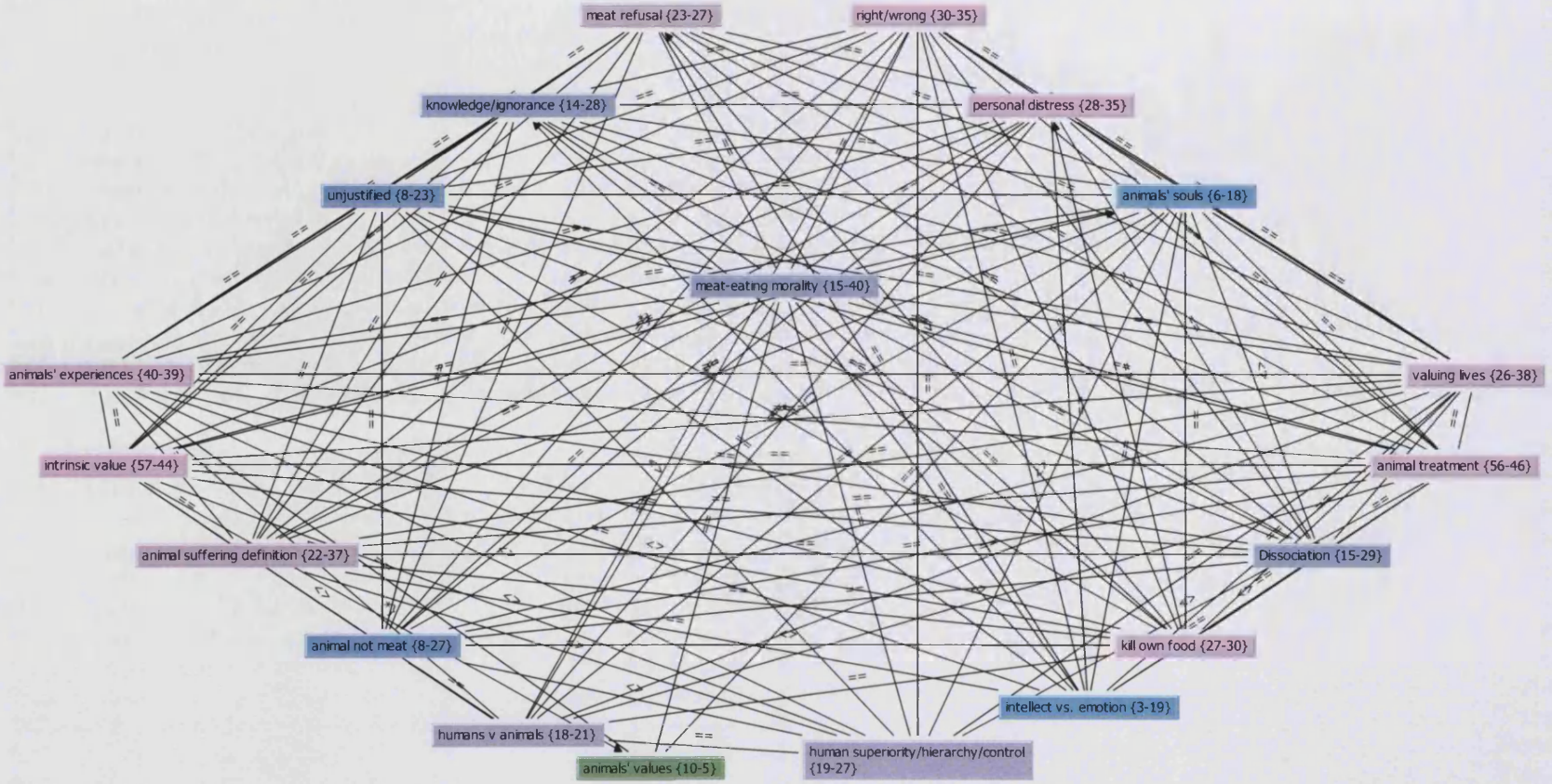
Network View on animals' experiences



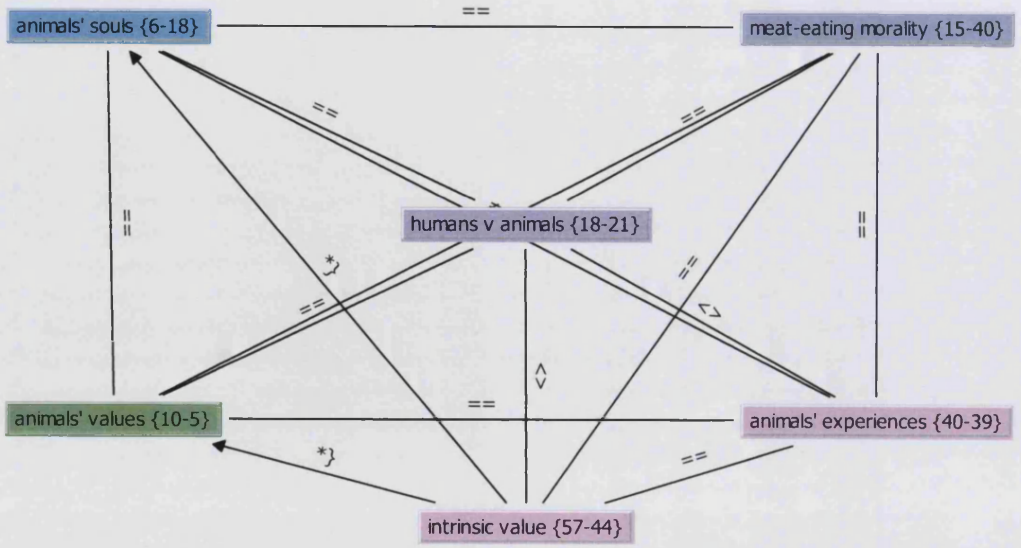
Network View on animals know no different



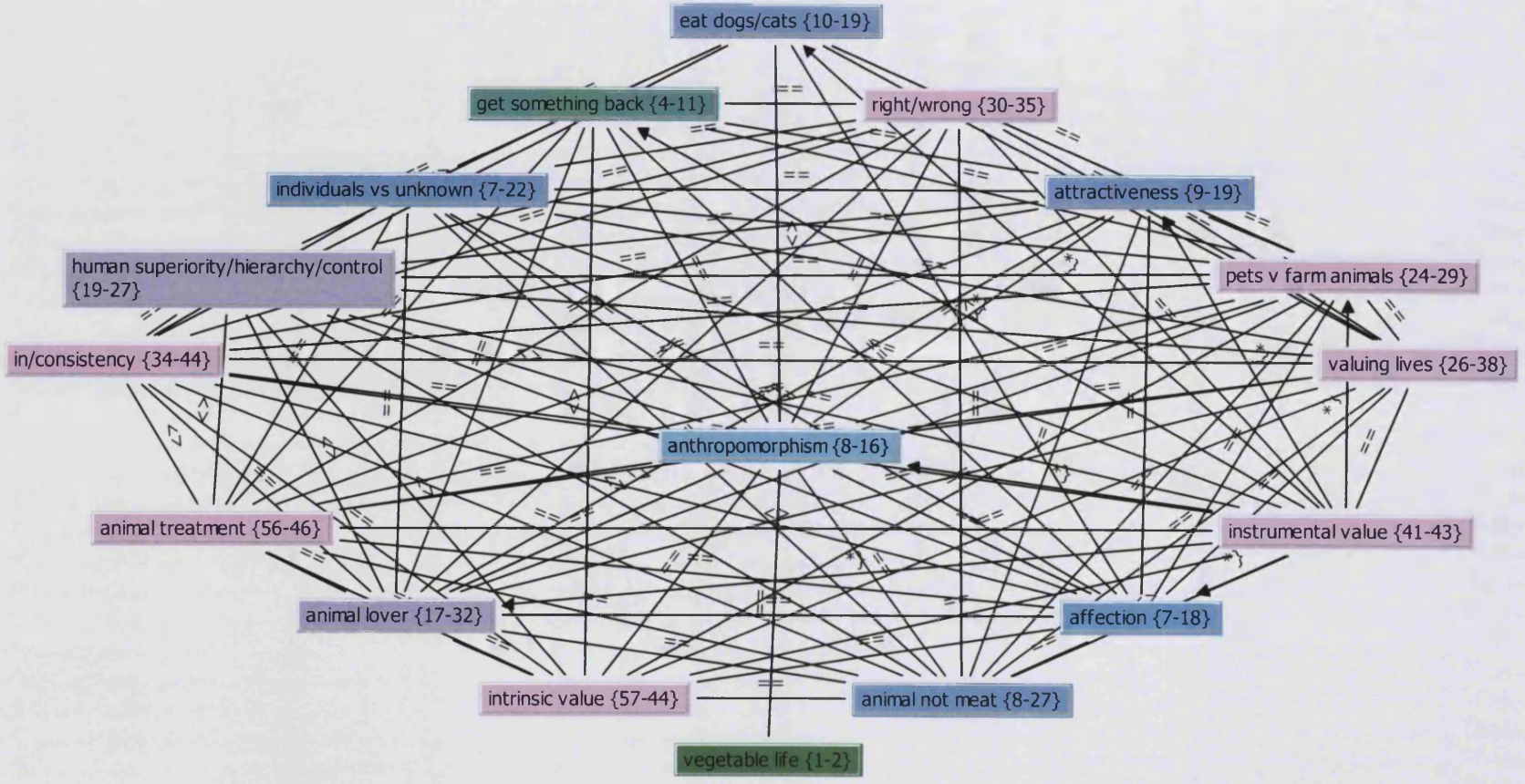
Network View on animals' souls



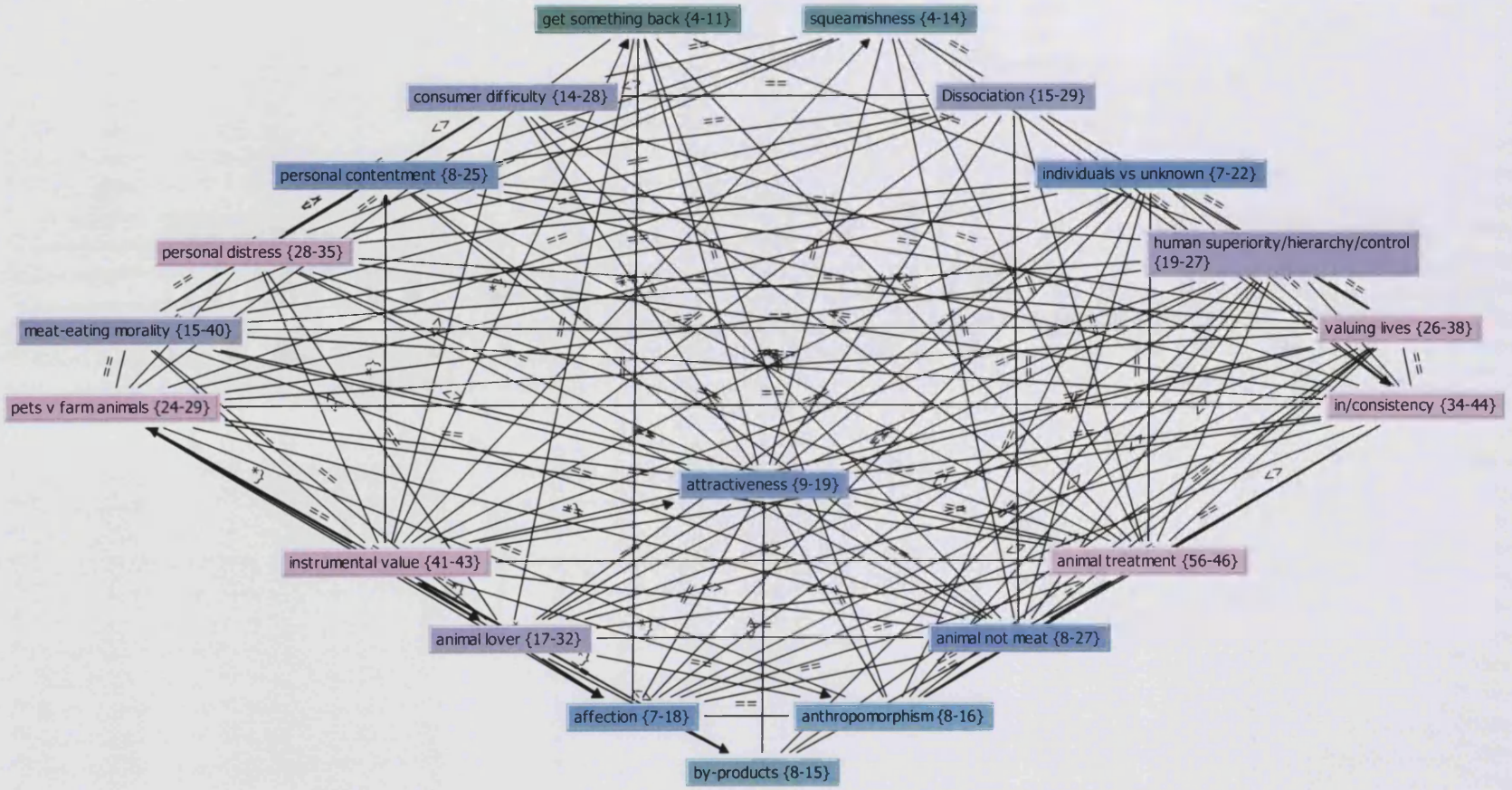
Network View on animals' values



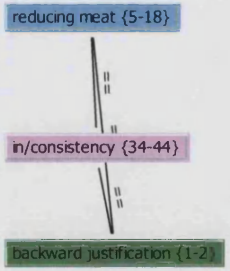
Network View on anthropomorphism



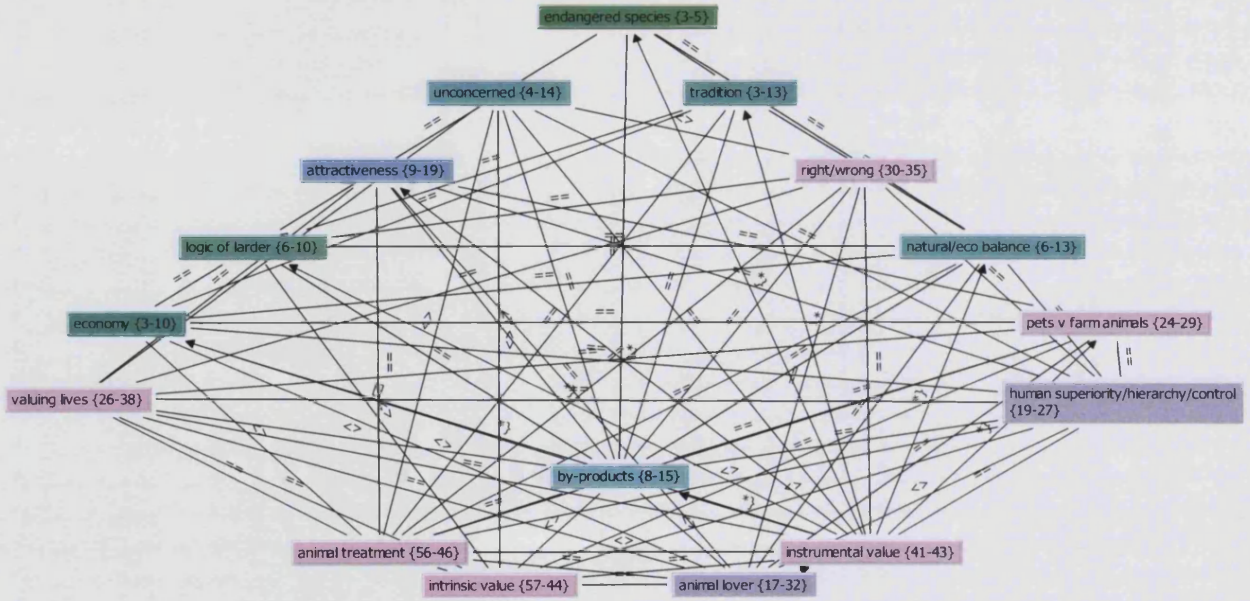
Network View on attractiveness



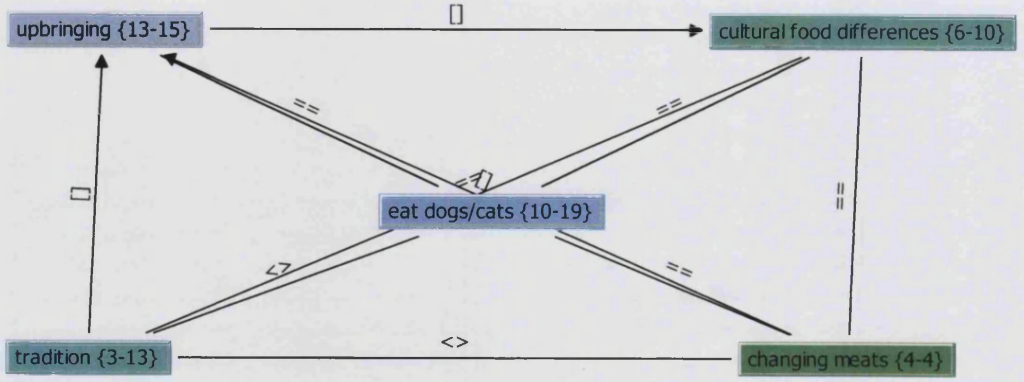
Network View on backward justification



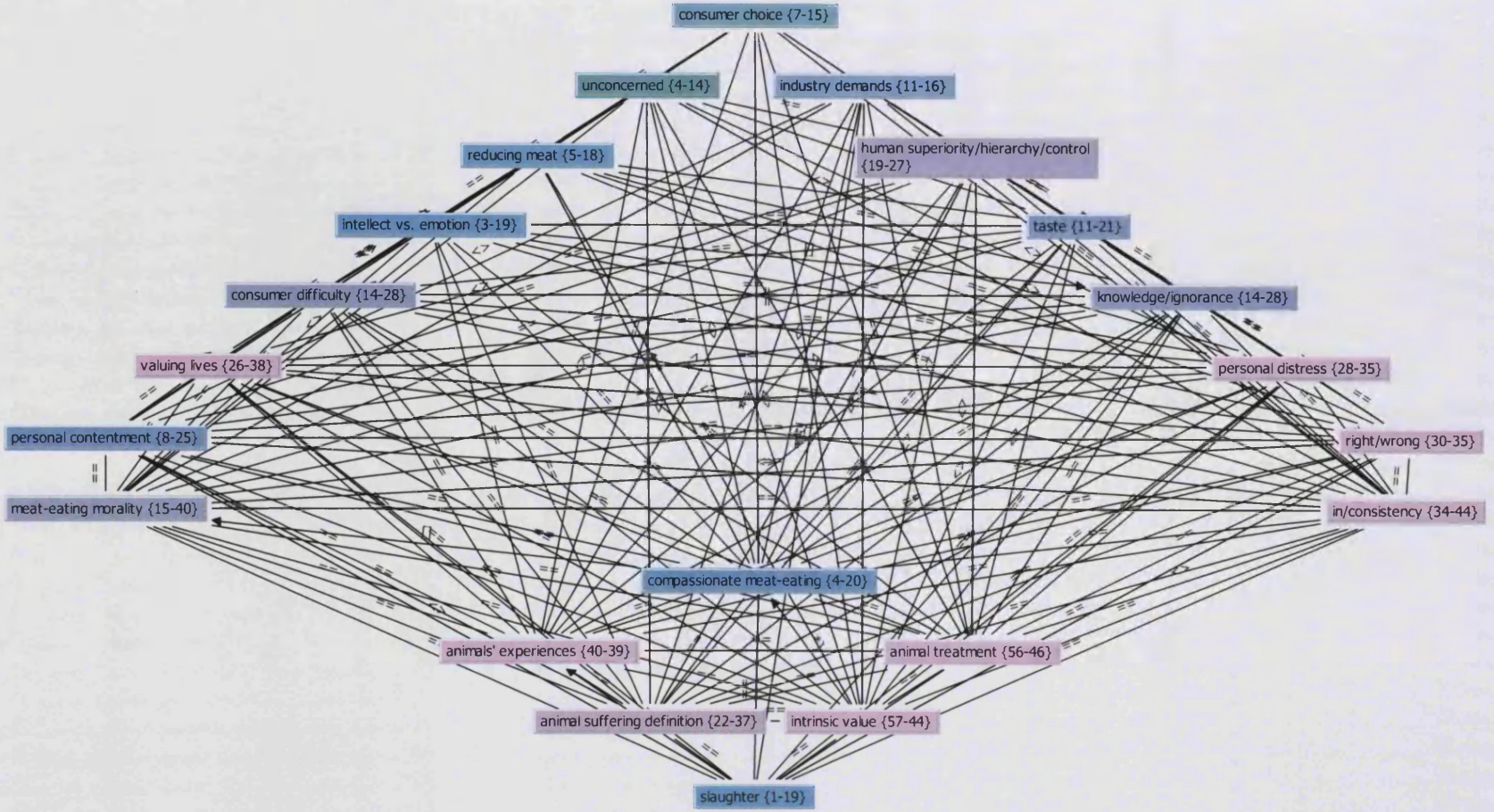
Network View on by-products



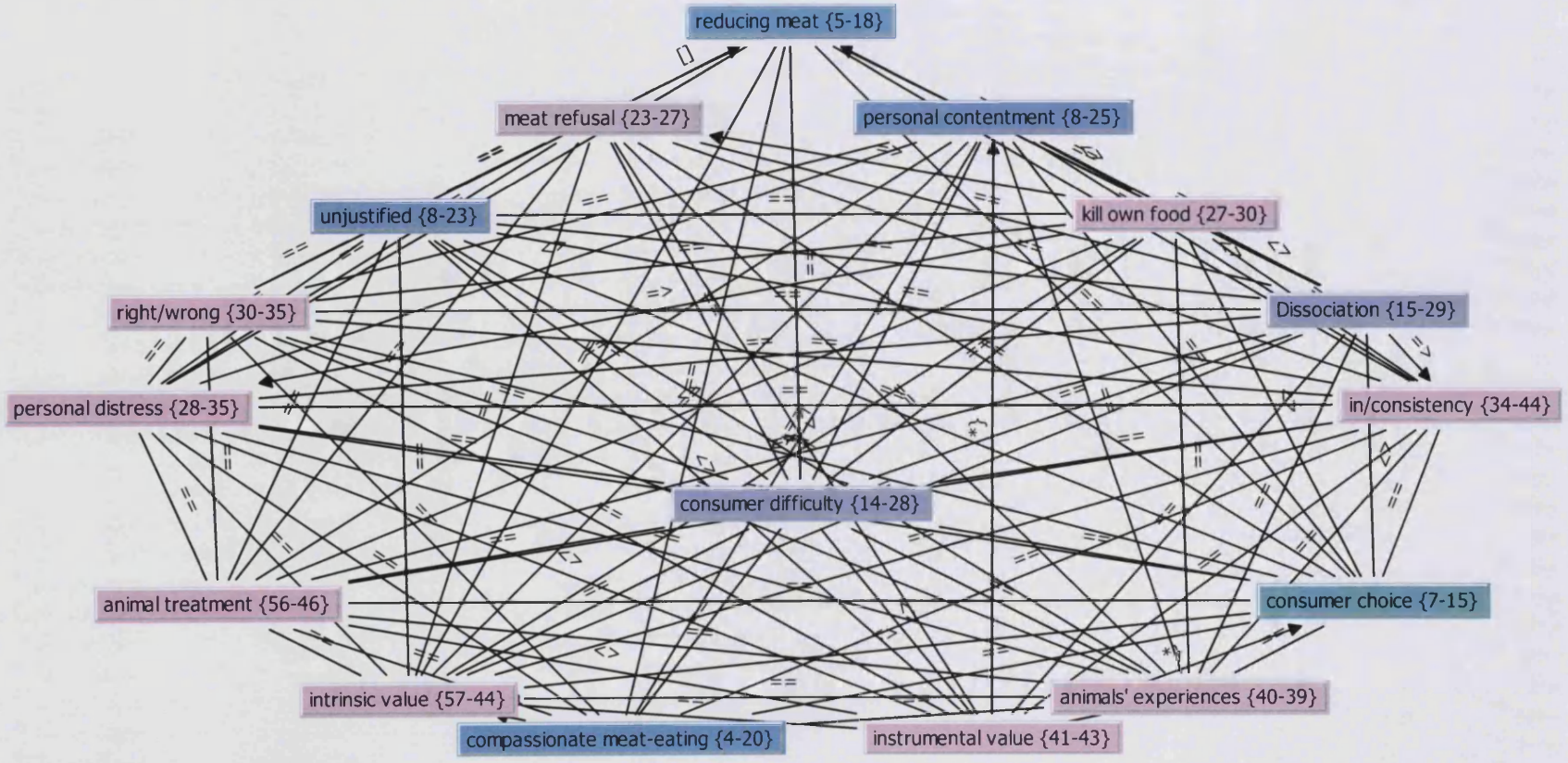
Network View on changing meats



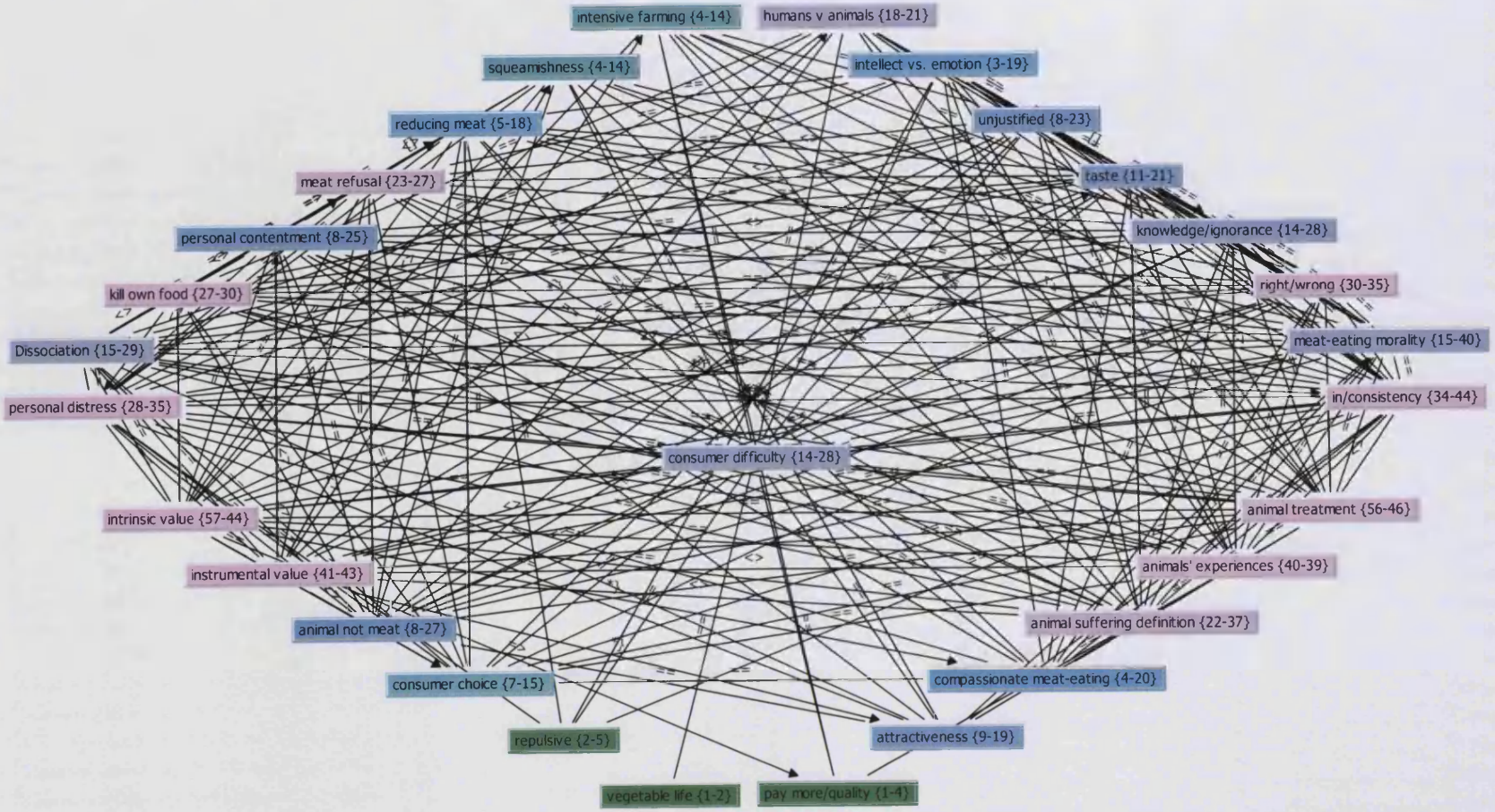
Network View on compassionate meat-eating



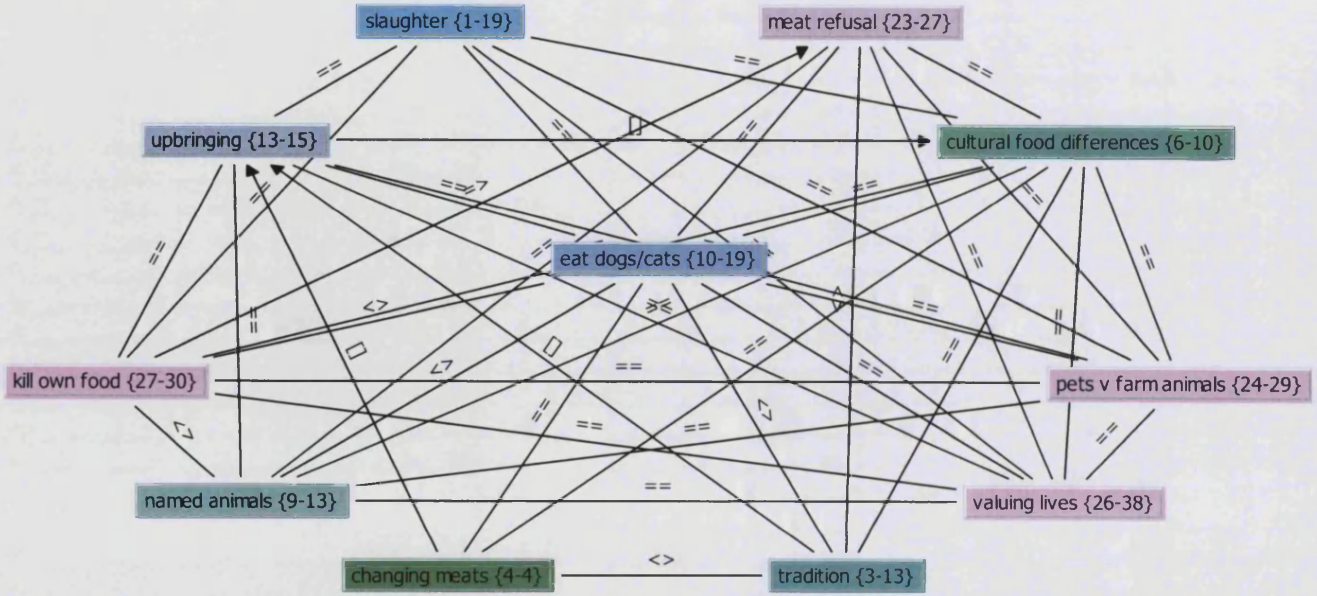
Network View on consumer choice



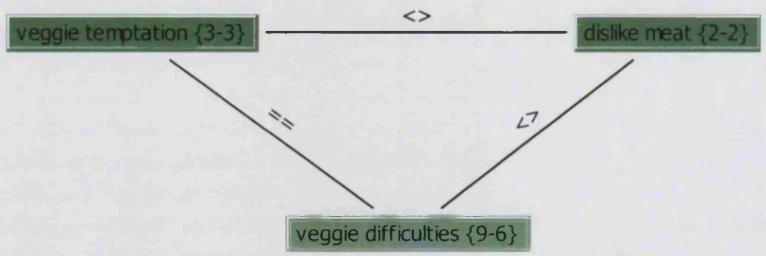
Network View on consumer difficulty



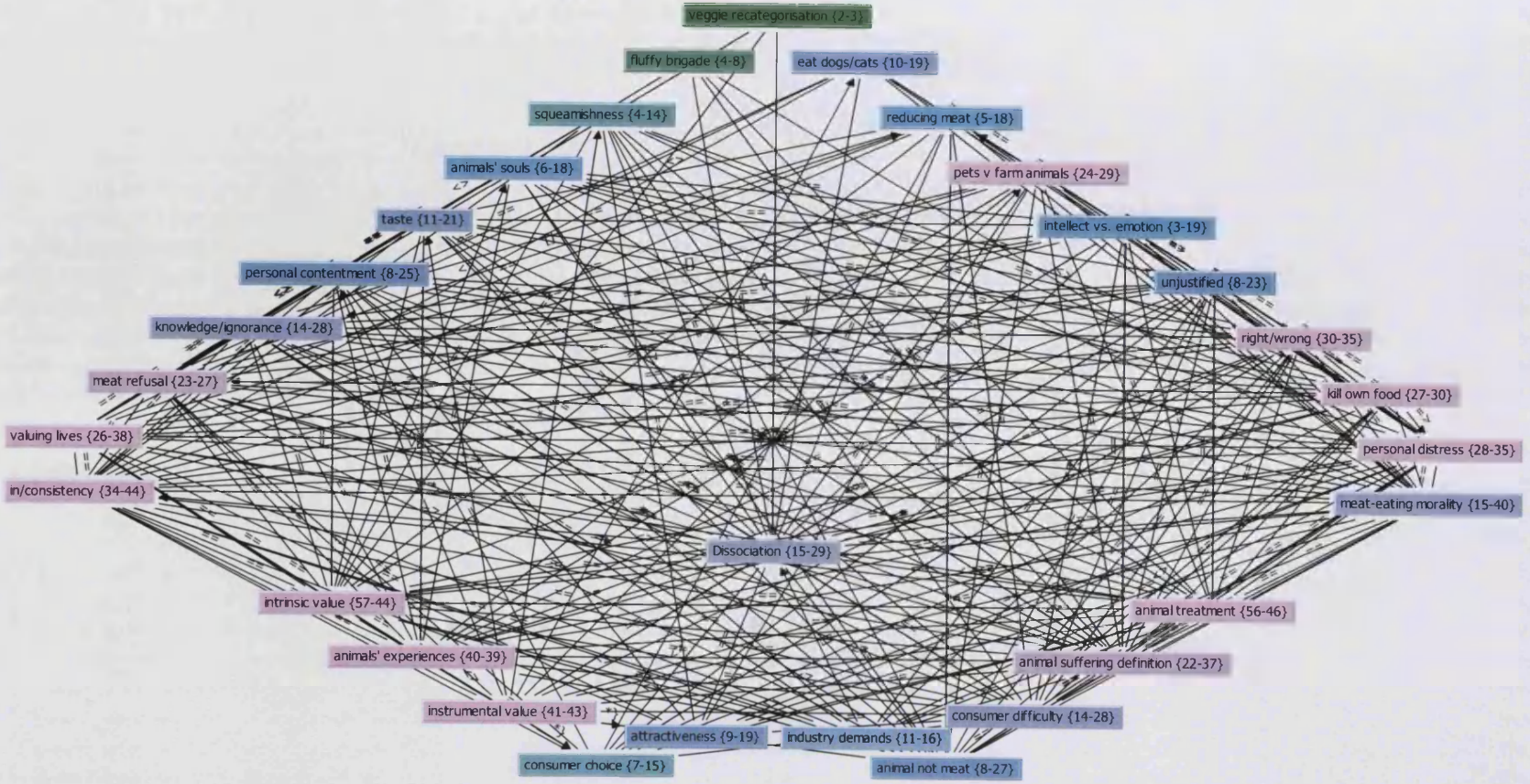
Network View on cultural food differences



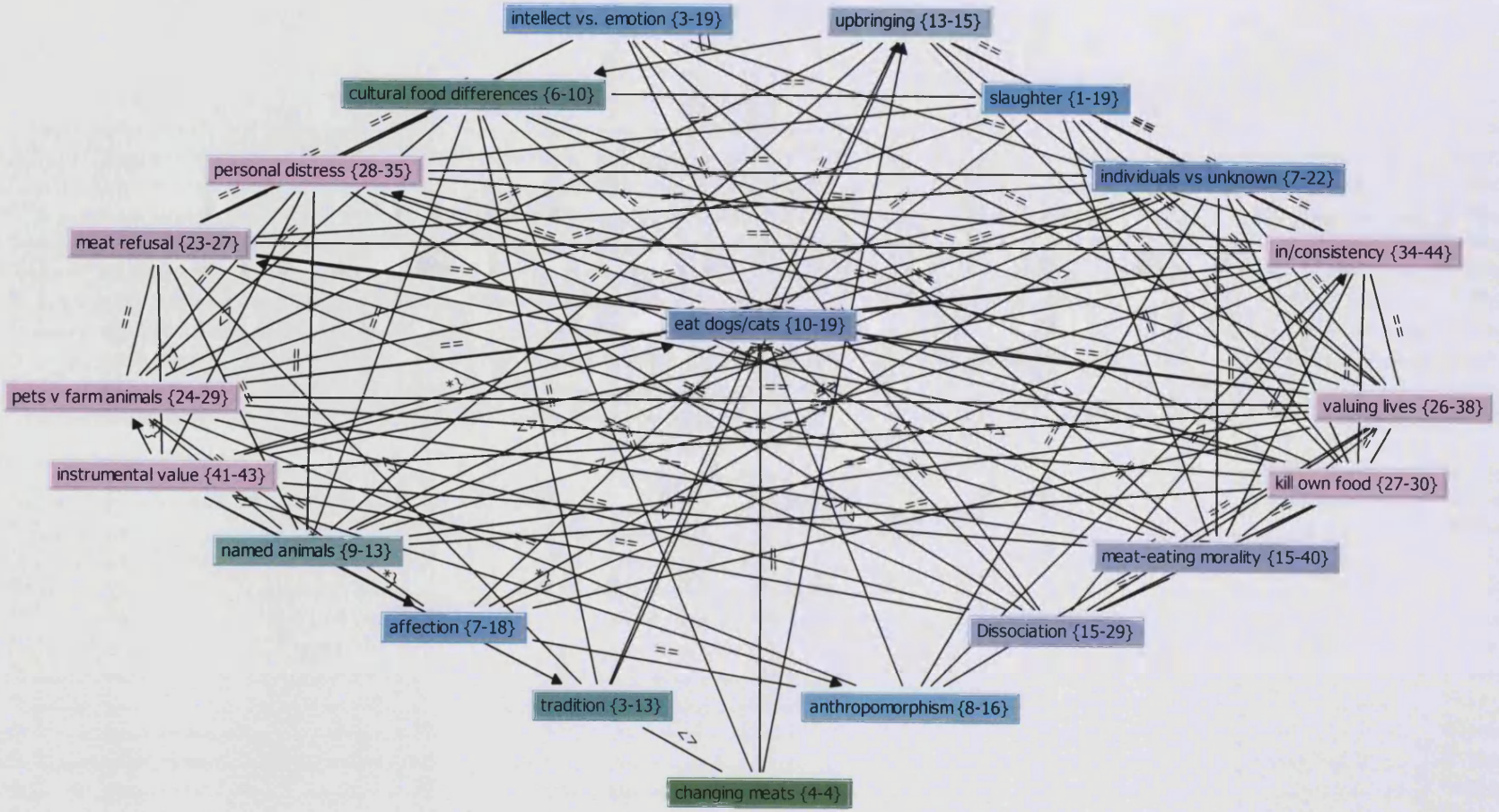
Network View on dislike meat



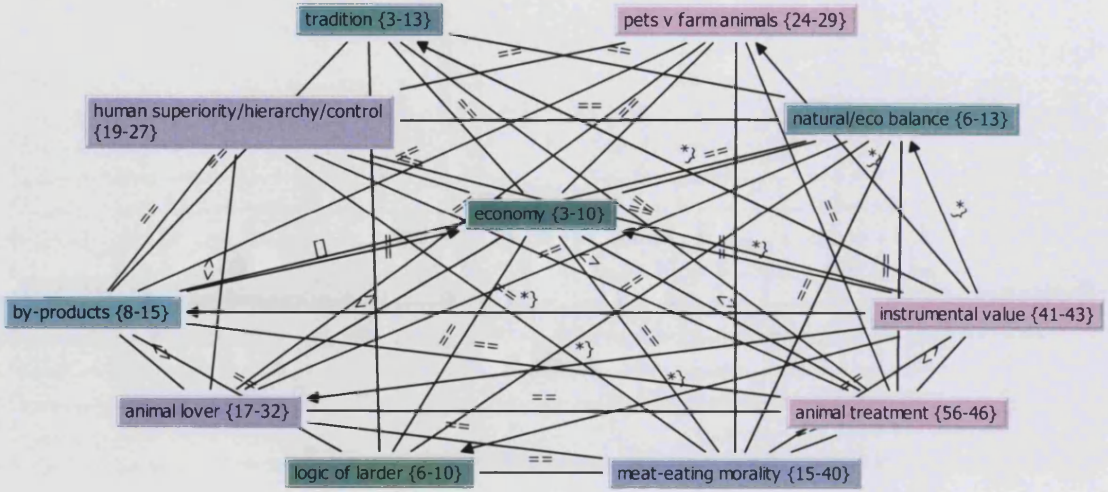
Network View on Dissociation



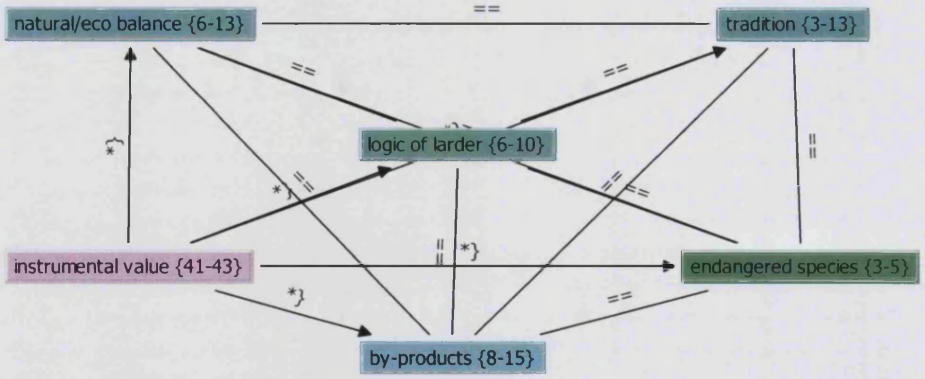
Network View on eat dogs/cats



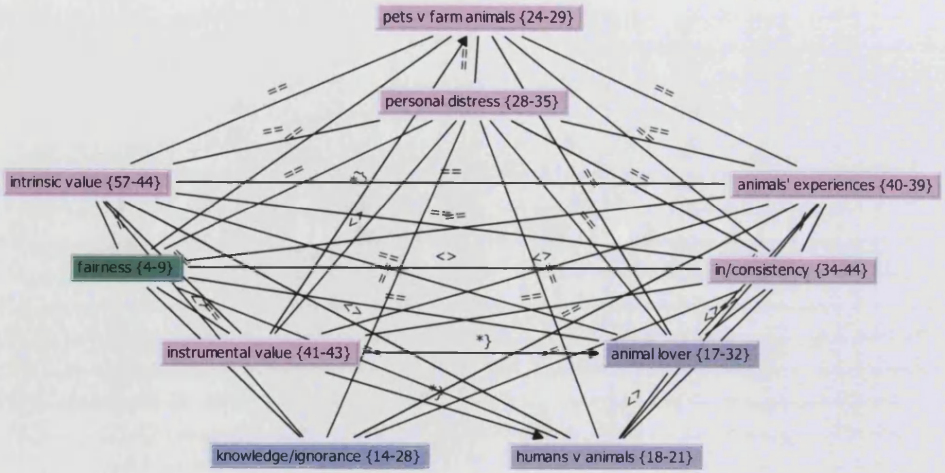
Network View on economy



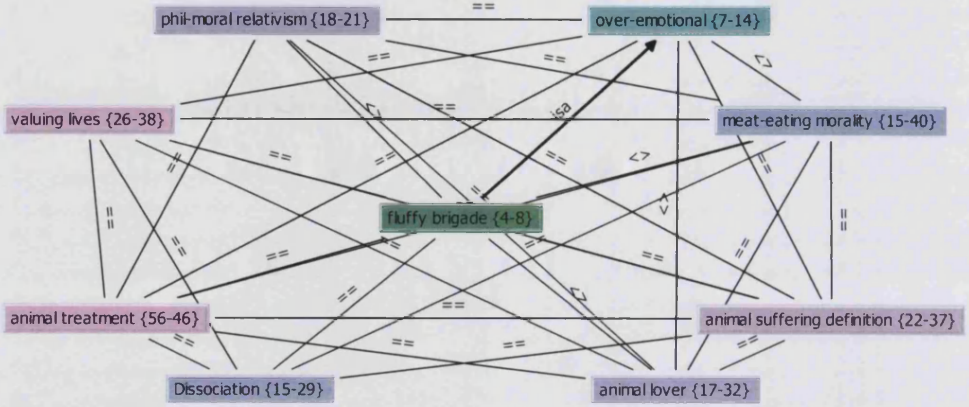
Network View on endangered species



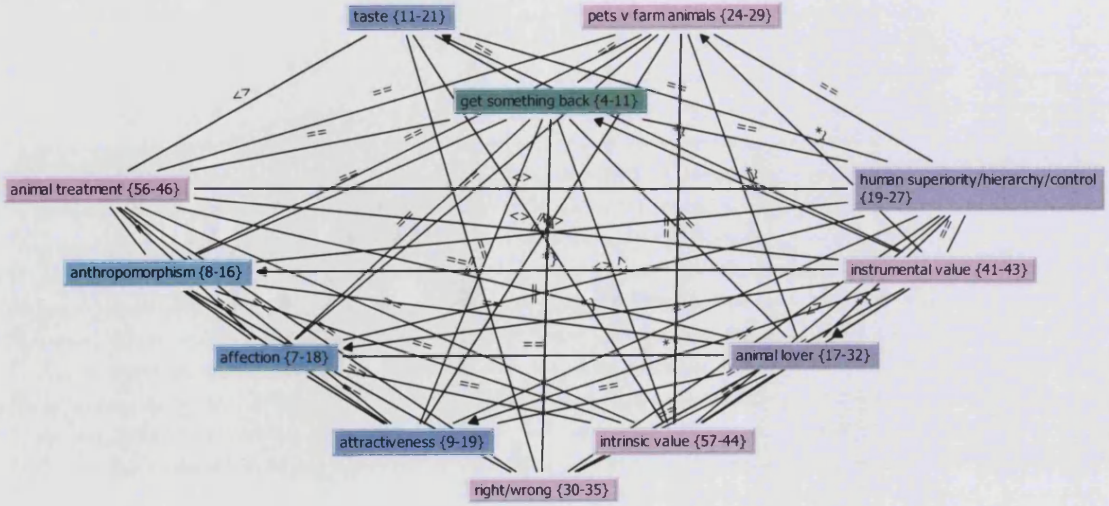
Network View on fairness



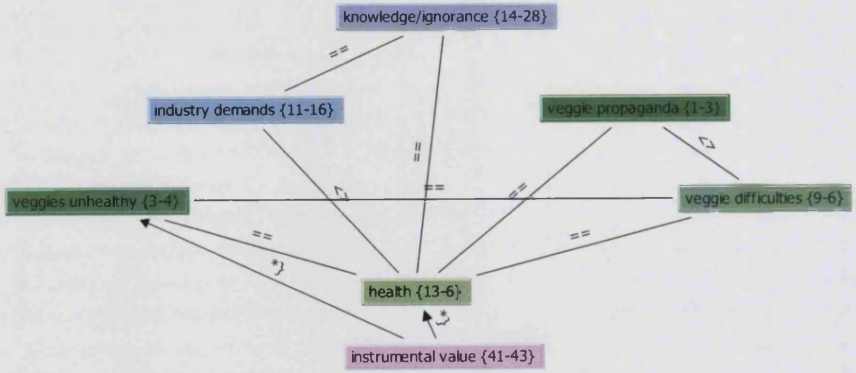
Network View on fluffy brigade



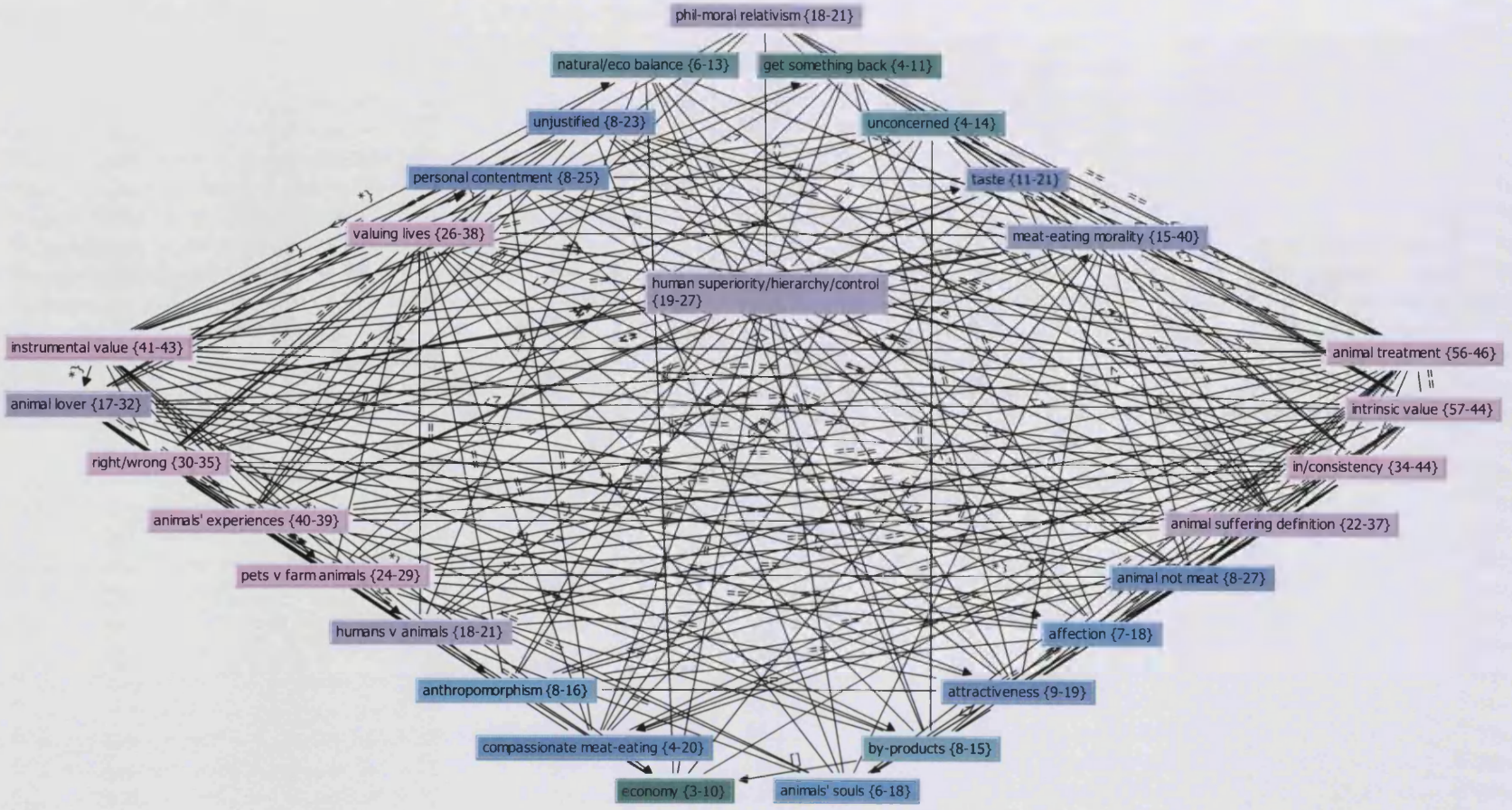
Network View on get something back



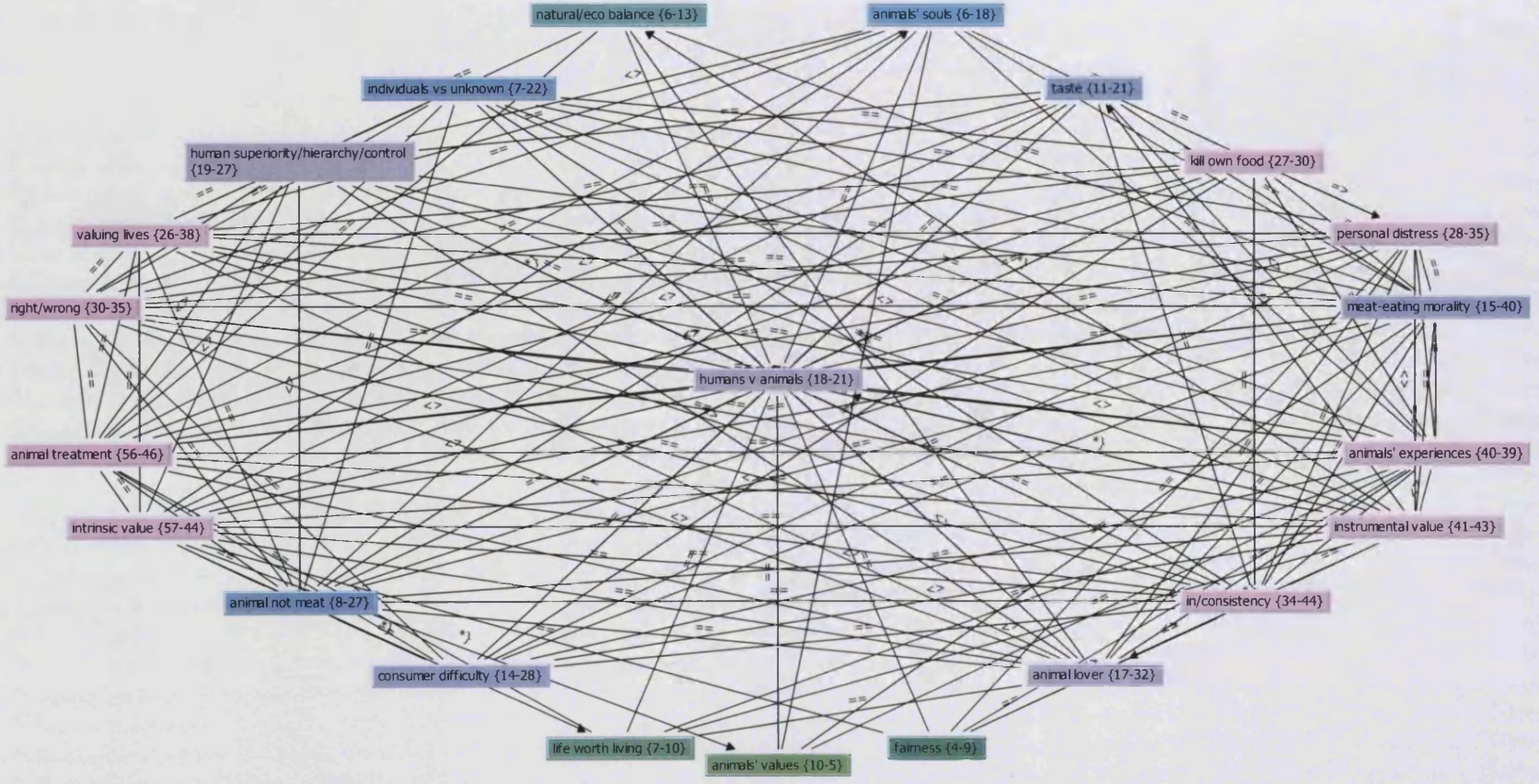
Network View on health



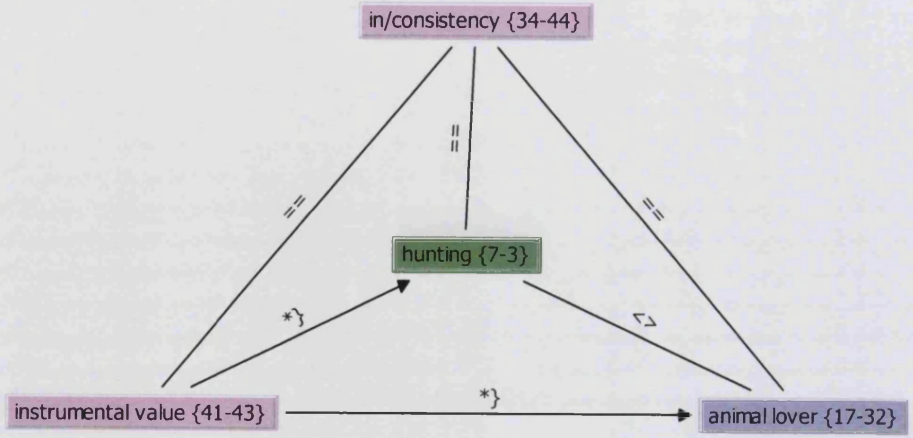
Network View on human superiority/hierarchy/control



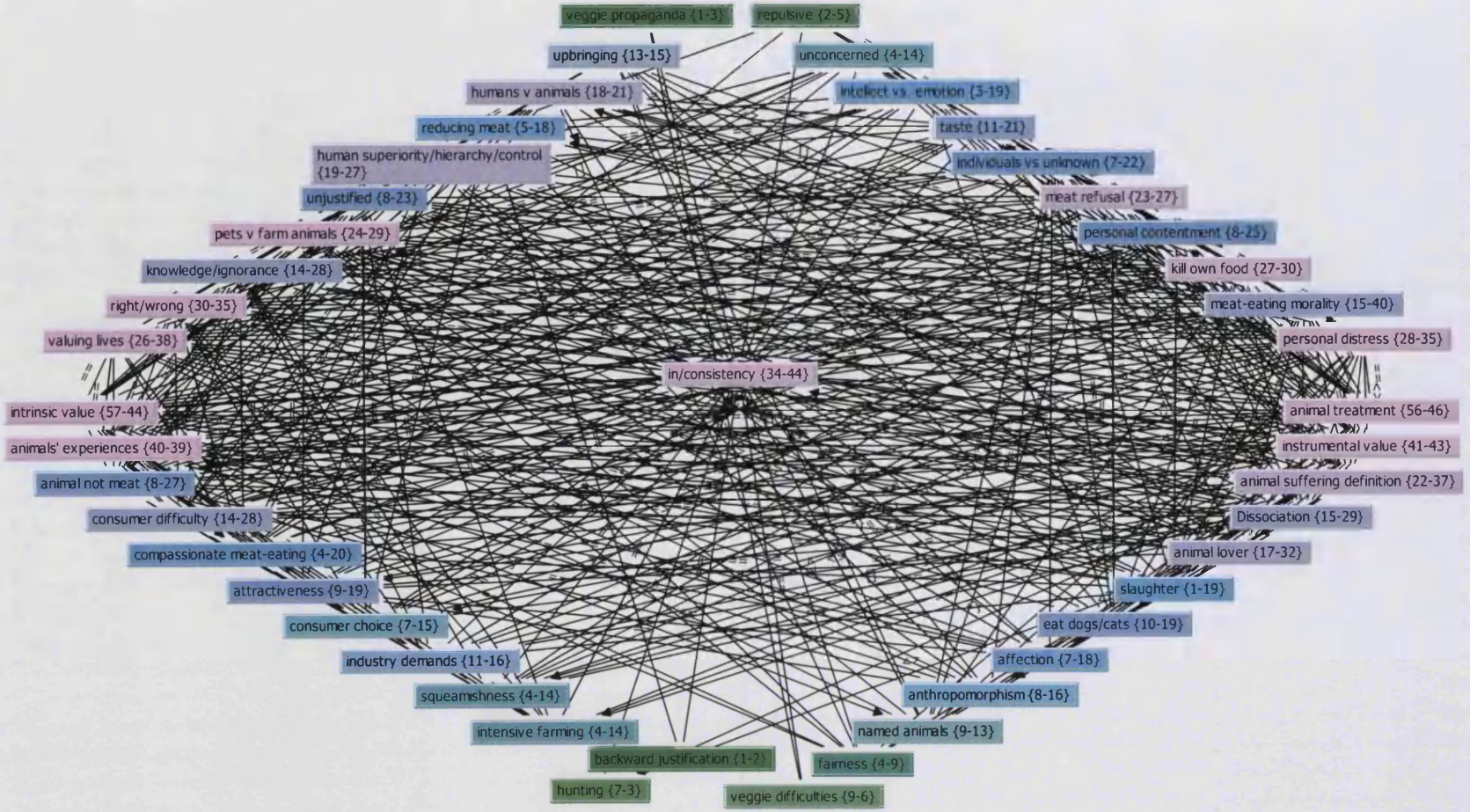
Network View on humans v animals



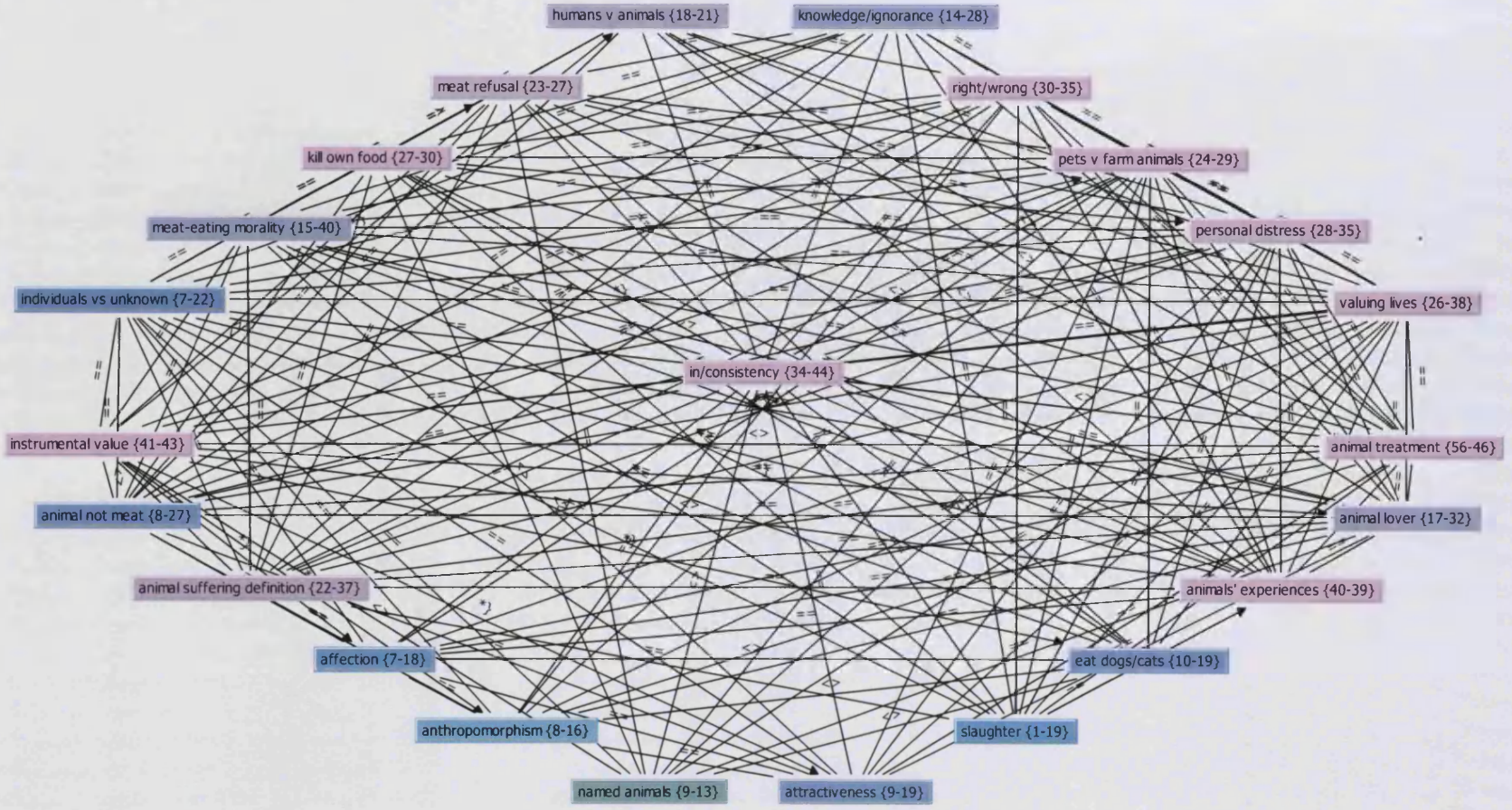
Network View on hunting



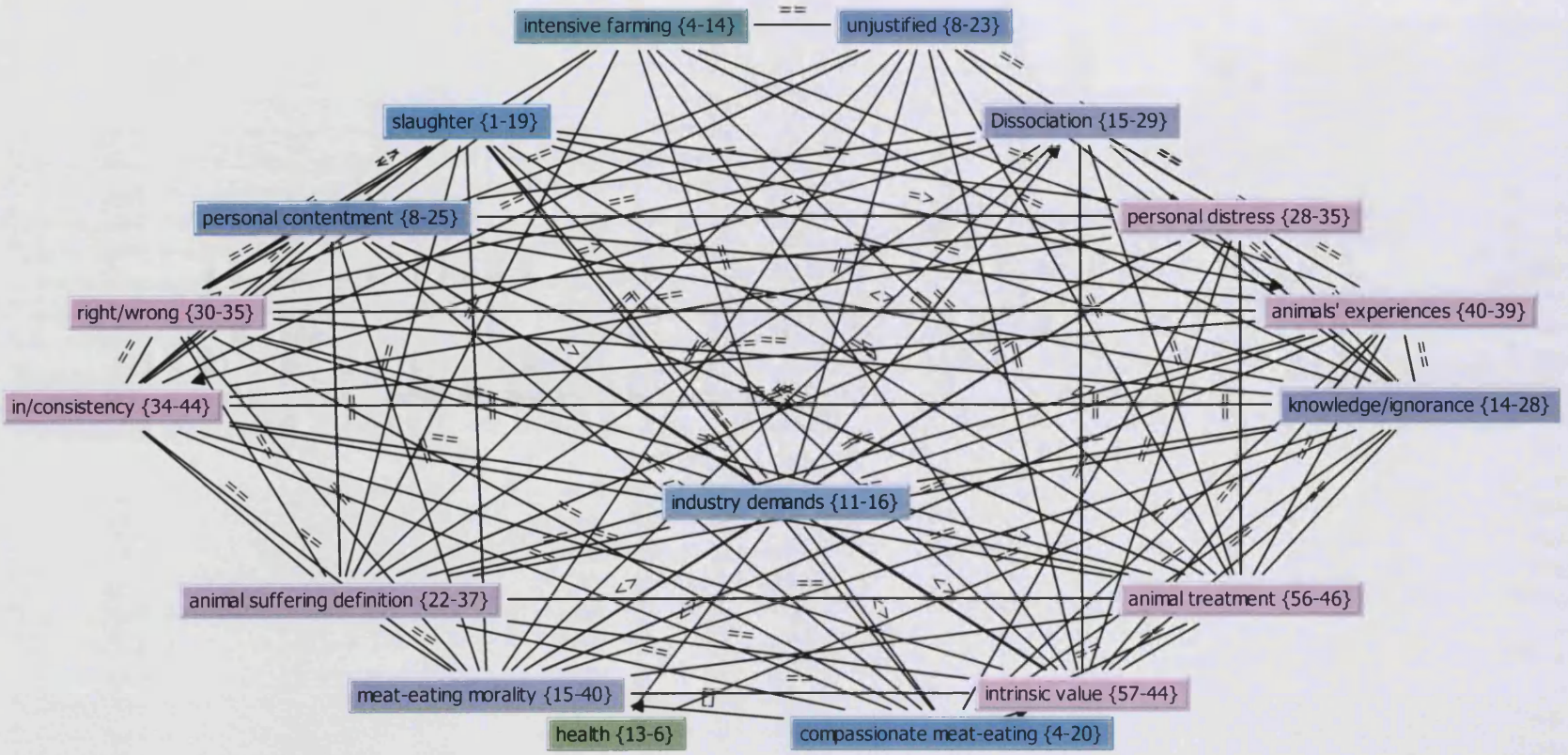
Network View on in/consistency



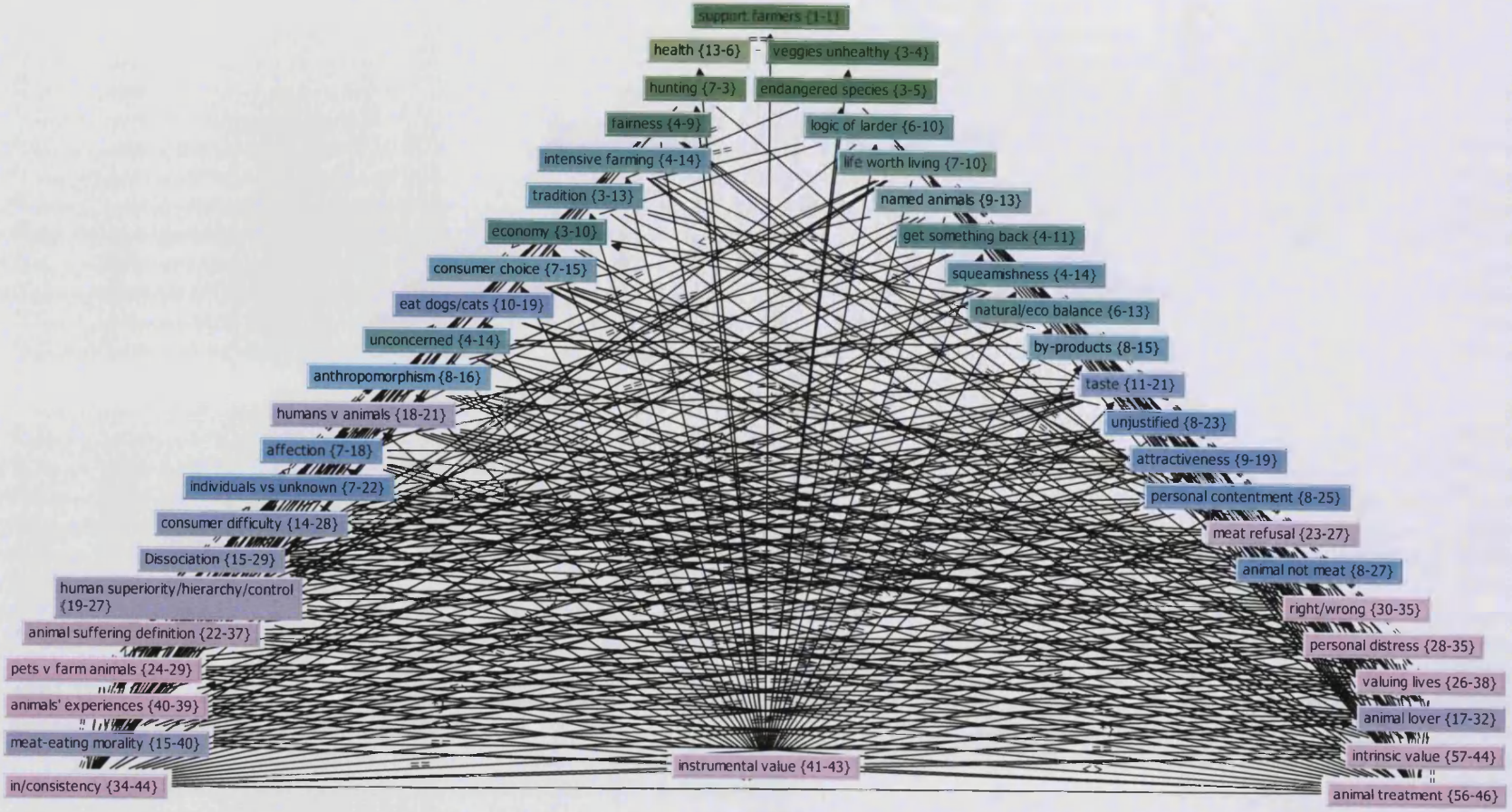
Network View on individuals vs unknown



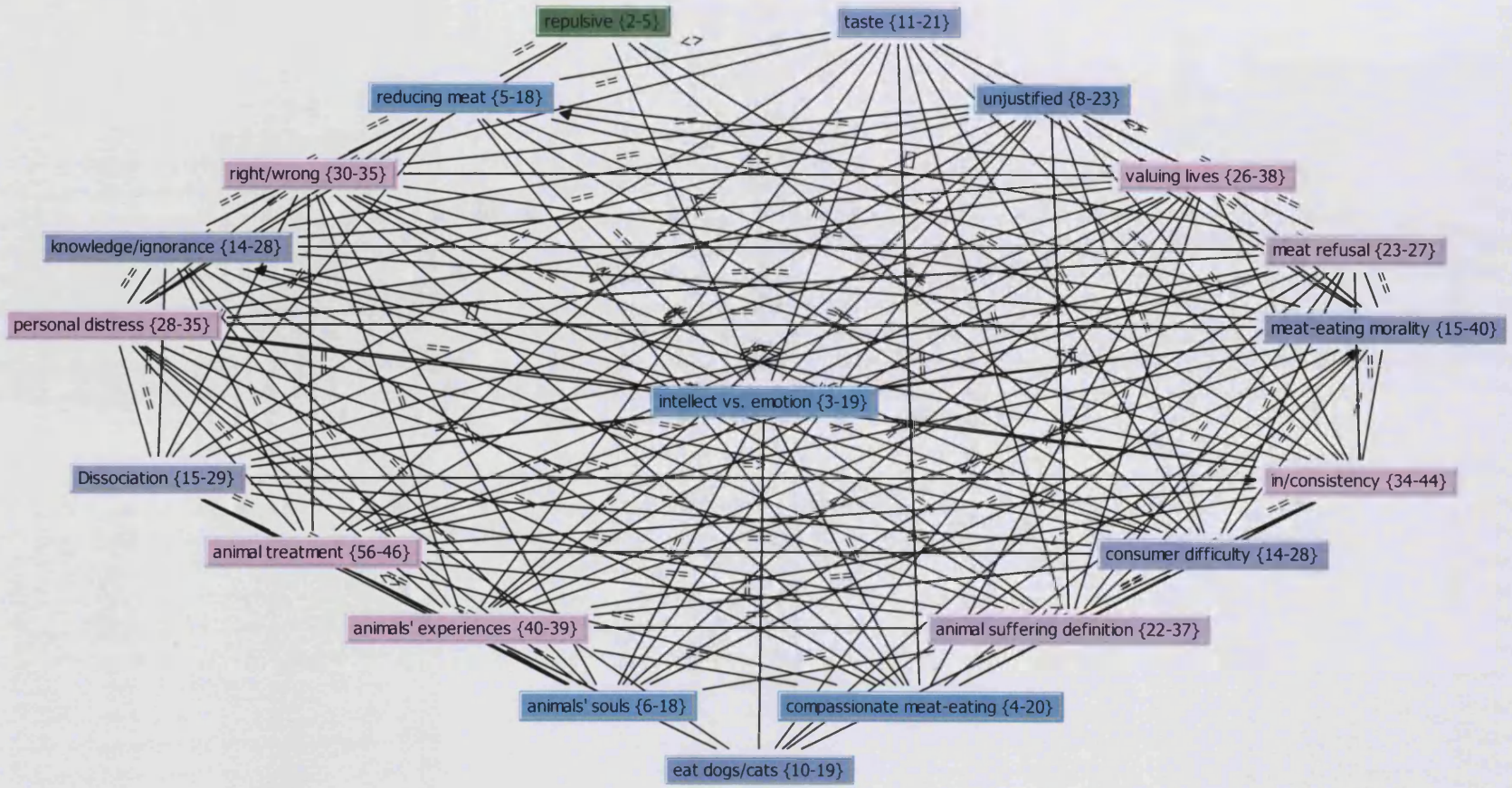
Network View on industry demands



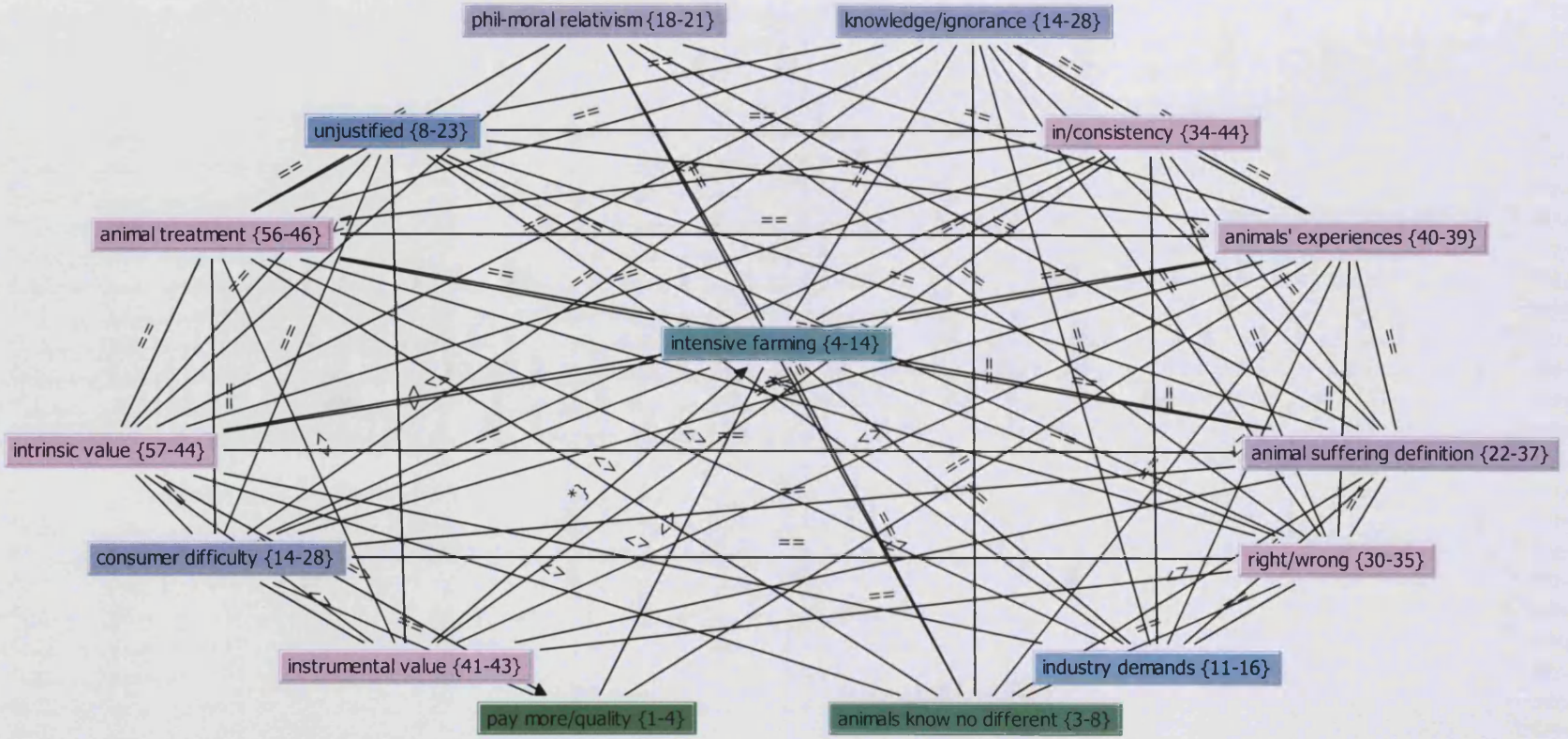
Network View on instrumental qualities



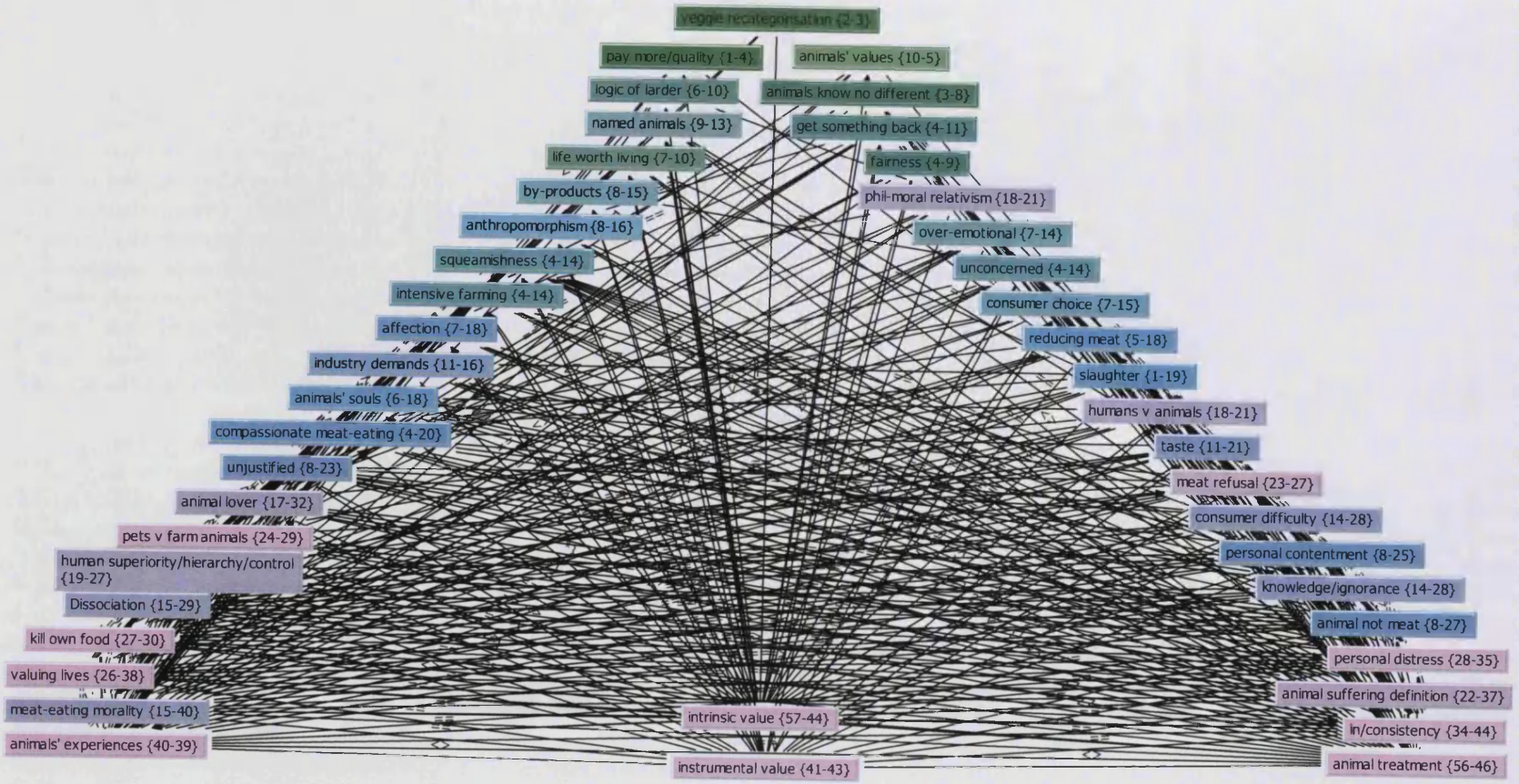
Network View on intellect vs. emotion



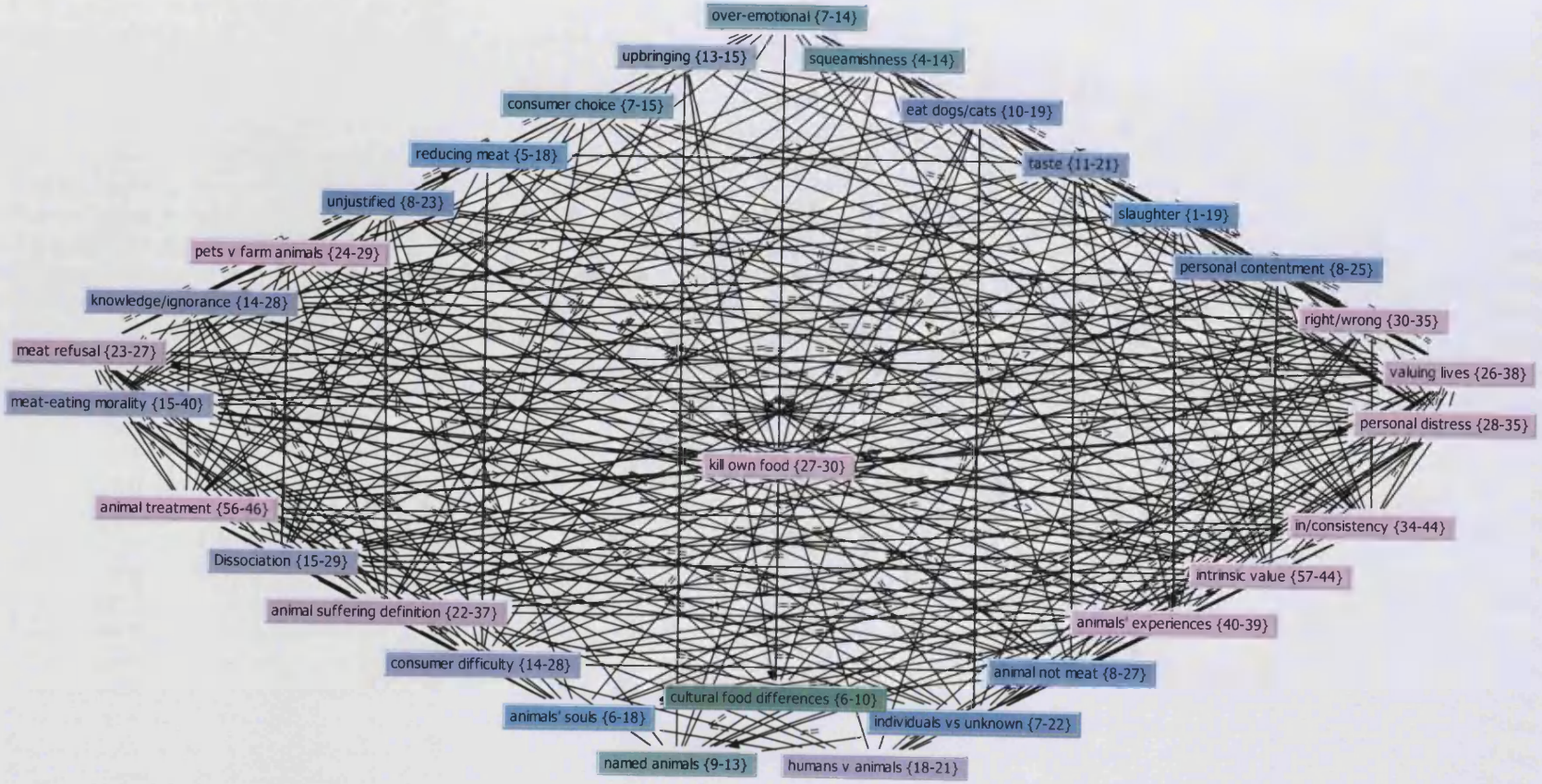
Network View on intensive farming



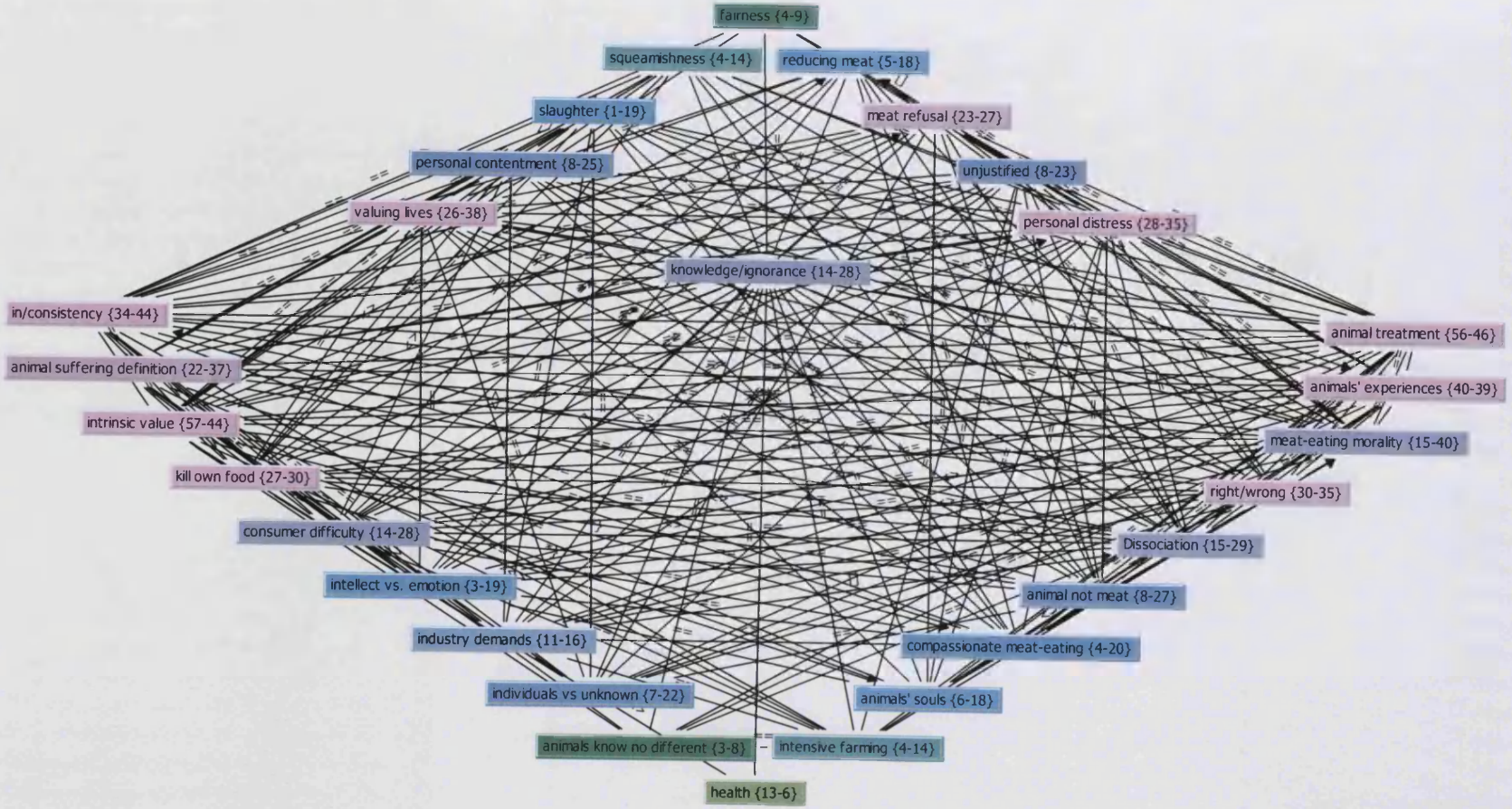
Network View on intrinsic qualities



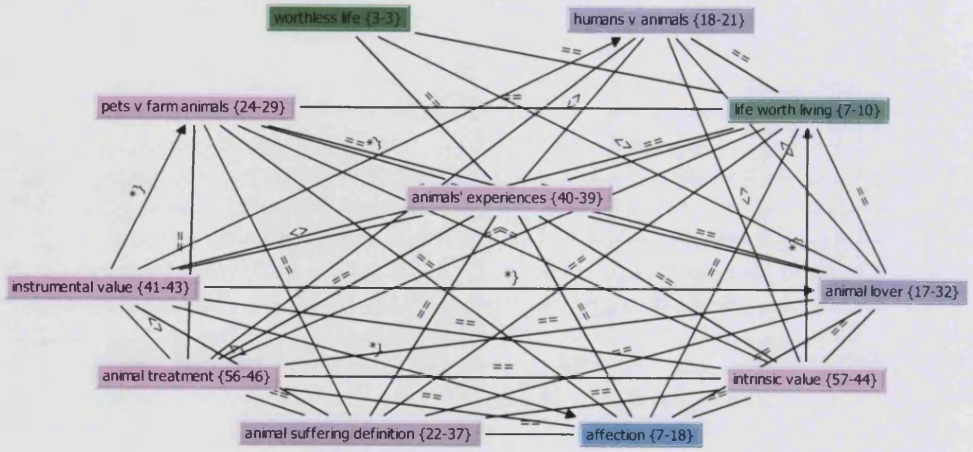
Network View on kill own food



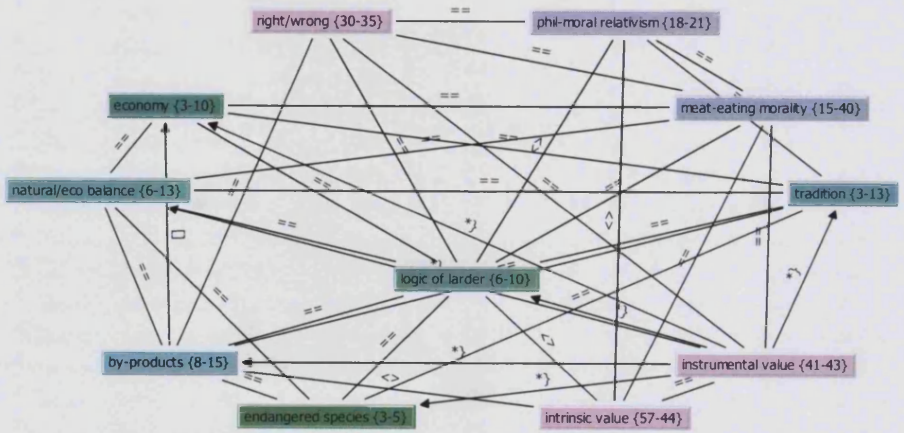
Network View on knowledge/ignorance



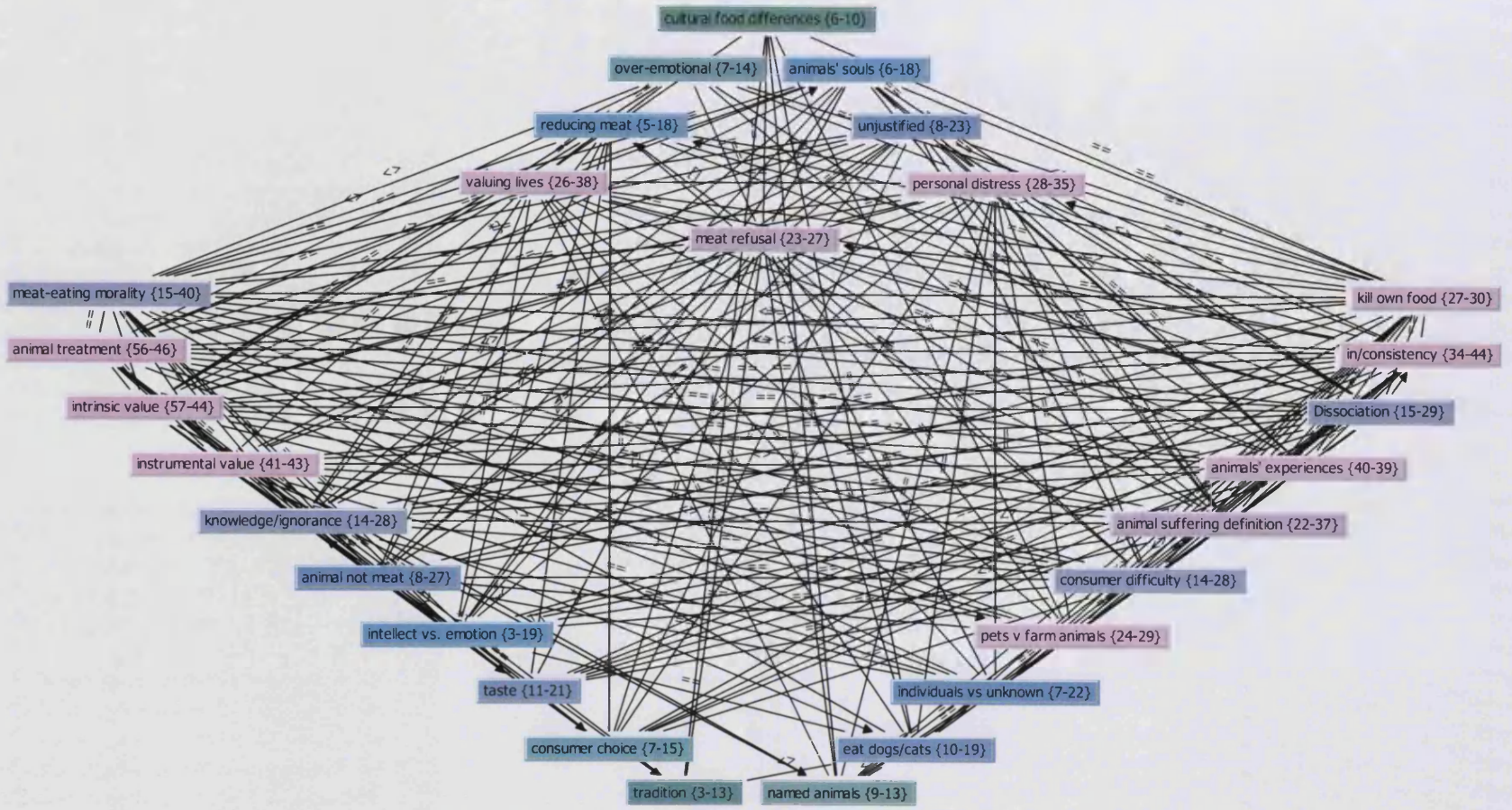
Network View on life worth living



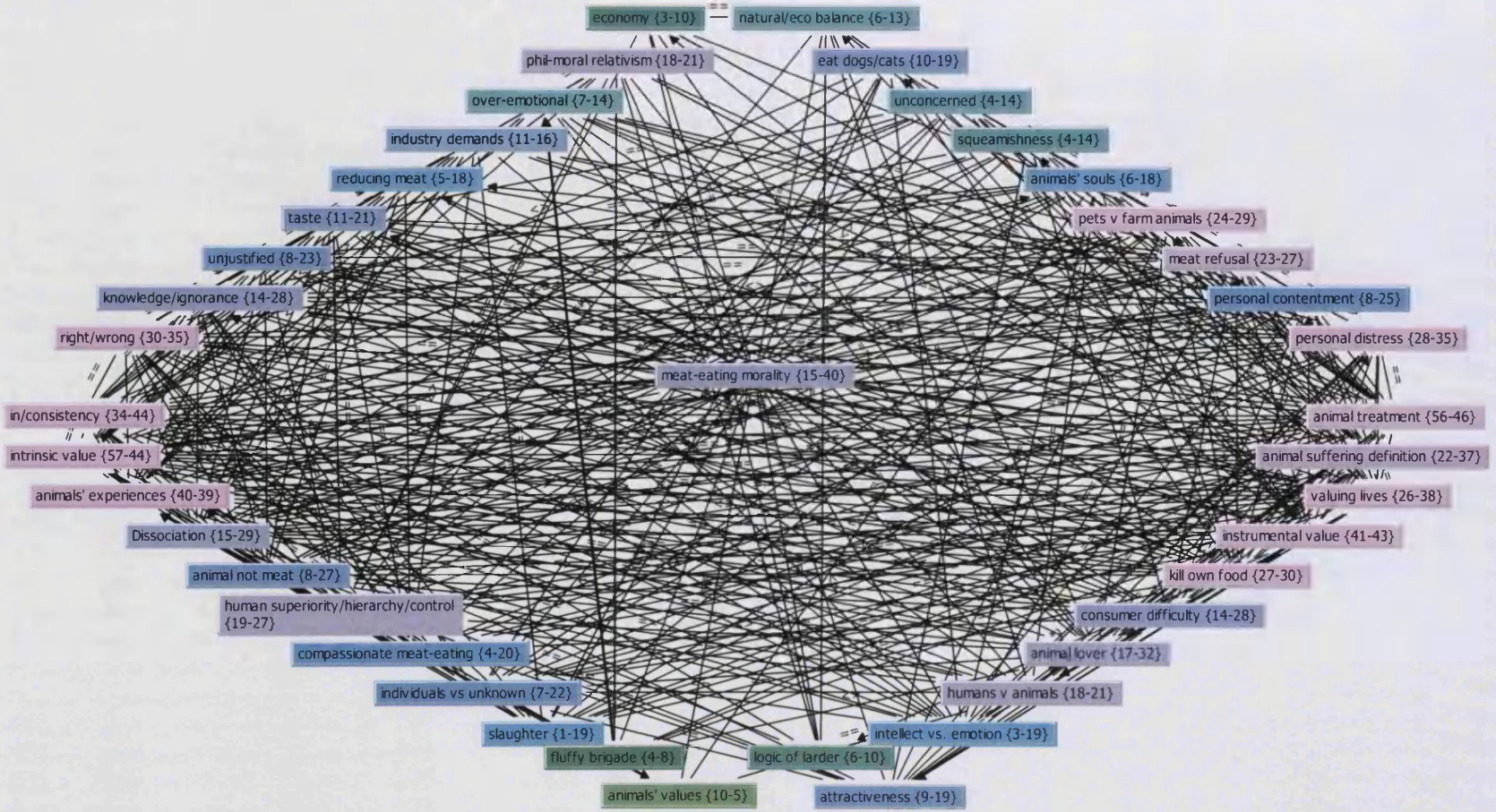
Network View on logic of larder



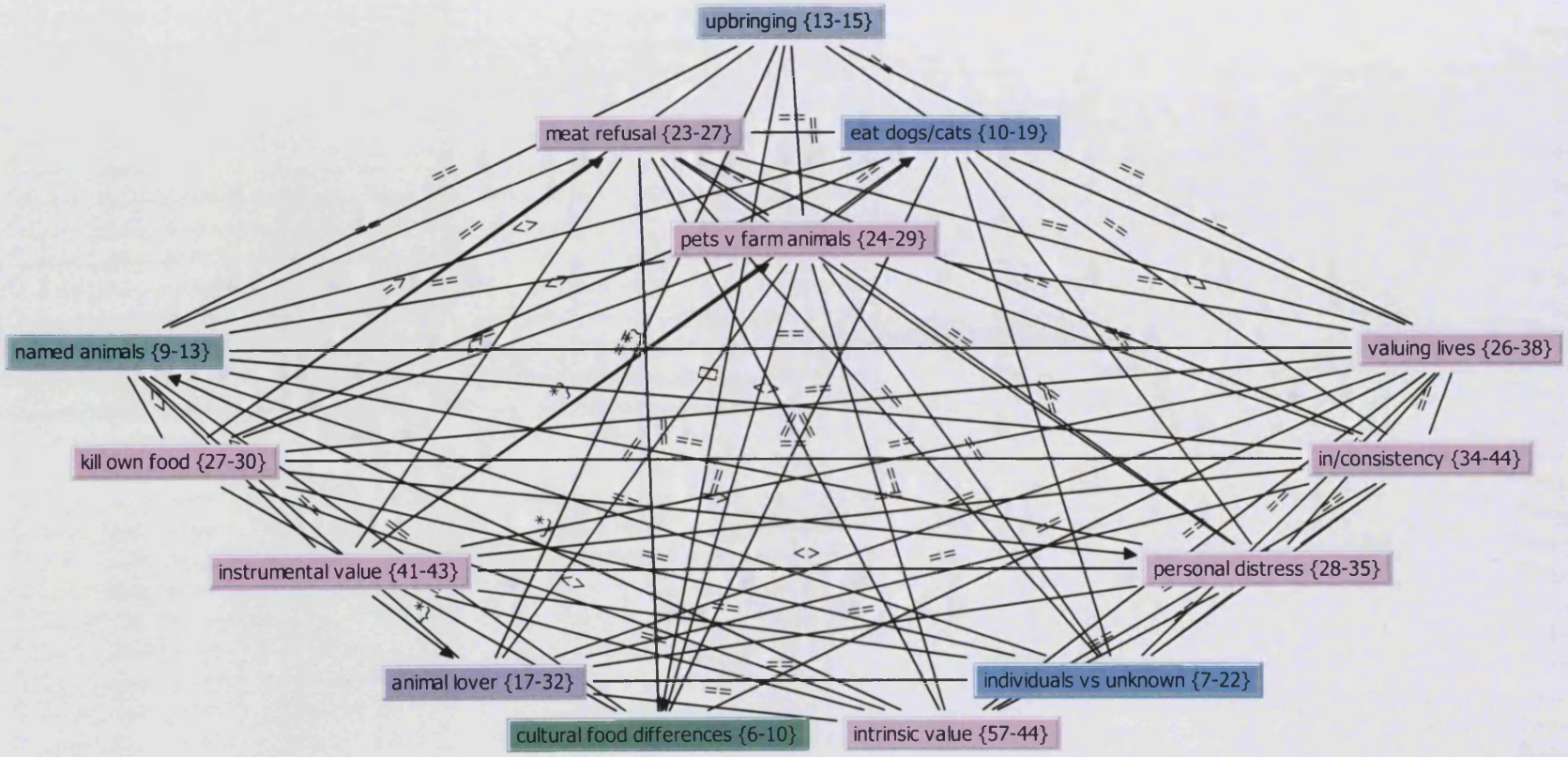
Network View on meat refusal



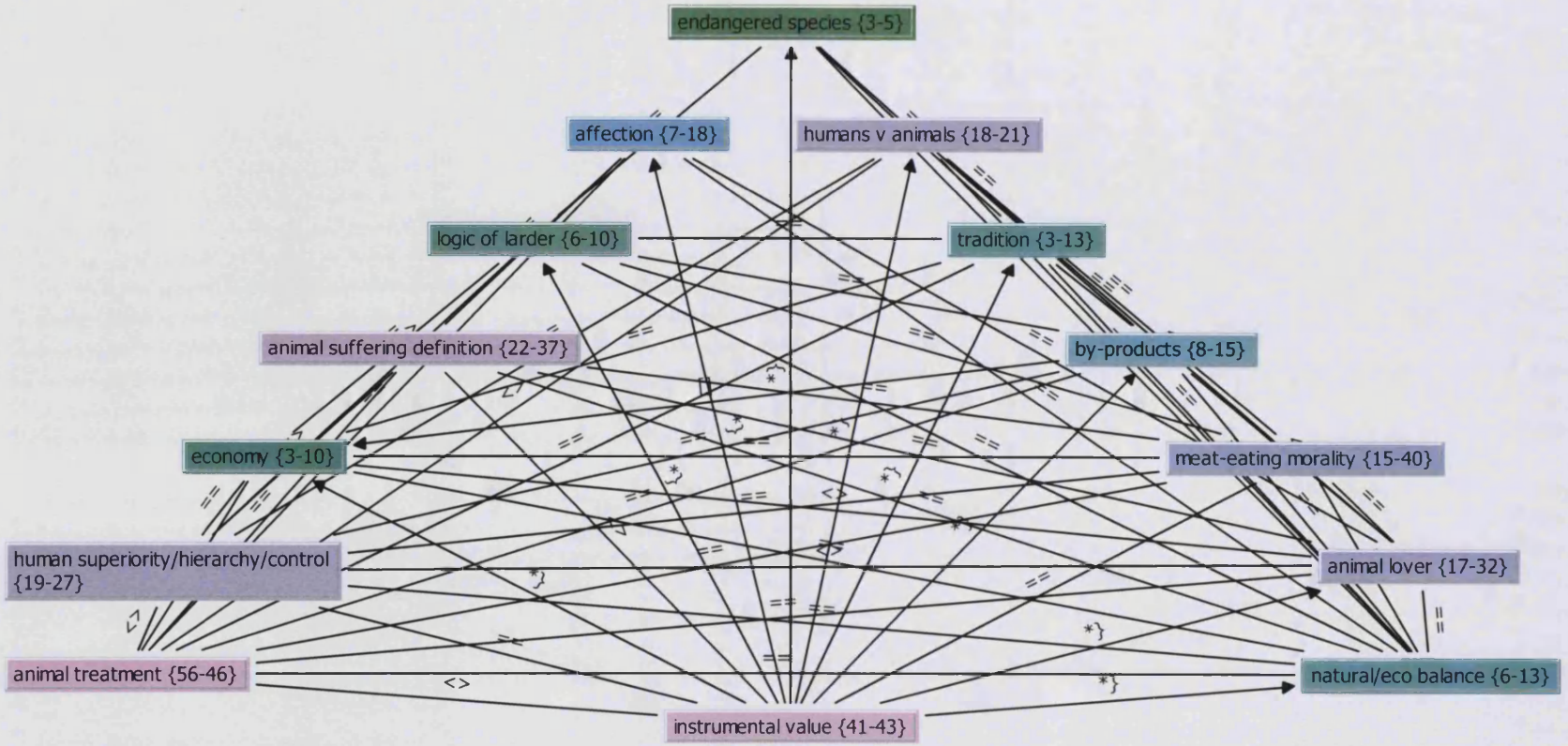
Network View on meat-eating morality



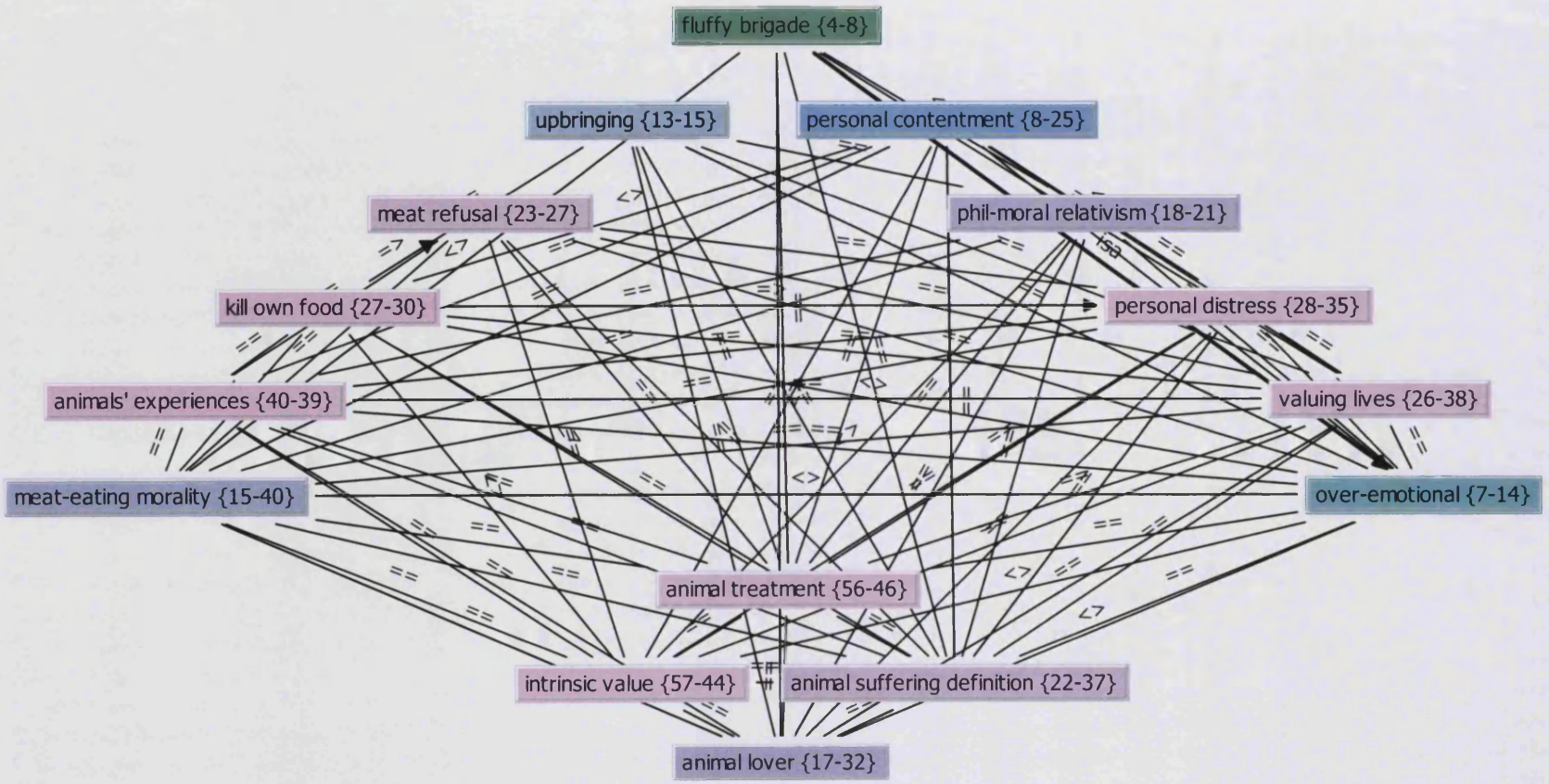
Network View on named animals



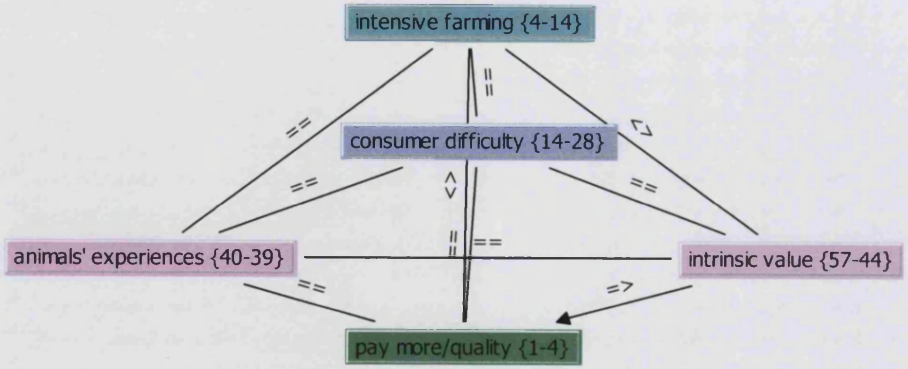
Network View on natural/eco balance



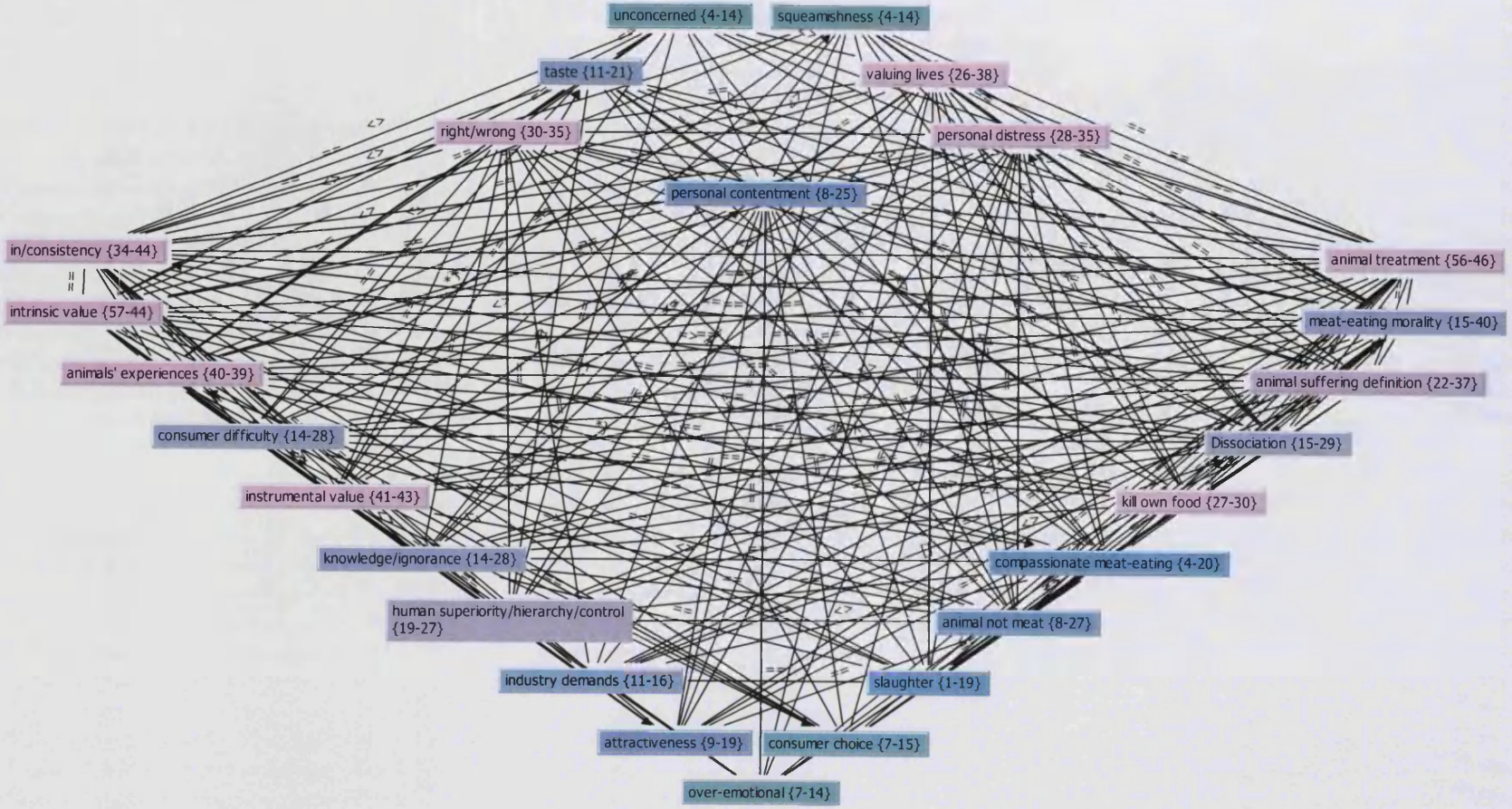
Network View on over-emotional



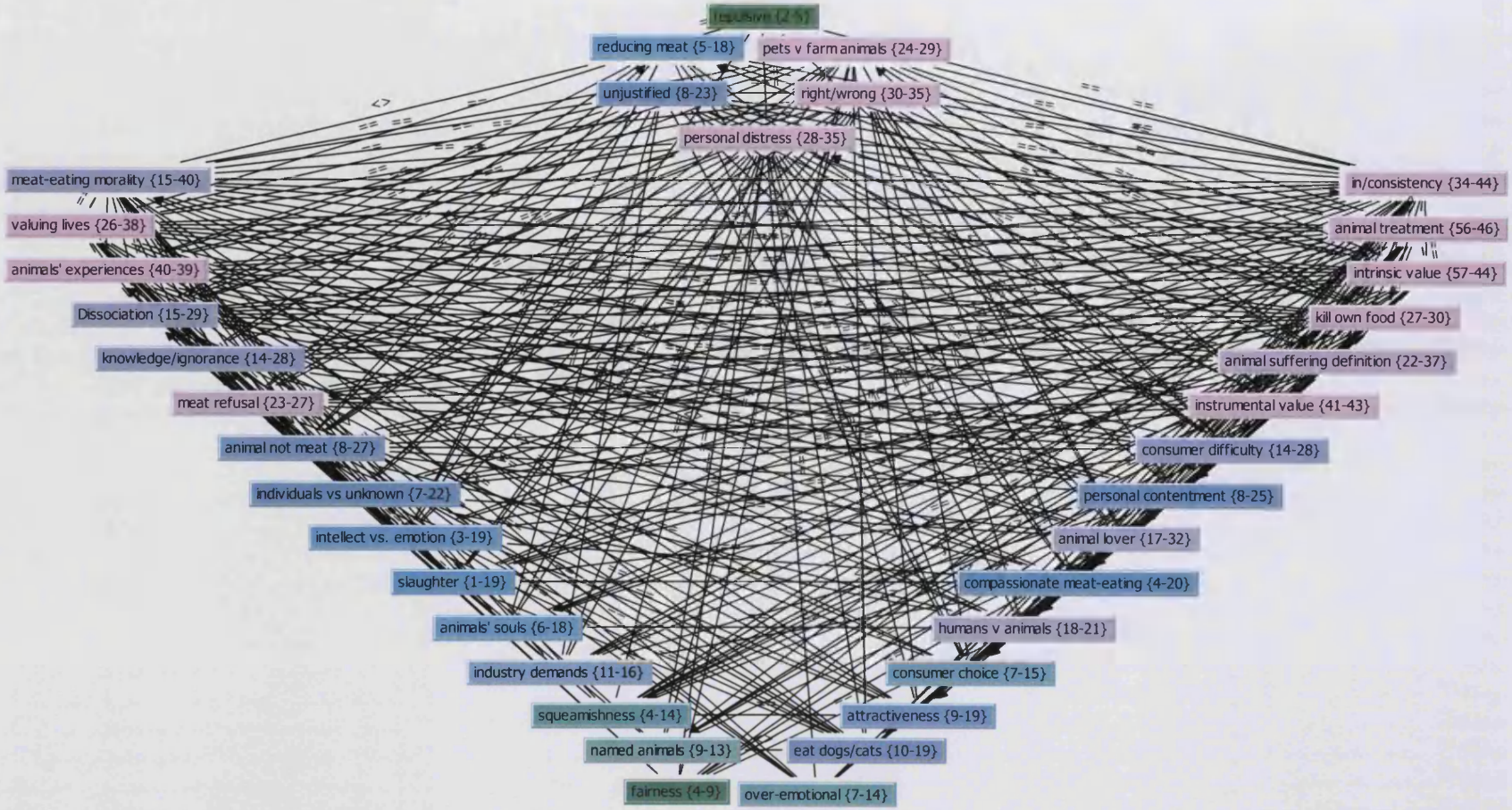
Network View on pay more/quality



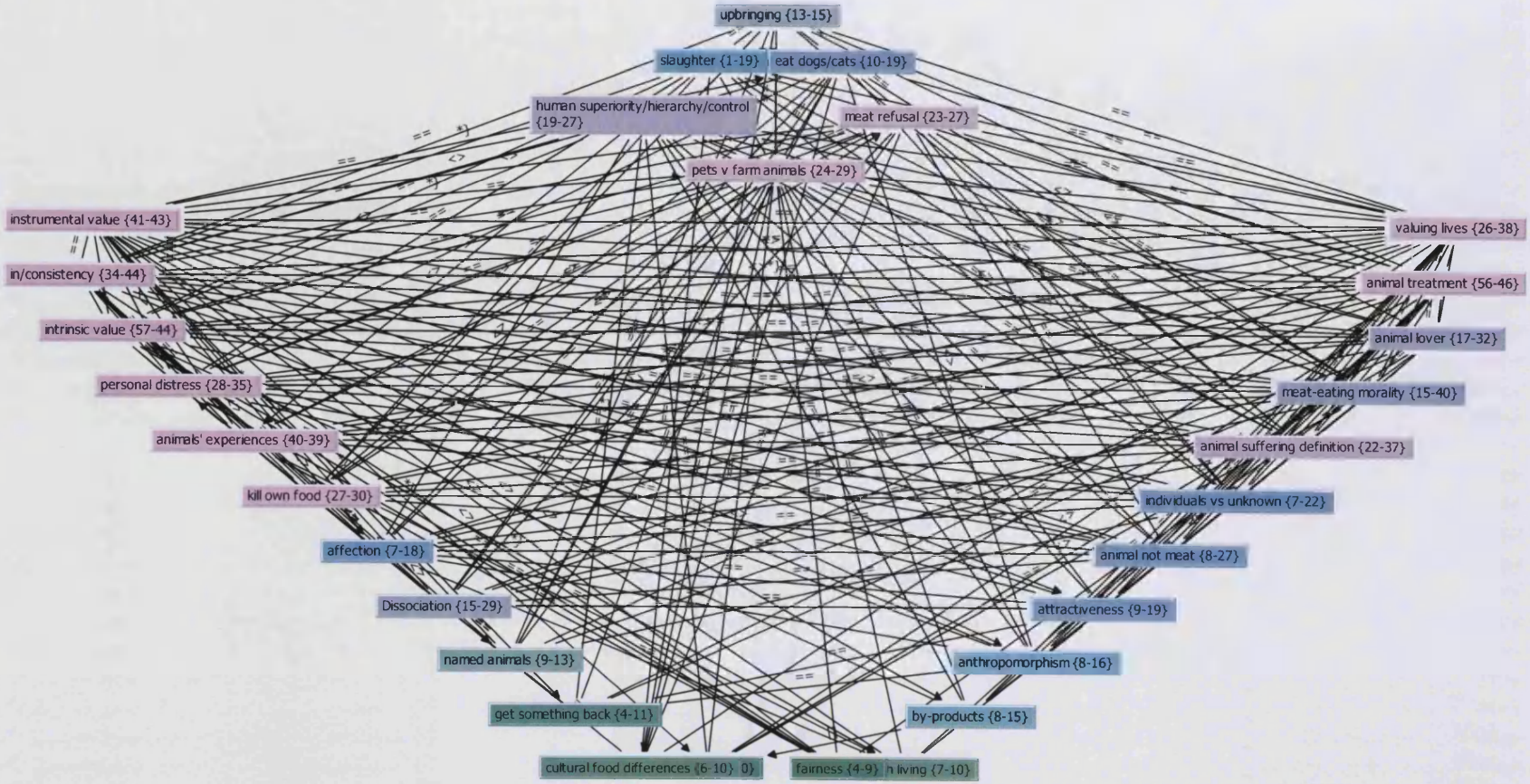
Network View on personal contentment



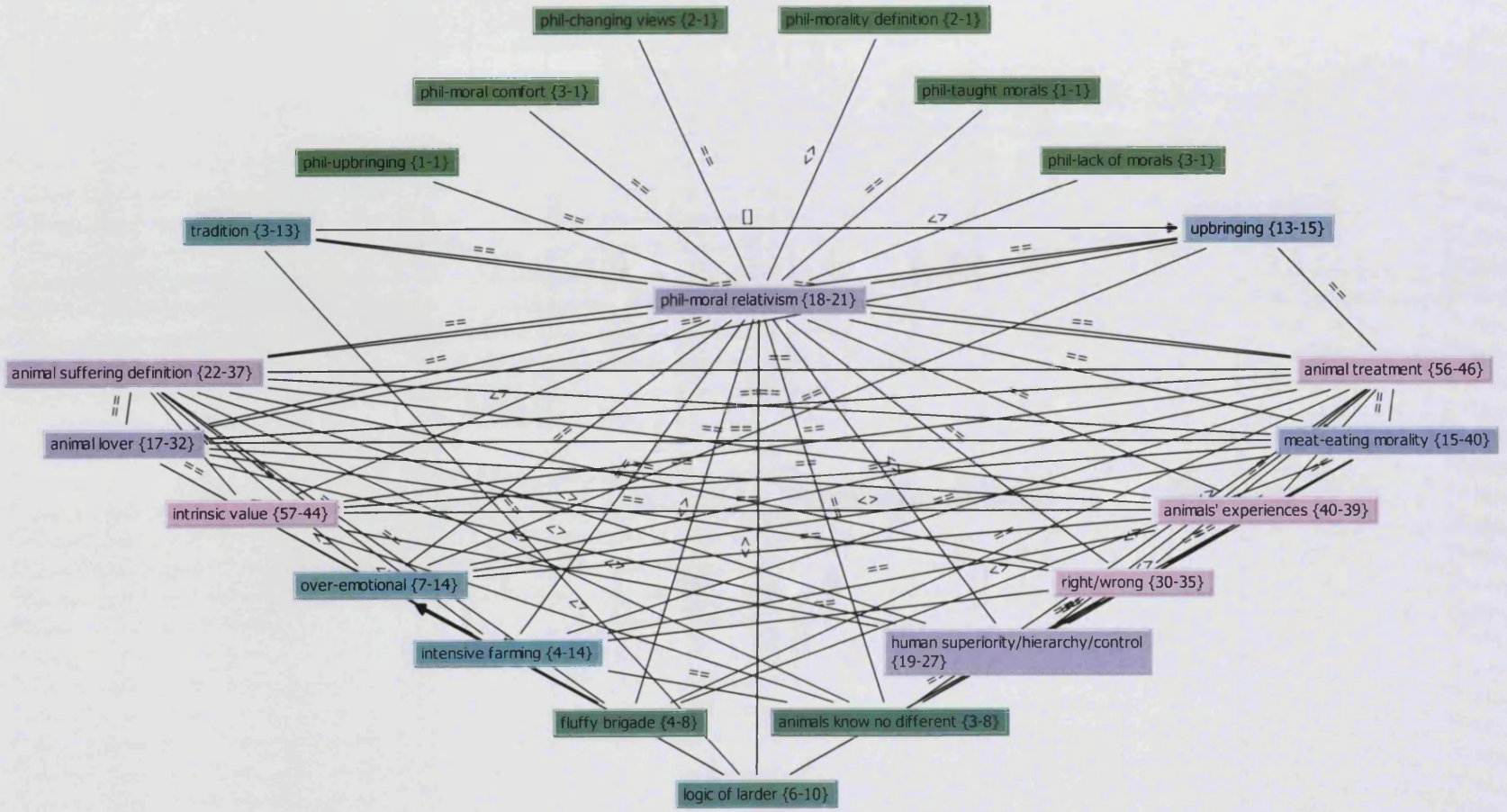
Network View on personal distress



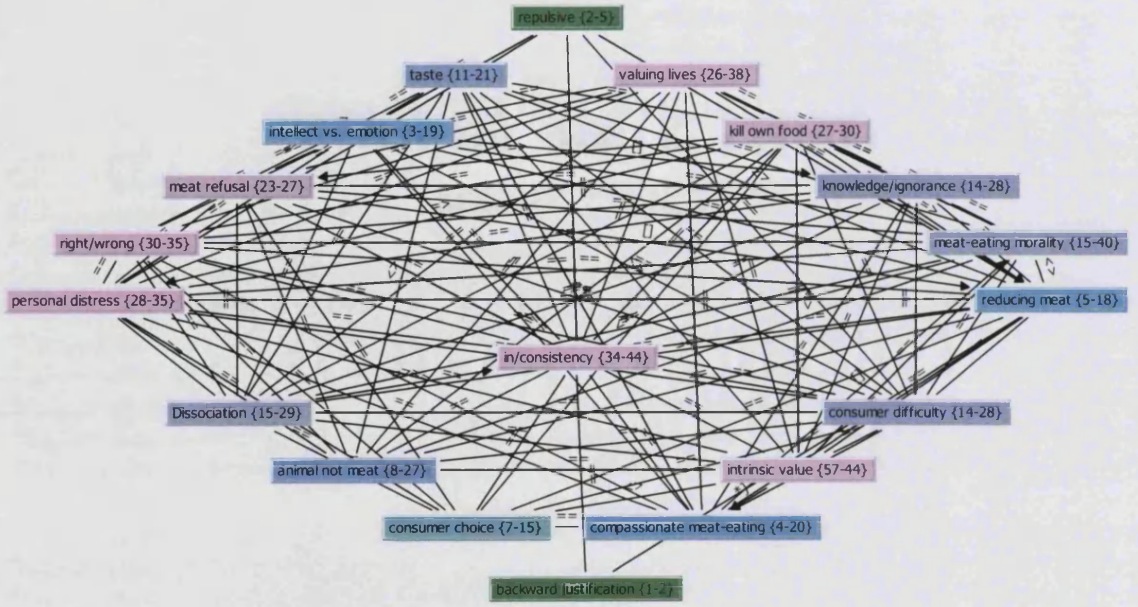
Network View on pets v farm animals



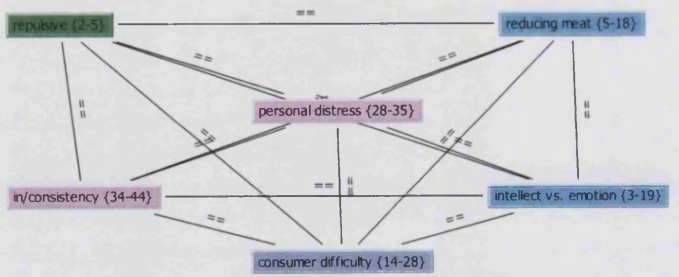
Network View on phil-moral relativism



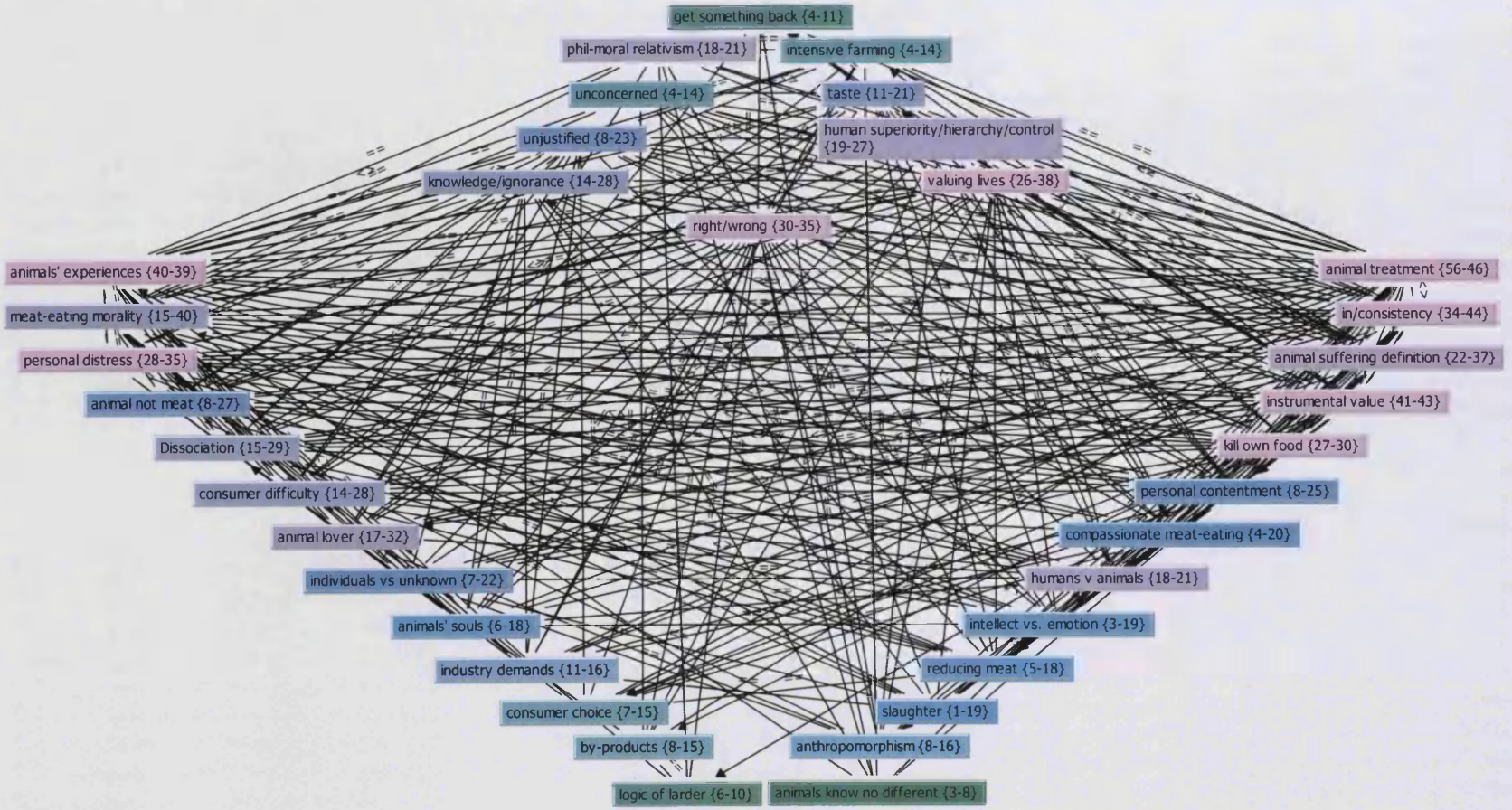
Network View on reducing meat



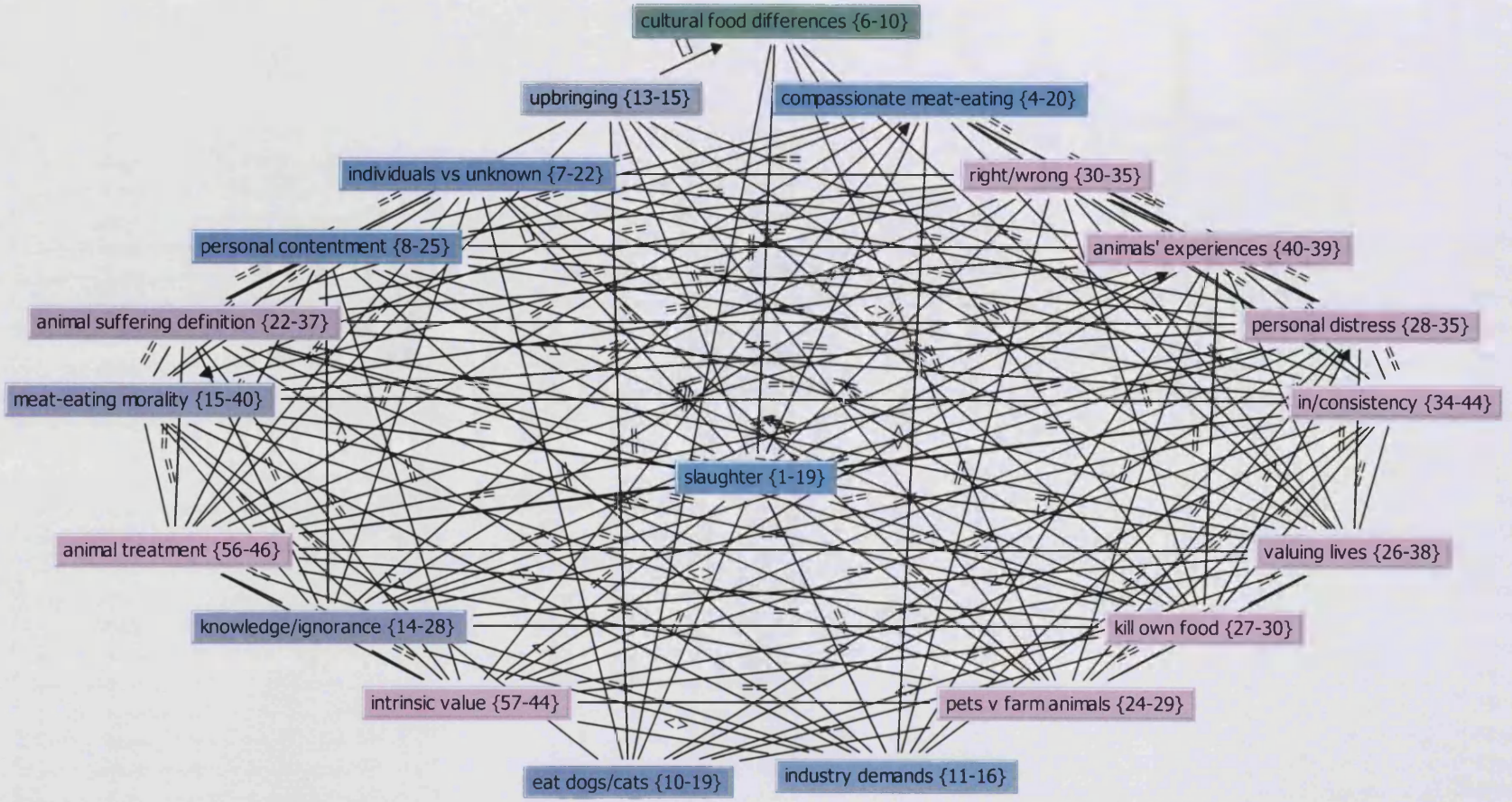
Network View on repulsive



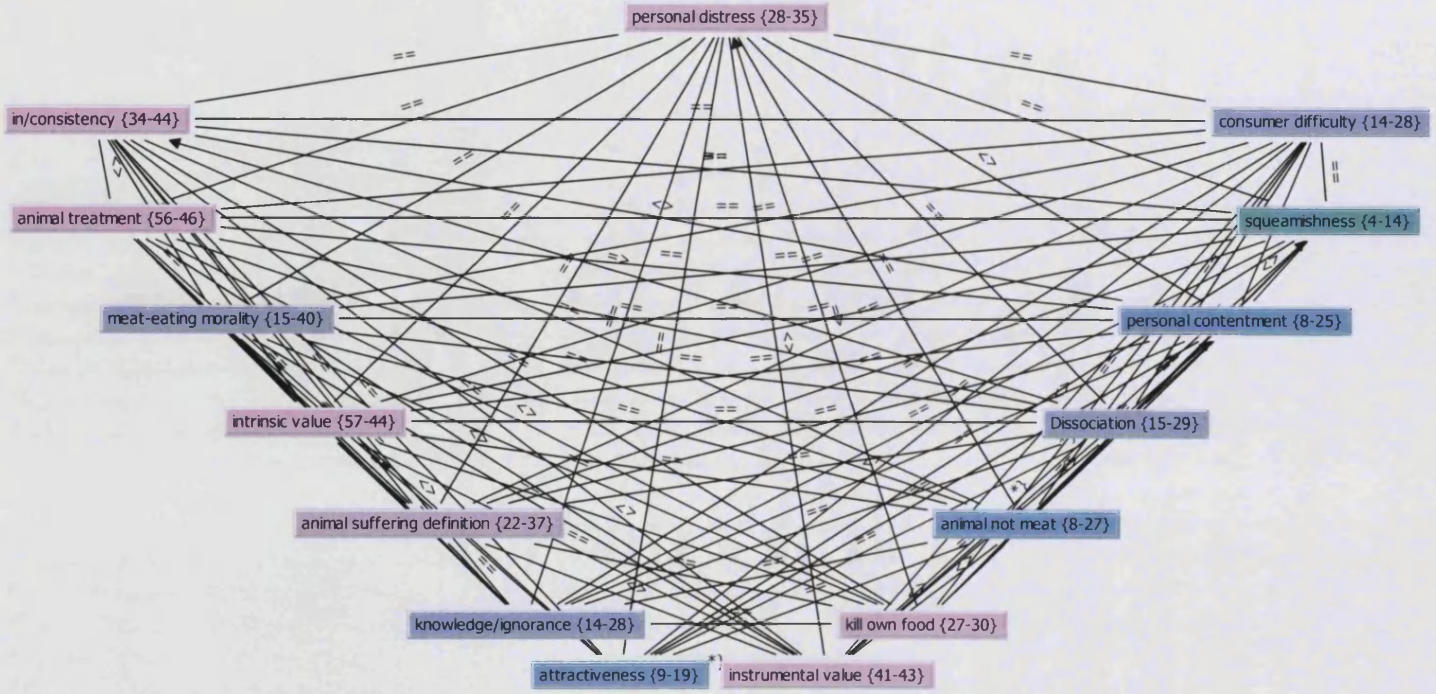
Network View on right/wrong



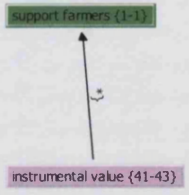
Network View on slaughter



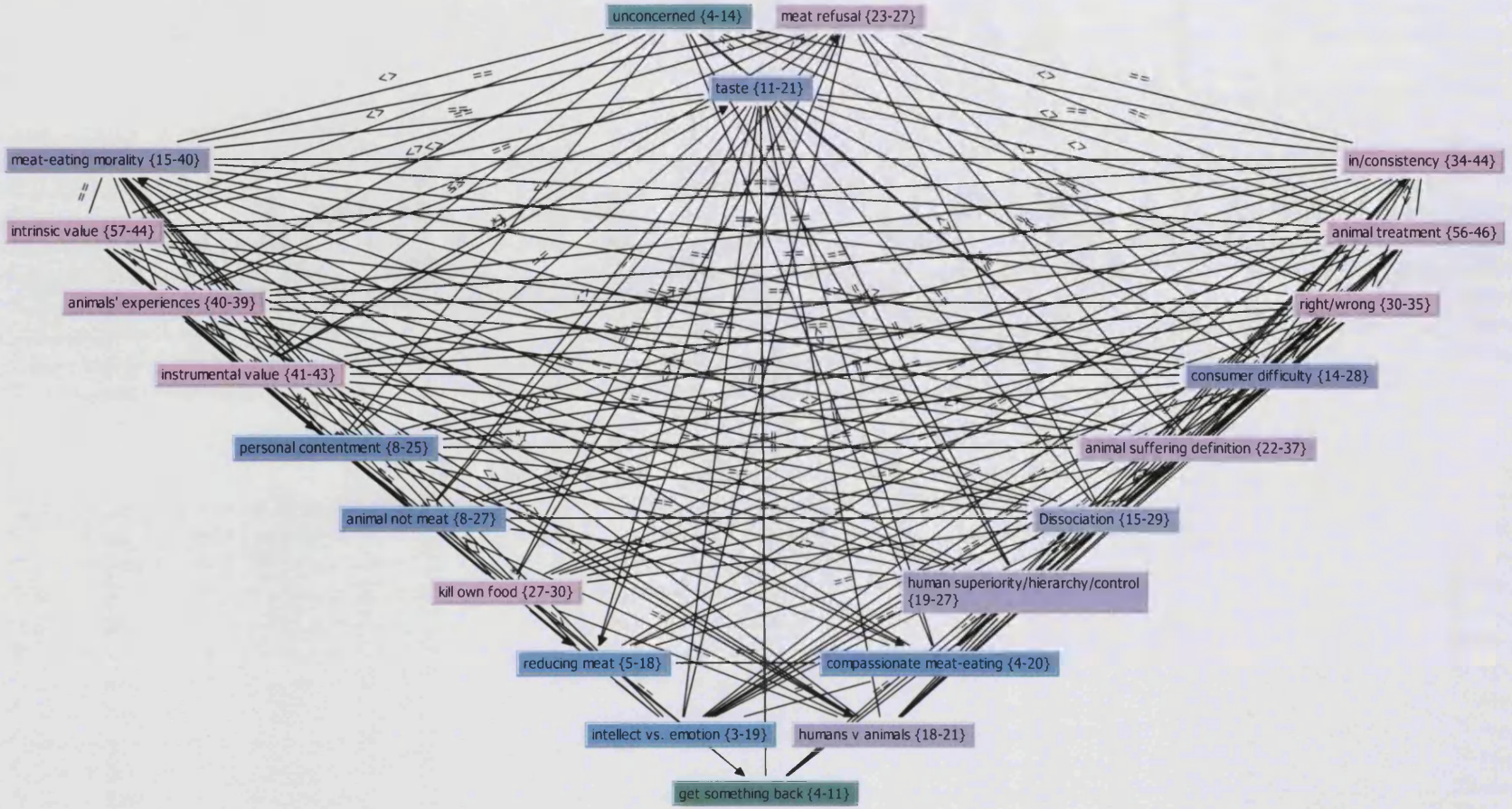
Network View on squeamishness



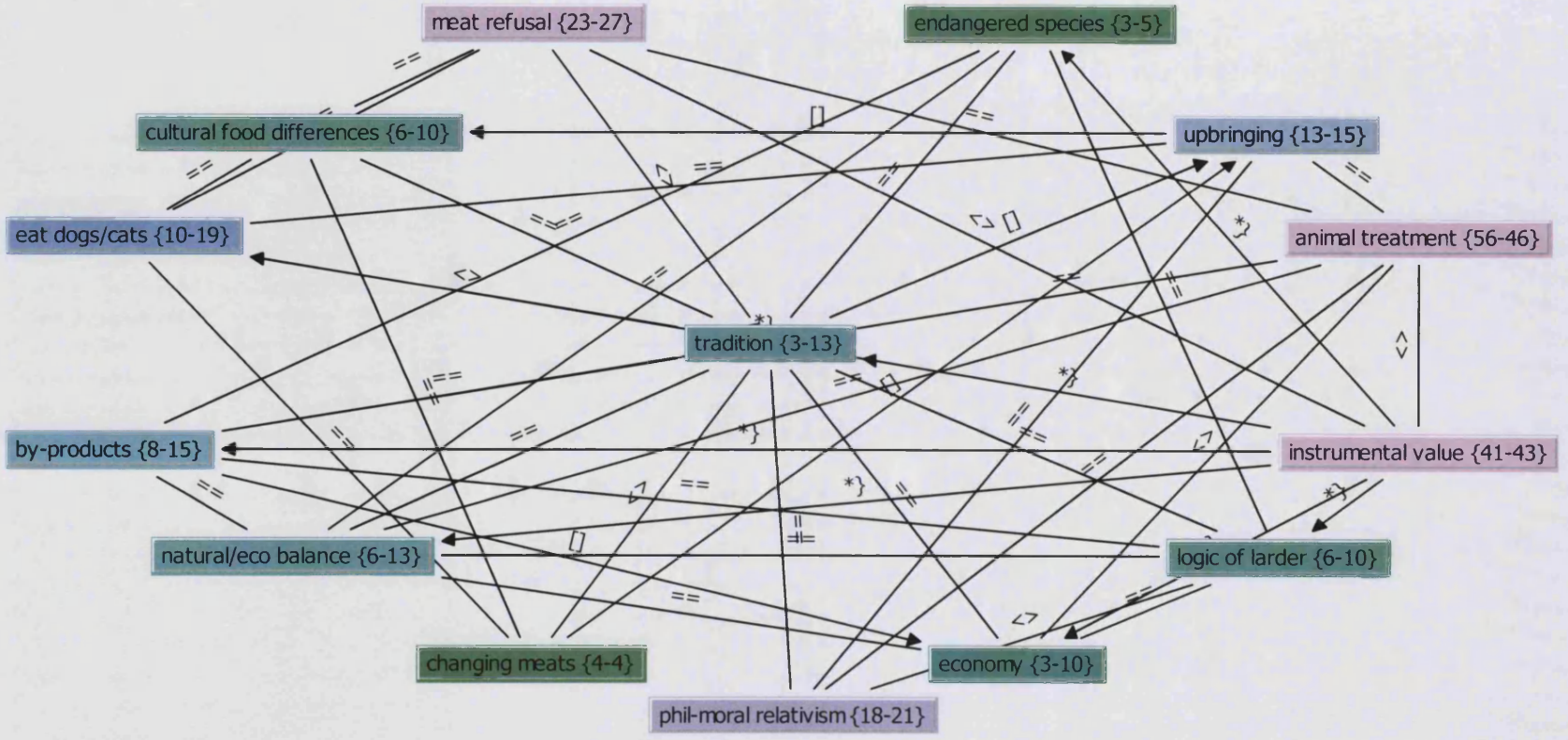
Network View on support farmers



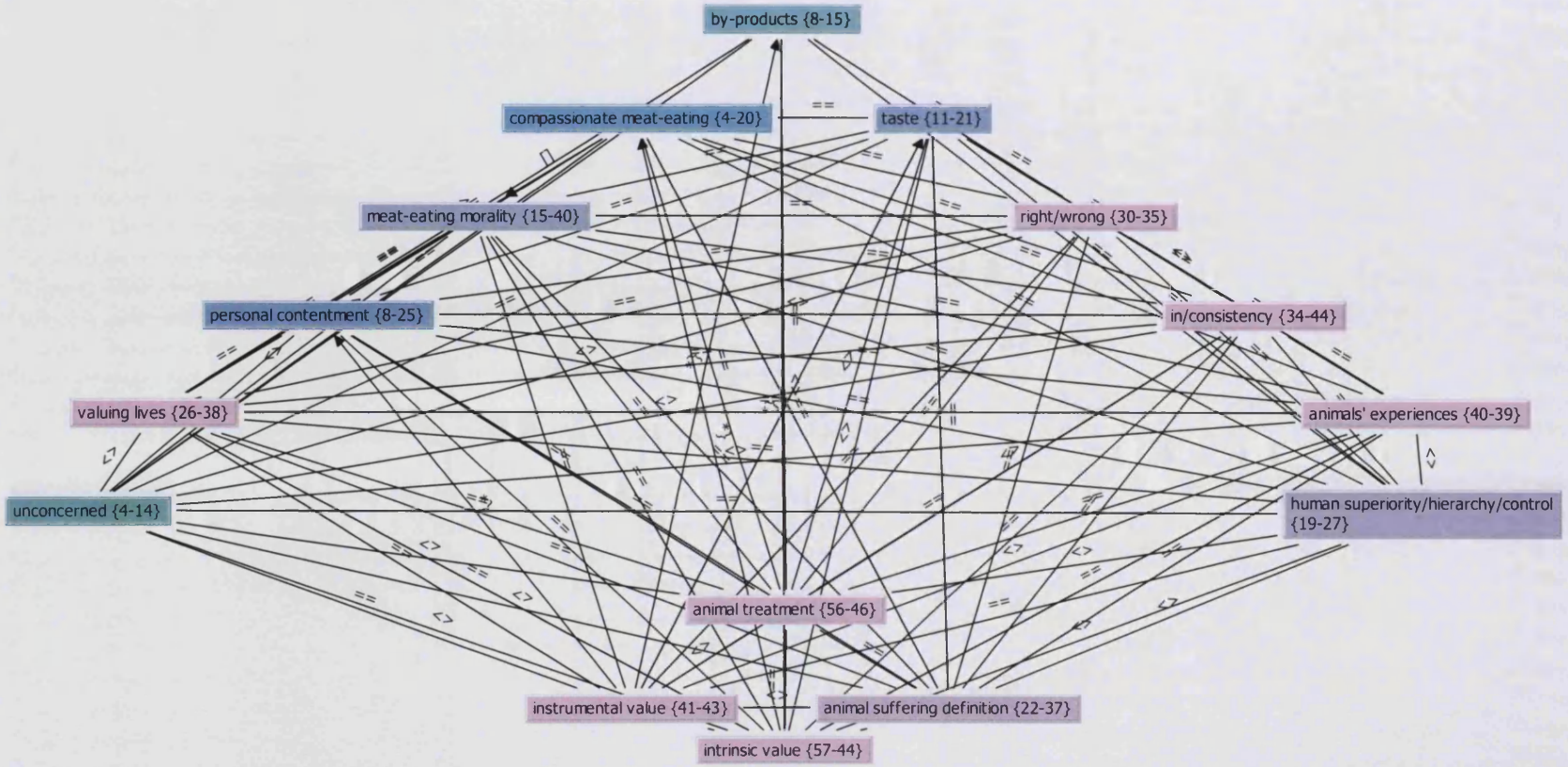
Network View on taste



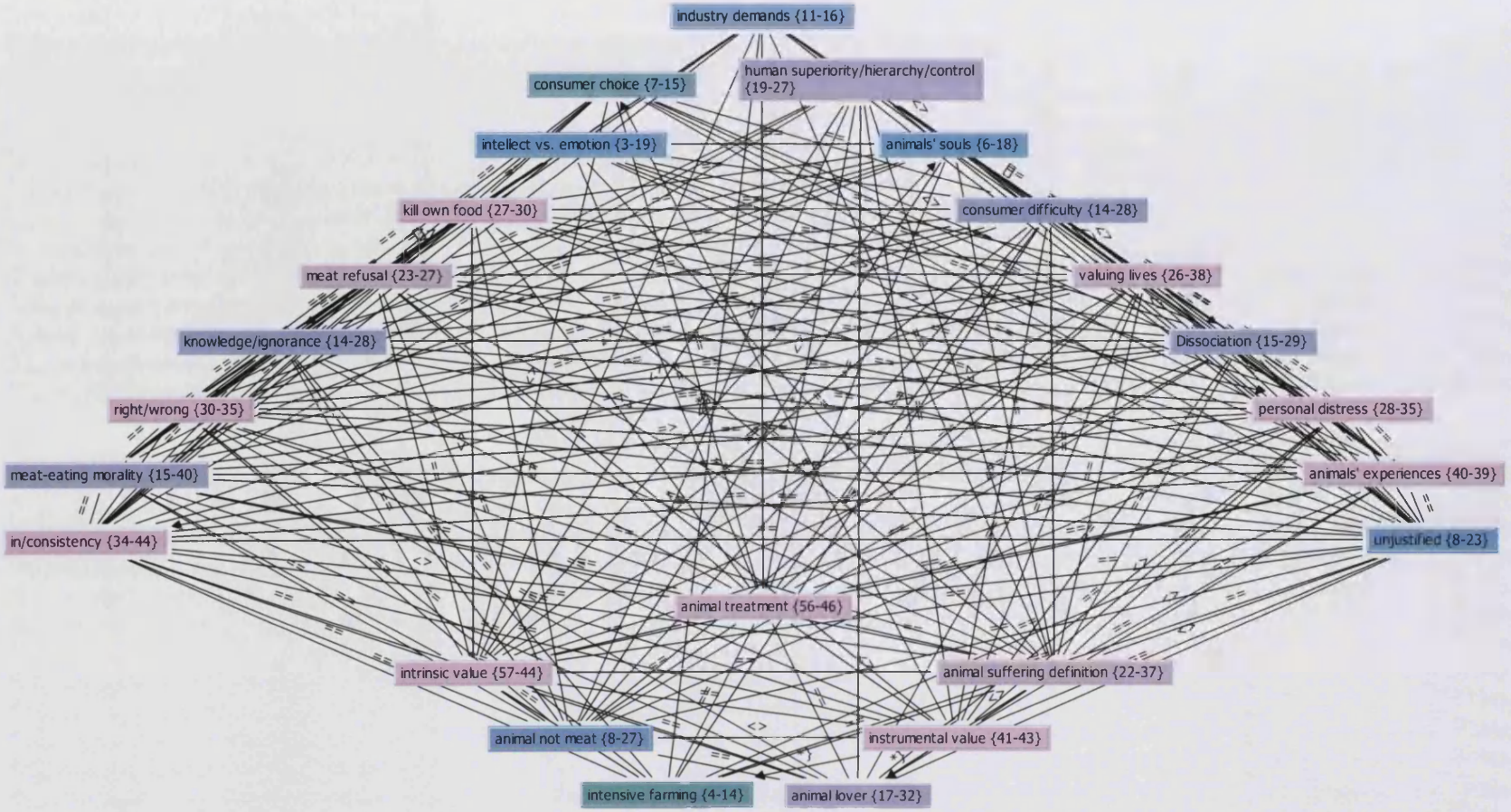
Network View on tradition



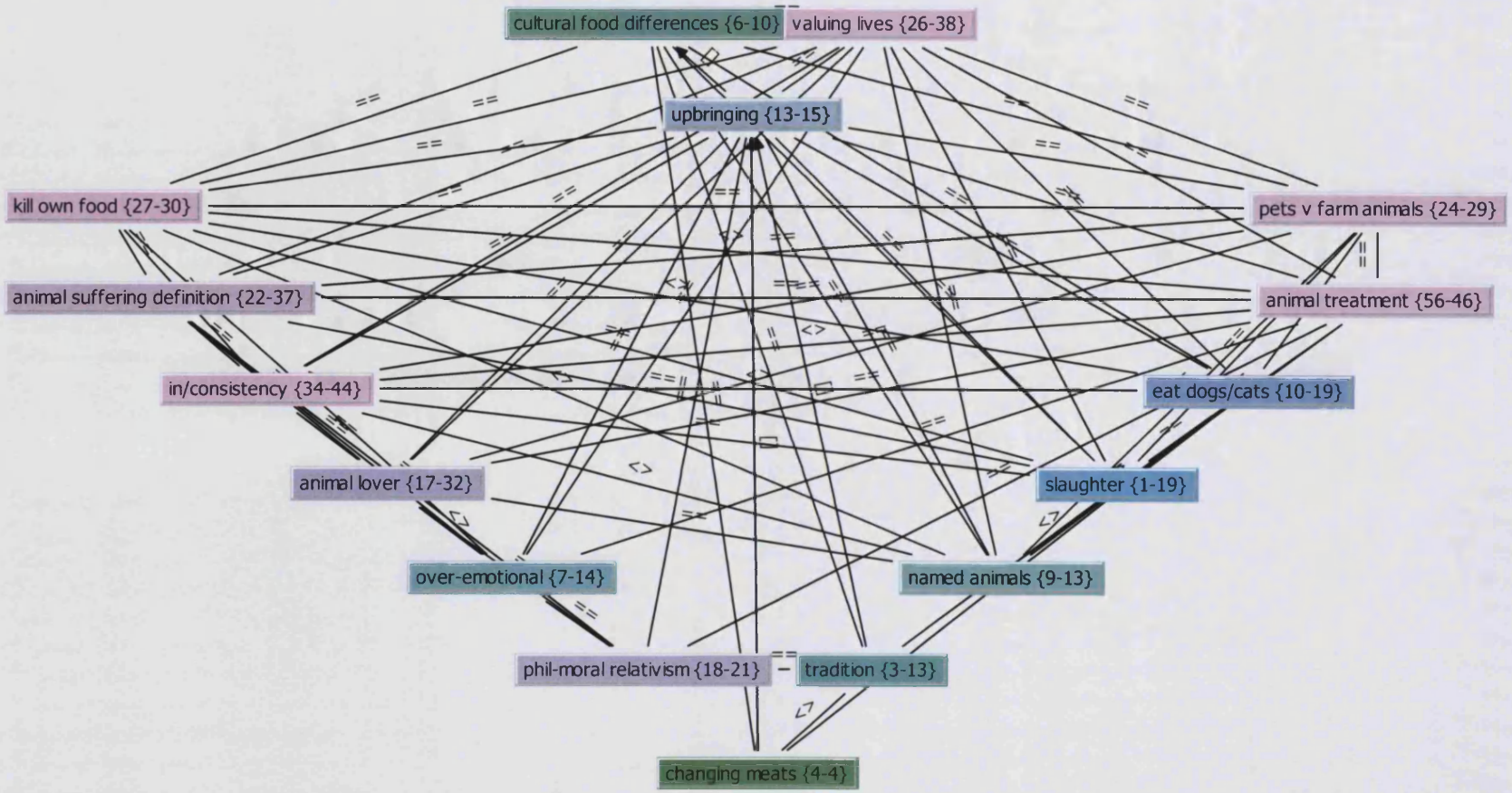
Network View on unconcerned



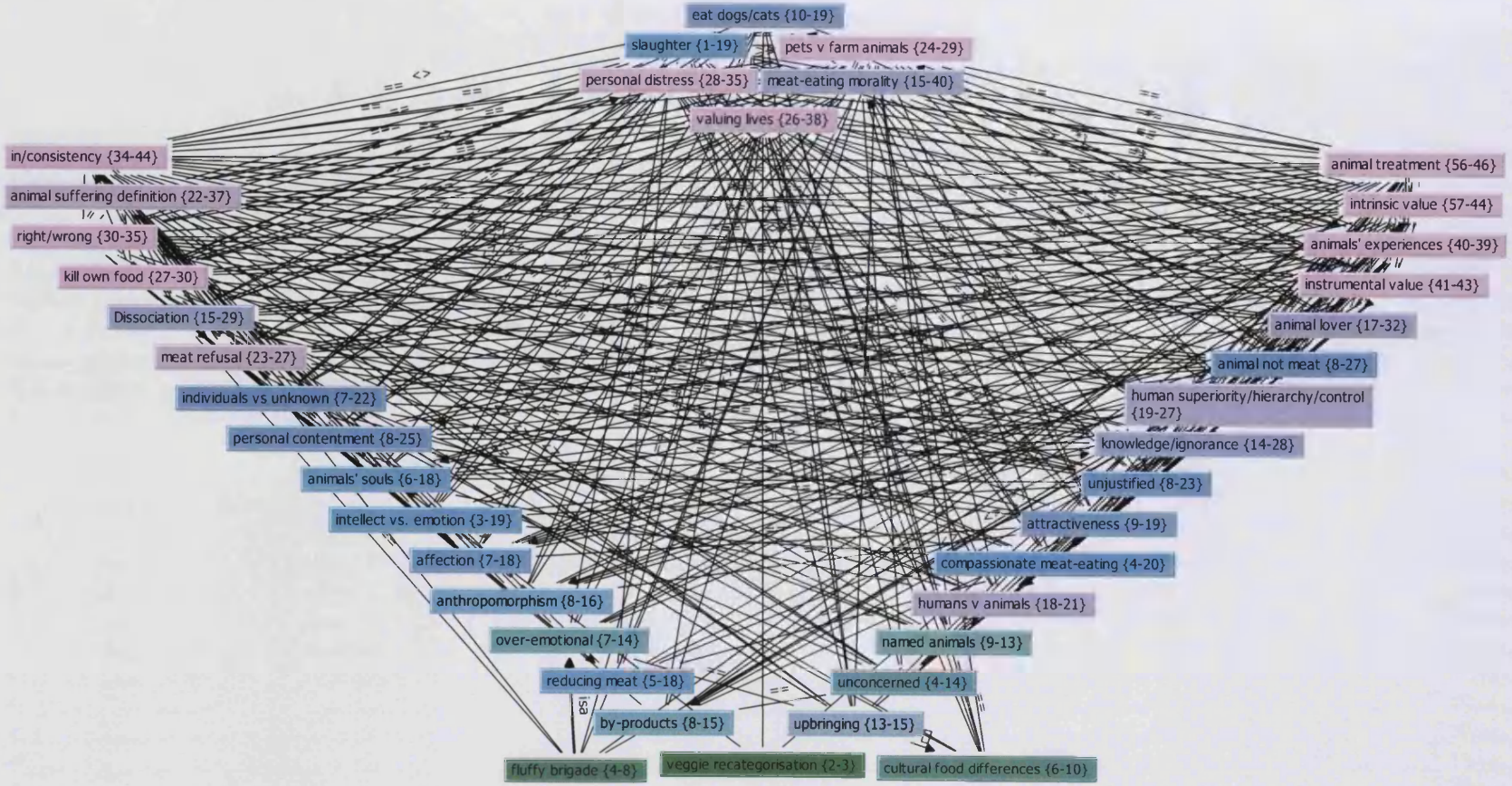
Network View on unjustified



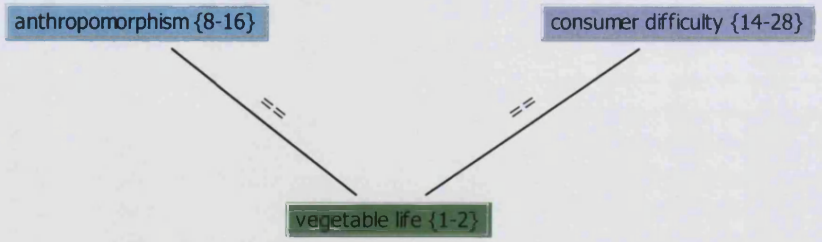
Network View on upbringing



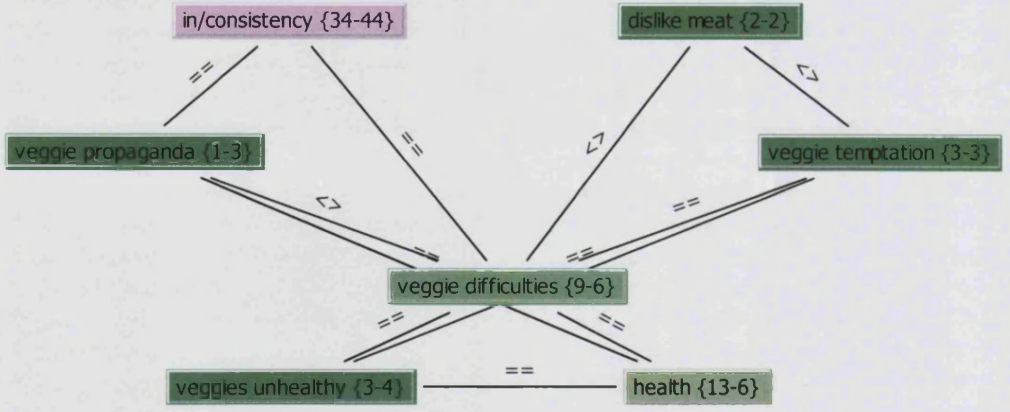
Network View on valuing lives



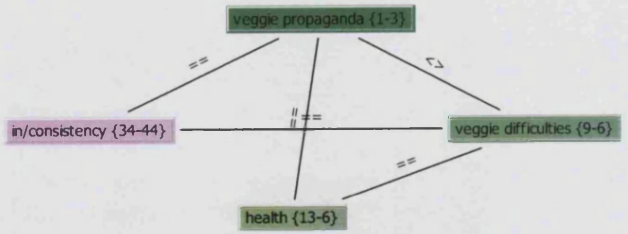
Network View on vegetable life



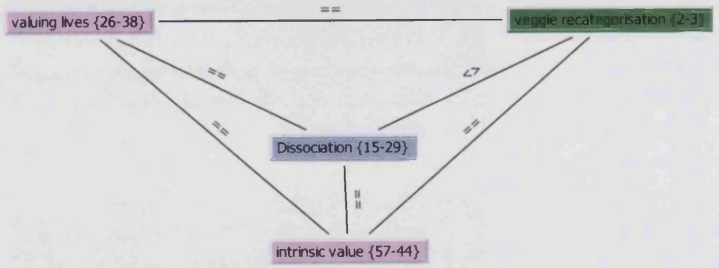
Network View on veggie difficulties



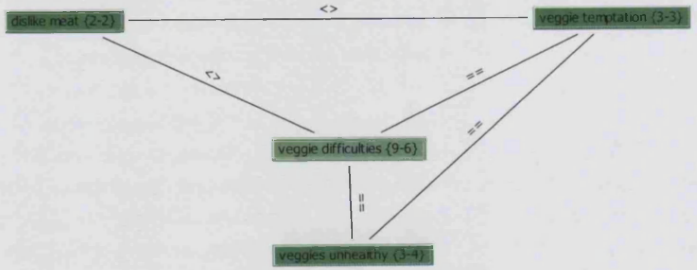
Network View on veggie propaganda



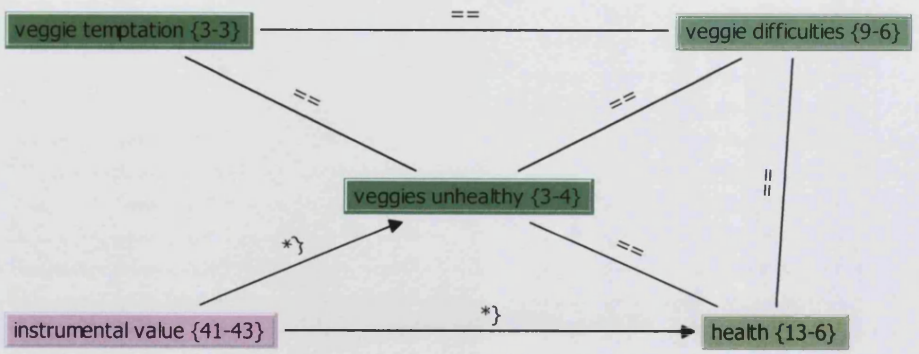
Network View on veggie recategorisation



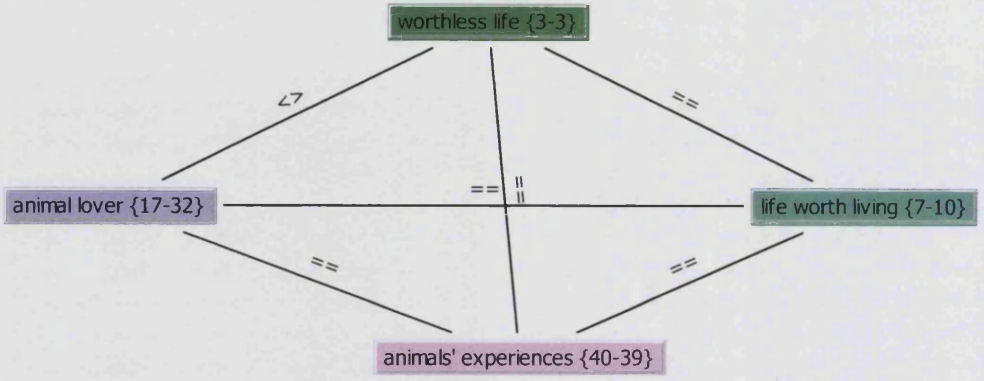
Network View on veggie temptation



Network View on veggies unhealthy



Network View on worthless life



APPENDIX D

Quantitative research guide

Participant reference no: ☐

Consent guide:

Following are **two short questionnaires** and an **experiment**.

Your identity as a research participant is anonymous, and therefore confidential. Some people may find some pictures distressing. You are free to discontinue participation at any time: just inform the researcher.

The questionnaires are randomly selected from a range of different projects. They have nothing to do with each other, but are being run together to ease the burden of recruiting many research participants, like yourself.

Because the questionnaires are randomly selected, some people may feel that their answers in one questionnaire are contradictory to their answers in a different questionnaire. This may not happen to you, but if it does then please don't worry: it's normal because people are complex. Please try not to let the first questionnaire influence your responses to the second questionnaire because this could invalidate the research.

Please don't return to change answers that you have already completed. Don't spend ages trying to answer 'correctly': there are no right or wrong answers. The most important thing is that you answer as honestly as possible.

Just respond with your 'gut reactions', working as quickly as you find comfortable. The research isn't meant to be taxing (in fact, some people have even enjoyed it)!

Thank you.

If you would like to proceed with the research please turn to the next page and follow the instructions ...

Questionnaire number 6:

Question 1—about your general views

	Yes	No
Do you think that cows have any importance at all? (please tick)	☐	☐

If you answered 'yes', please answer Question 2 below. If you answered 'no', please turn to the next page.

Question 2—exploring your views

"I think that cows are important because:" (please tick one box in every row)

	Strongly disagree					Neither				Strongly agree
I value cows' appearance	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I value cows' company and affection towards me	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I value cows' contribution to my environment, making up a range of animals that ensure the countryside's future	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I value cows' monetary value	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I value rare breeds of cows	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I value cows as status symbols	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I value the products that can be made from cows' bodies	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I think cows' souls, or 'essences', have value	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I think cows' sentience, or ability to experience life, has value	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I think cows' intelligence has value	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I think cows' abilities have value	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Please turn to the next page ...

Questionnaire number 6 (continued):

Question 3—about your general views

Do you think that pigs have any importance at all? (please tick)	Yes ☐	No ☐

If you answered 'yes', please answer Question 4 below. If you answered 'no', please turn to the next page.

Question 4—exploring your views

"I think that pigs are important because:" (please tick one box in every row)

	Strongly disagree					Neither				Strongly agree
I value pigs' appearance	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I value pigs' company and affection towards me	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I value pigs' contribution to my environment, making up a range of animals that ensure the countryside's future	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I value pigs' monetary value	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I value rare breeds of pigs	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I value pigs as status symbols	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I value the products that can be made from pigs' bodies	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I think pigs' souls, or 'essences', have value	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I think pigs' sentience, or ability to experience life, has value	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I think pigs' intelligence has value	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I think pigs' abilities have value	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Please turn to the next page ...

Questionnaire number 6 (continued):

Question 5—about your general views

Do you think that sheep have any importance at all? (please tick)	Yes ☐	No ☐

If you answered 'yes', please answer Question 6 below. If you answered 'no', please turn to the next page.

Question 6—exploring your views

"I think that sheep are important because:" (please tick one box in every row)

	Strongly disagree					Neither				Strongly agree
I value sheep's appearance	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I value sheep's company and affection towards me	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I value sheep's contribution to my environment, making up a range of animals that ensure the countryside's future	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I value sheep's monetary value	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I value rare breeds of sheep	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I value sheep as status symbols	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I value the products that can be made from sheep's bodies	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I think sheep's souls, or 'essences', have value	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I think sheep's sentience, or ability to experience life, has value	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I think sheep's intelligence has value	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I think sheep's abilities have value	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Please turn to the next page ...

Questionnaire number 6 (continued):

Question 7—about your general views

Do you think that chickens have any importance at all? (please tick)	Yes ☐	No ☐

If you answered 'yes', please answer Question 8 below. If you answered 'no', please turn to the next page.

Question 8—exploring your views

"I think that chickens are important because:" (please tick one box in every row)

	Strongly disagree					Neither				Strongly agree
I value chickens' appearance	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I value chickens' company and affection towards me	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I value chickens' contribution to my environment, making up a range of animals that ensure the countryside's future	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I value chickens' monetary value	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I value rare breeds of chickens	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I value chickens as status symbols	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I value the products that can be made from chickens' bodies	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I think chickens' souls, or 'essences', have value	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I think chickens' sentience, or ability to experience life, has value	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I think chickens' intelligence has value	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I think chickens' abilities have value	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Please turn to the next page ...

Questionnaire number 6 (continued):

Thinking about your views towards cows, pigs, sheep and chickens, how positive or negative would you say your views are towards these animals overall?

Extremely negative					Neither					Extremely positive
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Please turn to the next page ...

Questionnaire number 6 (continued):

This information helps to classify your answers

Your age:	☐ years
Your sex: (M/F)	☐
Your nationality:	☐

Thank you

End of questionnaire number 6

Please turn to the next page ...

Thank you for completing one questionnaire.

You can now forget about that one and proceed to the next questionnaire, which is unrelated to the questionnaire you have just completed.

Please answer as honestly as possible and try to avoid being influenced by the previous questionnaire.

Please turn to the next page ...

Questionnaire number 2:

Question 1—about your general diet

Please tick if, in the last 7 days, you have eaten:	
Fish and/or seafood	☐
Chicken and/or turkey and/or duck	☐
Beef and/or burgers	☐
Pork and/or bacon, sausages, hot dogs	☐
Veal	☐
Lamb and/or mutton	☐
Offal	☐
Cold cuts	☐
Meat pate/paste	☐

Please turn to the next page ...

Questionnaire number 2 (continued):

If you ticked any of the boxes in Question 1, please answer Question 2 below. If you did not tick any boxes in Question 1, please ignore Question 2 and turn the page.

Question 2—exploring your diet (only answer if you ticked any of the boxes in Question 1)

"In the last 7 days I ate meat and/or fish because:" (please tick one box in every row)

	Strongly disagree					Neither				Strongly agree
I like its taste	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I think it's good or natural for me	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
There was no alternative available	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Habit	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Religious reasons	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Other people expected me to eat it	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
It didn't occur to me not to eat it	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
It looked or smelled nice	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
It was good value for money	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
It was organic	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I wanted to support the butcher or farmer	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
It was a special celebratory meal	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
It was in something that I ate mistakenly	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Please turn to the next page ...

10

Questionnaire number 2 (continued):

If you were instructed not to answer Question 2, please now answer Question 3 below. If you have just answered Question 2, please ignore Question 3 and turn to the next page.

Question 3—about your general diet (only answer if you did not answer Question 2)

"In the last 7 days I have not eaten meat and/or fish because:" (please tick one box in every row)

	Strongly disagree					Neither				Strongly agree
It was unavailable (otherwise I would have)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
It was too expensive	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Religious reasons	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I dislike the taste	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I dislike the smell	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I dislike the appearance	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Ethical reasons	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Health reasons	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Environmental reasons	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Please turn to the next page ...

Questionnaire number 2 (continued):

Thinking about your views towards eating meat, how positive or negative would you say your views are towards eating meat overall?

Extremely negative					Neither					Extremely positive
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Thank you

End of questionnaire number 2

Please turn to the next page ...

12

How you are feeling:

Think about your views towards farm animals and your different views towards eating meat. That is, NOT the relationship between farm animals and meat itself, but the relationship between YOUR VIEWS about farm animals and eating meat, as you expressed them here. Try to evaluate how thinking about your views together makes you feel.

Below are words that can describe different types of feelings. For each word, please indicate how much it describes how you are feeling by marking the scales. "0" means "does not apply at all", and "10" means "applies very much" to how you are feeling right now. Don't spend much time thinking about each word, just give a gut-level response about how you are feeling at this precise moment about your views towards farm animals and your views towards eating meat. (Please tick)

	Does not apply at all										Applies very much
Uncomfortable	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7	☐ 8	☐ 9	☐ 10
Uneasy	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7	☐ 8	☐ 9	☐ 10
Bothered	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7	☐ 8	☐ 9	☐ 10

Please turn to the next page ...

15

Understanding your views:

Thinking about your views towards farmed animals' slaughter for meat, how positive or negative would you say your views are towards animals' slaughter overall?

Extremely negative					Neither					Extremely positive
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Please turn to the next page ...

14

Thank you

Now please tell the researcher that you are ready for the experiment.

PLEASE DO NOT TURN OVER THIS PAGE: YOU WILL BE RETURNING TO IT AFTER THE EXPERIMENT.

How you are feeling:

Think about your views towards farm animals and your different views towards their slaughter and eating meat. That is, NOT the relationship between farm animals, slaughter and meat itself, but the relationship between YOUR VIEWS about farm animals, their slaughter and eating meat, as you expressed them here. Try to evaluate how thinking about your views together makes you feel.

Below are words that can describe different types of feelings. For each word, please indicate how much it describes how you are feeling by marking the scales. "0" means "does not apply at all", and "10" means "applies very much" to how you are feeling right now. Don't spend much time thinking about each word, just give a gut-level response about how you are feeling at this precise moment about your views towards farm animals, their slaughter and your views towards eating meat.

As your feelings may have changed, try to avoid being influenced by your previous answer to the same question. Concentrate only on how you feel right now.

	Does not apply at all										Applies very much
Uncomfortable	0	1	2	3	4	5	6	7	8	9	10
Uneasy	0	1	2	3	4	5	6	7	8	9	10
Bothered	0	1	2	3	4	5	6	7	8	9	10

Please turn to the next page ...

This research may have asked you questions that you haven't previously had the opportunity to consider.

Because sometimes people prefer to take their time over things, the next page gives you the opportunity to change your mind. Your answers can be the same as before, or different – it's entirely up to you. As always, there are no right or wrong answers.

Please turn to the next page ...

17

From questionnaire numbers 6 and 2:

Thinking about your views towards cows, pigs, sheep and chickens, how positive or negative would you say your views are towards these animals overall?

Extremely negative **Neither** **Extremely positive**

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Thinking about your views towards eating meat, how positive or negative would you say your views are towards eating meat overall?

Extremely negative **Neither** **Extremely positive**

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Thinking about your views towards farmed animals' slaughter for meat, how positive or negative would you say your views are towards animals' slaughter overall?

Extremely negative **Neither** **Extremely positive**

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Please turn to the next page ...

18

How you are feeling:

Think about your views towards farm animals and your different views towards their slaughter and eating meat. That is, NOT the relationship between farm animals, slaughter and meat itself, but the relationship between YOUR VIEWS about farm animals, their slaughter and eating meat, as you have just expressed them here. Try to evaluate how thinking about your views together makes you feel.

Below are words that can describe different types of feelings. For each word, please indicate how much it describes how you are feeling by marking the scales. "0" means "does not apply at all", and "10" means "applies very much" to how you are feeling right now. Don't spend much time thinking about each word, just give a gut-level response about how you are feeling at this precise moment about your views towards farm animals, their slaughter and your views towards eating meat.

As your views and feelings may have changed, try to avoid being influenced by your previous answer to the same question. Concentrate only on how you feel right now.

	Does not apply at all										Applies very much
Uncomfortable	0	1	2	3	4	5	6	7	8	9	10
Uneasy	0	1	2	3	4	5	6	7	8	9	10
Bothered	0	1	2	3	4	5	6	7	8	9	10

Please turn to the next page ...

19

Thank you; the research is now complete

This page explains the research in which you have just participated. If you need to leave now, please feel free to complete your prize draw entry form and tear this page from the pack to take with you. Otherwise you are welcome to read it here and ask any questions that you may have.

The research measures how people's views work together.

Previous research has found that sometimes people make their answers appear more consistent than they really are because they perceive inconsistency to be a bad thing, even though it's normal for everyone sometimes. This is a problem because it means that research does not gain valid results. Even if you might not have been affected by this problem, other people might be. So the questionnaires at the beginning of the research were presented as disconnected from each other to try to avoid this problem. In fact, the results from these questionnaires will be compared with the experimental data to discover how your consciously considered views relate to the unconscious reactions recorded by the computer.

The questions asking you how you were feeling give an idea of what effect the research was having on you at each stage and how you managed that effect.

Thank you so much for completing the research. Without people generously contributing their time, research such as this would be impossible.

If you have any questions, please contact c.a.norton@lse.ac.uk

APPENDIX E

Images chosen for the IAT

Animal category

Tally: 16 votes

Tally: 16 votes

Tally: 16 votes

Tally: 19 votes

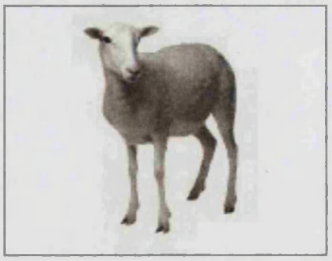
Tally: 13 votes

Tally: 13 votes

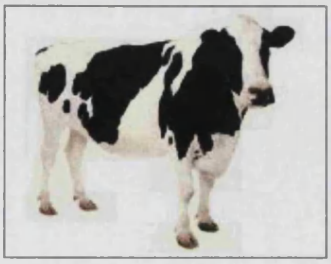
Tally: 20 votes

Tally: 14 votes

Tally: 10 votes



Tally: 30 votes



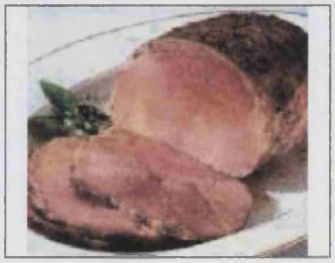
Tally: 20 votes

Tally: 9 votes

Meat category

Tally: 15 votes

Tally: 13 votes



Tally: 12 votes

Tally: 28 votes

Tally: 10 votes

Tally: 10 votes

Tally: 13 votes

Tally: 12 votes

Tally: 12 votes

Tally: 25 votes

Tally: 19 votes

Tally: 8 votes

Slaughter category

Tally: 30 votes

Source: VIVA!

Tally: 16 votes

Source: VIVA!

Tally: 9 votes

Source: VIVA!

Tally: 27 votes

Tally: 16 votes

Tally: 12 votes

Source: VIVA!

Tally: 22 votes

Source: VIVA!

Tally: 21 votes

Tally: 12 votes

Source: CIWF

Tally: 35 votes

Source: VIVA!

Tally: 19 votes

Source: VIVA!

Tally: 7 votes

Source: VIVA!

APPENDIX F

IAT stimuli

Words used in the IAT

Good category

rainbow	peace
gift	friend
joy	pleasure
warmth	honest
laughter	lucky
health	sunrise
freedom	happy
love	loyal

Bad category

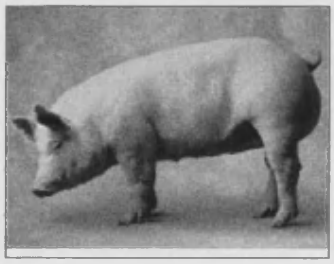
sickness	filth
cancer	disaster
vomit	hatred
failure	tragedy
agony	jail
poison	poverty
abuse	evil
crash	disaster

Pictures used in the IAT

Animal category

Means based on 24 participants' responses totalling around 120 responses to each image.

Mean recognition time: 557.2 ms



Mean recognition time: 572.7 ms

Mean recognition time: 575.0 ms

Mean recognition time: 564.2 ms

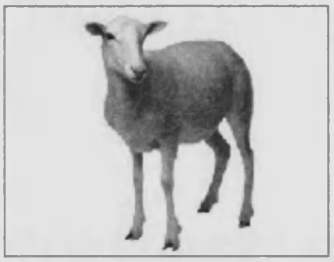
Mean recognition time: 563.7 ms

Mean recognition time: 556.8 ms

Mean recognition time: 556.4 ms

Mean recognition time: 570.0 ms

Mean recognition time: 548.9 ms



Mean recognition time: 537.1 ms

Mean recognition time: 566.0 ms

Mean recognition time: 551.8 ms

Meat category

Means based on 24 participants' responses totalling around 120 responses to each image.

Mean recognition time: 634.8 ms

Mean recognition time: 626.2 ms

Mean recognition time: 667.9 ms

Mean recognition time: 617.2 ms

Mean recognition time: 686.4 ms

Mean recognition time: 617.4 ms

Mean recognition time: 601.7 ms

Mean recognition time: 605.0 ms

Mean recognition time: 610.9 ms

Mean recognition time: 691.5 ms

Mean recognition time: 604.5 ms

Mean recognition time: 666.1 ms

Slaughter category

Means based on 24 participants' responses totalling around 120 responses to each image.

Mean recognition time: 669.3 ms

Credit VIVA!

Mean recognition time: 624.5 ms

Credit VIVA!

Mean recognition time: 649.6 ms

Credit VIVA!

Mean recognition time: 666.7 ms

Mean recognition time: 674.8 ms

Mean recognition time: 815.8 ms

Credit VIVA!

Mean recognition time: 691.3 ms

Credit VIVA!

Mean recognition time: 624.3 ms

Mean recognition time: 653.2 ms

Credit CIWF

Mean recognition time: 654.5 ms

Credit VIVA!

Mean recognition time: 641.2 ms

Credit VIVA!

Mean recognition time: 690.8 ms

Credit VIVA!

APPENDIX G

Schematic descriptions and illustrations of the IAT

Figure 16: Schematic descriptions and illustrations of the IAT

Program 1: Set 1, followed by set 5, followed by set 3

Sequence	1	2	3	4	5	6	7
Task description	Attribute discrimination Left/Right response	First target discrimination Left/Right response	First combined task Left/Right response	First reversed target discrimination Left/Right response	First reversed combined task Left/Right response	Second target discrimination Left/Right response	Second combined task Left/Right response
Task instructions	L good R bad	L animal (a) R meat (m)	L good L animal (a) R bad R meat (m)	L meat (m) R animal (a)	L good L meat (m) R bad R animal (a)	L slaughter (s) R meat (m)	L good L slaughter (s) R bad R meat (m)
Sample stimuli	L lucky L honour R poison R grief L gift R disaster L happy R hatred	L pig (a) R chicken (m) L lamb (a) R beef (m) L cow (a) L chicken (a) R pork (m) R lamb (m)	L pig (a) L pleasure L lamb (a) R evil R chicken (m) L miracle R beef (m) R bomb	R cow (a) L pork (m) R pig (a) R lamb (a) L beef (m) R chicken (a) L chicken (m) L lamb (m)	L peace L chicken (m) R filth R cow (a) R accident L pork (m) L rainbow R lamb (a)	R lamb (m) L chicken (s) R pork (m) R chicken (m) R beef (m) L cow (s) L pig (s) L lamb (s)	L cow (s) L freedom L chicken (s) R stink R lamb (m) R abuse R pork (m) L health

8	9	10	11	12	13
Second reversed target discrimination Left/Right response	Second reversed combined task Left/Right response	Third target discrimination Left/Right response	Third combined task Left/Right response	Third reversed target discrimination Left/Right response	Third reversed combined task Left/Right response
L meat (m) R slaughter (s)	L good L meat (m) R bad R slaughter (s)	L slaughter (s) R animal (a)	L good L slaughter (s) R bad R animal (a)	L animal (a) R slaughter (s)	L good L animal (a) R bad R slaughter (s)
R pig (s) L beef (m) R chicken (s) L pork (m) L lamb (m) L chicken (m) R cow (s) R lamb (s)	L sunrise L beef (m) R crash R pig (s) R poverty R lamb (s) L laughter L chicken (m)	R lamb (a) L chicken (s) R pig (a) R chicken (a) R cow (a) LL cow (s) L pig (s) L lamb (s)	L cow (s) L freedom L chicken (s) R stink R lamb (a) R abuse R pig (a) L health	R lamb (s) L chicken (a) R pig (s) R chicken (s) R cow (s) L cow (a) L pig (a) L lamb (a)	L cow (a) L freedom L chicken (a) R stink R lamb (s) R abuse R pig (s) L health

(m) = meat, (a) = animal; (s) = slaughter

Program 2: Set 4, followed by set 2, followed by set 6

Sequence	1	2	3	4	5	6	7
Task description	Attribute discrimination Left/Right response	First target discrimination Left/Right response	First combined task Left/Right response	First reversed target discrimination Left/Right response	First reversed combined task Left/Right response	Second target discrimination Left/Right response	Second combined task Left/Right response
Task instructions	L good R bad	L meat (m) R animal (a)	L good L meat (m) R bad R animal (a)	L animal (a) R meat (m)	L good L animal (a) R bad R meat (m)	L meat (m) R slaughter (s)	L good L meat (m) R bad R slaughter (s)
Sample stimuli	L lucky L honour R poison R grief L gift R disaster L happy R hatred	L pork (m) R chicken (a) L lamb (m) R cow (a) L beef (m) L chicken (m) R pig (a) R lamb (a)	L pork (m) L pleasure L lamb (m) R evil R chicken (a) L miracle R cow (a) R bomb	R beef (m) L pig (a) R pork (m) R lamb (m) L cow (a) R chicken (m) L chicken (a) L lamb (a)	L peace L chicken (a) R filth R beef (m) R accident L pig (a) L rainbow R lamb (m)	R lamb (s) L chicken (m) R pig (s) R chicken (s) R cow (s) L beef (m) L pork (m) L lamb (m)	L beef (m) L freedom L chicken (m) R stink R lamb (s) R abuse R pig (s) L health

8	9	10	11	12	13
Second reversed target discrimination Left/Right response	Second reversed combined task Left/Right response	Third target discrimination Left/Right response	Third combined task Left/Right response	Third reversed target discrimination Left/Right response	Third reversed combined task Left/Right response
L slaughter (s) R meat (m)	L good L slaughter (s) R bad R meat (m)	L animal (a) R slaughter (s)	L good L animal (a) R bad R slaughter (s)	L slaughter (s) R animal (a)	L good L slaughter (s) R bad R animal (a)
R pork (m) L cow (s) R chicken (m) L pig (s) L lamb (s) L chicken (s) R beef (m) R lamb (m)	L sunrise L cow (s) R crash R pork (m) R poverty R lamb (m) L laughter L chicken (s)	R lamb (s) L chicken (a) R pig (s) R chicken (s) R cow (s) L cow (a) L pig (a) L lamb (a)	L cow (a) L freedom L chicken (a) R stink R lamb (s) R abuse R pig (s) L health	R lamb (a) L chicken (s) R pig (a) R chicken (a) R cow (a) L cow (s) L pig (s) L lamb (s)	L cow (s) L freedom L chicken (s) R stink R lamb (a) R abuse R pig (a) L health

(m) = meat; (a) = animal; (s) = slaughter

Program 3: Set 5, followed by set 3, followed by set 4

Sequence	1	2	3	4	5	6	7
Task description	Attribute discrimination Left/Right response	First target discrimination Left/Right response	First combined task Left/Right response	First reversed target discrimination Left/Right response	First reversed combined task Left/Right response	Second target discrimination Left/Right response	Second combined task Left/Right response
Task instructions	L good R bad	L slaughter (s) R meat (m)	L good L slaughter (s) R bad R meat (m)	L meat (m) R slaughter (s)	L good L meat (m) R bad R slaughter (s)	L slaughter (s) R animal (a)	L good L slaughter (s) R bad R animal (a)
Sample stimuli	L lucky L honour R poison R grief L gift R disaster L happy R hatred	L pig (s) R chicken (m) L lamb (s) R beef (m) L cow (s) L chicken (s) R pork (m) R lamb (m)	L pig (s) L pleasure L lamb (s) R evil R chicken (m) L miracle R beef (m) R bomb	R cow (s) L pork (m) R pig (s) R lamb (s) L beef (m) R chicken (s) L chicken (m) L lamb (m)	L peace L chicken (m) R filth R cow (s) R accident L pork (m) L rainbow R lamb (s)	R lamb (a) L chicken (s) R pig (a) R chicken (a) R cow (a) L cow (s) L pig (s) L lamb (s)	L cow (s) L freedom L chicken (s) R stink R lamb (a) R abuse R pig (a) L health

8	9	10	11	12	13
Second reversed target discrimination Left/Right response	Second reversed combined task Left/Right response	Third target discrimination Left/Right response	Third combined task Left/Right response	Third reversed target discrimination Left/Right response	Third reversed combined task Left/Right response
L animal (a) R slaughter (s)	L good L animal (a) R bad R slaughter (s)	L meat (m) R animal (a)	L good L meat (m) R bad R animal (a)	L animal (a) R meat (m)	L good L animal (a) R bad R meat (m)
R pig (s) L cow (a) R chicken (s) L pig (a) L lamb (a) L chicken (a) R cow (s) R lamb (s)	L sunrise L cow (a) R crash R pig (s) R poverty R lamb (s) L laughter L chicken (a)	R lamb (a) L chicken (m) R pig (a) R chicken (a) R cow (a) L beef (m) L pork (m) L lamb (m)	L beef (m) L freedom L chicken (m) R stink R lamb (a) R abuse R pig (a) L health	R lamb (m) L chicken (a) R pork (m) R chicken (m) R beef (m) L cow (a) L pig (a) L lamb (a)	L cow (a) L freedom L chicken (a) R stink R lamb (m) R abuse R pork (m) L health

(m) = meat; (a) = animal; (s) = slaughter

Program 4: Set 2, followed by set 6, followed by set 1

Sequence	1	2	3	4	5	6	7
Task description	Attribute discrimination Left/Right response	First target discrimination Left/Right response	First combined task Left/Right response	First reversed target discrimination Left/Right response	First reversed combined task Left/Right response	Second target discrimination Left/Right response	Second combined task Left/Right response
Task instructions	L good R bad	L meat (m) R slaughter (s)	L good L meat (m) R bad R slaughter (s)	L slaughter (s) R meat (m)	L good L slaughter (s) R bad R meat (m)	L animal (a) R slaughter (s)	L good L animal (a) R bad R slaughter (s)
Sample stimuli	L lucky L honour R poison R grief L gift R disaster L happy R hatred	L pork (m) R chicken (s) L lamb (m) R cow (s) L beef (m) L chicken (m) R pig (s) R lamb (s)	L pork (m) L pleasure L lamb (m) R evil R chicken (s) L miracle R cow (s) R bomb	R beef (m) L pig (s) R pork (m) R lamb (m) L cow (s) R chicken (m) L chicken (s) L lamb (s)	L peace L chicken (s) R filth R beef (m) R accident L pig (s) L rainbow R lamb (m)	R lamb (s) L chicken (a) R pig (s) R chicken (s) R cow (s) L cow (a) L pig (a) L lamb (a)	L cow (a) L freedom L chicken (a) R stink R lamb (s) R abuse R pig (s) L health

8	9	10	11	12	13
Second reversed target discrimination Left/Right response	Second reversed combined task Left/Right response	Third target discrimination Left/Right response	Third combined task Left/Right response	Third reversed target discrimination Left/Right response	Third reversed combined task Left/Right response
L slaughter (s) R animal (a)	L good L slaughter (s) R bad R animal (a)	L animal (a) R meat (m)	L good L animal (a) R bad R meat (m)	L meat (m) R animal (a)	L good L meat (m) R bad R animal (a)
R pig (a) L cow (s) R chicken (a) L pig (s) L lamb (s) L chicken (s) R cow (a) R lamb (a)	L sunrise L cow (s) R crash R pig (a) R poverty R lamb (a) L laughter L chicken (s)	R lamb (m) L chicken (a) R pork (m) R chicken (m) R beef (m) L cow (a) L pig (a) L lamb (a)	L cow (a) L freedom L chicken (a) R stink R lamb (m) R abuse R pork (m) L health	R lamb (a) L chicken (m) R pig (a) R chicken (a) R cow (a) L beef (m) L pork (m) L lamb (m)	L beef (m) L freedom L chicken (m) R stink R lamb (a) R abuse R pig (a) L health

(m) = meat, (a) = animal; (s) = slaughter

Program 5: Set 3, followed by set 4, followed by set 2

Sequence	1	2	3	4	5	6	7
Task description	Attribute discrimination Left/Right response	First target discrimination Left/Right response	First combined task Left/Right response	First reversed target discrimination Left/Right response	First reversed combined task Left/Right response	Second target discrimination Left/Right response	Second combined task Left/Right response
Task instructions	L good R bad	L slaughter (s) R animal (a)	L good L slaughter (s) R bad R animal (a)	L animal (a) R slaughter (s)	L good L animal (a) R bad R slaughter (s)	L meat (m) R animal (a)	L good L meat (m) R bad R animal (a)
Sample stimuli	L lucky L honour R poison R grief L gift R disaster L happy R hatred	L pig (s) R chicken (a) L lamb (s) R cow (a) L cow (s) L chicken (s) R pig (a) R lamb (a)	L pig (s) L pleasure L lamb (s) R evil R chicken (a) L miracle R cow (a) R bomb	R cow (s) L pig (a) R pig (s) R lamb (s) L cow (a) R chicken (s) L chicken (a) L lamb (a)	L peace L chicken (a) R filth R cow (s) R accident L pig (a) L rainbow R lamb (s)	R lamb (a) L chicken (m) R pig (a) R chicken (a) R cow (a) L beef (m) L pork (m) L lamb (m)	L beef (m) L freedom L chicken (m) R stink R lamb (a) R abuse R pig (a) L health

8	9	10	11	12	13
Second reversed target discrimination Left/Right response	Second reversed combined task Left/Right response	Third target discrimination Left/Right response	Third combined task Left/Right response	Third reversed target discrimination Left/Right response	Third reversed combined task Left/Right response
L animal (a) R meat (m)	L good L animal (a) R bad R meat (m)	L meat (m) R slaughter (s)	L good L meat (m) R bad R slaughter (s)	L slaughter (s) R meat (m)	L good L slaughter (s) R bad R meat (m)
R pork (m) L cow (a) R chicken (m) L pig (a) L lamb (a) L chicken (a) R beef (m) R lamb (m)	L sunrise L cow (a) R crash R pork (m) R poverty R lamb (m) L laughter L chicken (a)	R lamb (s) L chicken (m) R pig (s) R chicken (s) R cow (s) L beef (m) L pork (m) L lamb (m)	L beef (m) L freedom L chicken (m) R stink R lamb (s) R abuse R pig (s) L health	R lamb (m) L chicken (s) R pork (m) R chicken (m) R beef (m) L cow (s) L pig (s) L lamb (s)	L cow (s) L freedom L chicken (s) R stink R lamb (m) R abuse R pork (m) L health

(m) = meat; (a) = animal; (s) = slaughter

Program 6: Set 6, followed by set 1, followed by set 5

Sequence	1	2	3	4	5	6	7
Task description	Attribute discrimination Left/Right response	First target discrimination Left/Right response	First combined task Left/Right response	First reversed target discrimination Left/Right response	First reversed combined task Left/Right response	Second target discrimination Left/Right response	Second combined task Left/Right response
Task instructions	L good R bad	L animal (a) R slaughter (s)	L good L animal (a) R bad R slaughter (s)	L slaughter (s) R animal (a)	L good L slaughter (s) R bad R animal (a)	L animal (a) R meat (m)	L good L animal (a) R bad R meat (m)
Sample stimuli	L lucky L honour R poison R grief L gift R disaster L happy R hatred	L pig (a) R chicken (s) L lamb (a) R cow (s) L cow (a) L chicken (a) R pig (s) R lamb (s)	L pig (a) L pleasure L lamb (a) R evil R chicken (s) L miracle R cow (s) R bomb	R cow (a) L pig (s) R pig (a) R lamb (a) L cow (s) R chicken (a) L chicken (s) L lamb (s)	L peace L chicken (s) R filth R cow (a) R accident L pig (s) L rainbow R lamb (a)	R lamb (m) L chicken (a) R pork (m) R chicken (m) R beef (m) L cow (a) L pig (a) L lamb (a)	L cow (a) L freedom L chicken (a) R stink R lamb (m) R abuse R pork (m) L health

8	9	10	11	12	13
Second reversed target discrimination Left/Right response	Second reversed combined task Left/Right response	Third target discrimination Left/Right response	Third combined task Left/Right response	Third reversed target discrimination Left/Right response	Third reversed combined task Left/Right response
L meat (m) R animal (a)	L good L meat (m) R bad R animal (a)	L slaughter (s) R meat (m)	L good L slaughter (s) R bad R meat (m)	L meat (m) R slaughter (s)	L good L meat (m) R bad R slaughter (s)
R pig (a) L beef (m) R chicken (a) L pork (m) L lamb (m) L chicken (m) R cow (a) R lamb (a)	L sunrise L beef (m) R crash R pig (a) R poverty R lamb (a) L laughter L chicken (m)	R lamb (m) L chicken (s) R pork (m) R chicken (m) R beef (m) L cow (s) L pig (s) L lamb (s)	L cow (s) L freedom L chicken (s) R stink R lamb (m) R abuse R pork (m) L health	R lamb (s) L chicken (m) R pig (s) R chicken (s) R cow (s) L beef (m) L pork (m) L lamb (m)	L beef (m) L freedom L chicken (m) R stink R lamb (s) R abuse R pig (s) L health

(m) = meat; (a) = animal; (s) = slaughter

Based on Greenwald et. al. 1998, p.1465

APPENDIX H

Quantitative results tables

Table 8: How farm animals are evaluated: correlations

		Bodies		Biodiversity		Money		Appearance		Rarity		Affection		Status		Sentience		Abilities		Intelligence		Souls		Meat consumption		Animal overall1		Meat overall1		Slaughter overall1	
		M-eater	Veggie	M-eater	Veggie	M-eater	Veggie	M-eater	Veggie	M-eater	Veggie	M-eater	Veggie	M-eater	Veggie	M-eater	Veggie	M-eater	Veggie	M-eater	Veggie	M-eater	Veggie	M-eater	Veggie	M-eater	Veggie	M-eater	Veggie	M-eater	Veggie
Bodies	Pearson Correlation	1	1	.211	.101	**.436†**	**.779†**	.213	-.101	**.305***	.300	.170	**-.617***	.193	.025	.131	-.433	.186	-.417	.159	-.464	.138	-.231	**.379†**	na	.129	-.151	.096	.512	.216	**.659***
	Sig. (2-tailed)			.095	.730	**.000**	**.001**	.092	.731	**.014**	.298	.178	**.019**	.127	.933	.303	.122	.141	.138	.210	.095	.277	.427	**.002**	na	.309	.607	.451	.061	.087	**.010**
Biodiversity	Pearson Correlation	.211	.101	1	1	**.517†**	.247	**.449†**	.286	**.472†**	.409	**.481†**	.027	.222	.094	**.468†**	.420	**.454†**	.396	**.414†**	.377	**.385†**	.373	.015	na	**.261***	**.764†**	.167	.053	**-.297***	.095
	Sig. (2-tailed)	.095	.730			**.000**	.394	**.000**	.321	**.000**	.146	**.000**	.926	.078	.750	**.000**	.135	**.000**	.161	**.001**	.183	**.002**	.188	.907	na	**.037**	**.001**	.187	.857	**.017**	.747
Money	Pearson Correlation	**.436†**	**.779†**	**.517†**	.247	1	1	**.354†**	-.351	**.511†**	.466	.224	**-.641*†**	**.448†**	.329	.186	-.369	.21	-.409	.124	-.446	.143	-.367	.224	na	**.337†**	-.203	.01	.201	.071	**.568***
	Sig. (2-tailed)	**.000**	**.001**	**.000**	.394			**.004**	.219	**.000**	.093	.075	**.013**	**.000**	.250	.142	.195	.096	.146	.328	.110	.258	.197	.076	na	**.006**	.486	.936	.491	.579	**.034**
Appearance	Pearson Correlation	.213	-.101	**.449†**	.286	**.354†**	-.351	1	1	**.579†**	.005	**.697†**	**.603*†**	**.411†**	.125	**.502†**	.462	**.430†**	.358	**.472†**	.346	**.492†**	.427	**.250***	na	**.434†**	.486	**-.273***	.073	.104	-.046
	Sig. (2-tailed)	.092	.731	**.000**	.321	**.004**	.219			**.000**	.988	**.000**	**.022**	**.001**	.670	**.000**	.097	**.000**	.209	**.000**	.226	**.000**	.128	**.046**	na	**.000**	.078	**.029**	.805	.414	.876
Rarity	Pearson Correlation	**.305***	.300	**.472†**	.409	**.511†**	.466	**.579†**	-.005	1	1	**.625†**	.068	**.551†**	.279	**.448†**	.262	**.276***	.392	**.421†**	.378	**.363†**	.329	.19	na	**.295***	.138	.142	.041	.086	.328
	Sig. (2-tailed)	**.014**	.298	**.000**	.146	**.000**	.093	**.000**	.988			**.000**	.817	**.000**	.334	**.000**	.365	**.027**	.165	**.001**	.182	**.003**	.250	.132	na	**.018**	.639	.263	.889	.499	.253
Affection	Pearson Correlation	.170	**-.617***	**.481†**	.027	.224	**-.641***	**.697†**	**.603***	**.625†**	.068	1	1	**.528†**	.295	**.558†**	.445	**.496†**	**.597***	**.593†**	**.615***	**.608†**	.400	.183	na	**.373†**	.186	**-.288***	-.167	**-.260***	-.389
	Sig. (2-tailed)	.178	**.019**	**.000**	.926	.075	**.013**	**.000**	**.022**	**.000**	.817			**.000**	.306	**.000**	.111	**.000**	**.024**	**.000**	**.019**	**.000**	.157	.147	na	**.002**	.524	**.021**	.569	**.038**	.169
Status	Pearson Correlation	.193	.025	.222	.094	**.448†**	.329	**.411†**	.125	**.551†**	.279	**.528†**	.295	1	1	.237	-.264	.218	-.138	**.279***	-.145	**.370†**	-.417	.141	na	.220	-.373	.067	-.171	.138	.003
	Sig. (2-tailed)	.127	.933	.078	.750	**.000**	.250	**.001**	.670	**.000**	.334	**.000**	.306			.060	.363	.083	.638	**.025**	.622	**.003**	.138	.265	na	.081	.189	.597	.558	.277	.993
Sentience	Pearson Correlation	.131	-.433	**.468†**	.420	.186	-.369	**.502†**	.462	**.448†**	.262	**.558†**	.445	.237	-.264	1	1	**.714†**	**.795†**	**.862†**	**.796†**	**.739†**	**.836†**	.072	na	**.311***	**.713†**	**-.524†**	-.074	**-.395†**	-.210
	Sig. (2-tailed)	.303	.122	**.000**	.135	.142	.195	**.000**	.097	**.000**	.365	**.000**	.111	.060	.363			**.000**	**.001**	**.000**	**.001**	**.000**	**.000**	.57	na	**.013**	**.004**	**.000**	.803	**.001**	.471
Abilities	Pearson Correlation	.186	-.417	**.454†**	.396	.21	-.409	**.430†**	.358	**.276***	.392	**.496†**	**.597***	.218	-.138	**.714†**	**.795†**	1	1	**.785†**	**.995†**	**.565†**	**.858†**	.015	na	**.363†**	.513	**-.408†**	.005	**-.264***	-.145
	Sig. (2-tailed)	.141	.138	**.000**	.161	.096	.146	**.000**	.209	**.027**	.165	**.000**	**.024**	.083	.638	**.000**	**.001**			**.000**	**.000**	**.000**	**.000**	.904	na	**.003**	.061	**.001**	.986	**.035**	.621
Intelligence	Pearson Correlation	.159	-.464	**.414†**	.377	.124	-.446	**.472†**	.346	**.421†**	.378	**.593†**	**.615*†**	**.279***	-.145	**.862†**	**.796†**	**.785†**	**.995†**	1	1	**.711†**	**.854†**	-.037	na	**.294***	.518	**-.535†**	.007	**-.439†**	-.222
	Sig. (2-tailed)	.210	.095	**.001**	.183	.328	.110	**.000**	.226	**.001**	.182	**.000**	**.019**	**.025**	.622	**.000**	**.001**	**.000**	**.000**			**.000**	**.000**	.774	na	**.018**	.058	**.000**	.980	**.000**	.445
Souls	Pearson Correlation	.138	-.231	**.385†**	.373	.143	-.367	**.492†**	.427	**.363†**	.329	**.608†**	.400	**.370†**	-.417	**.739†**	**.836†**	**.565†**	**.858†**	**.711†**	**.854†**	1	1	.101	na	**.266***	**.607*†**	**-.370†**	-.011	**-.310***	-.108
	Sig. (2-tailed)	.277	.427	**.002**	.188	.258	.197	**.000**	.128	**.003**	.250	**.000**	.157	**.003**	.138	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**			.425	na	**.034**	**.021**	**.003**	.970	**.013**	.712
Meat consumption	Pearson Correlation	**.379†**	na	.015	na	.224	na	**.250***	na	.190	na	.183	na	.141	na	.072	na	.015	na	.037	na	.101	na	1	na	.111	na	.089	na	.146	na
	Sig. (2-tailed)	**.002**	na	.907	na	.076	na	**.046**	na	.132	na	.147	na	.265	na	.570	na	.904	na	.774	na	.425	na		na	.382	na	.487	na	.250	na
Animal overall1	Pearson Correlation	.129	.151	**.261***	**.764†**	**.337†**	-.203	**.434†**	.486	**.295***	.138	**.373†**	.186	.220	-.373	**.311***	**.713†**	**.363†**	.513	**.294***	.518	**.266***	**.607*†**	.111	na	1	1	.043	.189	.095	-.273
	Sig. (2-tailed)	.309	.607	**.037**	**.001**	**.006**	.486	**.000**	.078	**.018**	.639	**.002**	.524	.081	.189	**.013**	**.004**	**.003**	.061	**.018**	.058	**.034**	**.021**	.382	na			.736	.518	.456	.345
Meat overall1	Pearson Correlation	.960	.512	-.167	.053	.010	.201	**-.273***	.073	-.142	.041	**-.288***	-.167	-.067	-.171	**-.524†**	-.074	**-.408†**	.005	**-.535†**	.007	**-.370†**	-.011	.089	na	.043	.189	1	1	**.615†**	.086
	Sig. (2-tailed)	.451	.061	.187	.857	.936	.491	**.029**	.805	.263	.889	**.021**	.569	.597	.558	**.000**	.803	**.001**	.986	**.000**	.980	**.003**	.970	.487	na	.736	.518			**.000**	.770
Slaughter overall1	Pearson Correlation	.216	**.659***	**-.297***	-.095	.071	**.568***	-.104	-.046	-.086	.328	**-.260***	-.389	-.138	.003	**-.395†**	-.210	**-.264***	-.145	**-.439†**	-.222	**-.310***	-.108	.146	na	.095	-.273	**.615†**	.086	1	1
	Sig. (2-tailed)	.087	**.010**	**.017**	.747	.579	**.034**	.414	.876	.499	.253	**.038**	.169	.277	.993	**.001**	.471	.035	.621	**.000**	.445	**.013**	.712	.250	na	.456	.345	**.000**	.770		
	N	64	14	64	14	64	14	64	14	64	14	64	14	64	14	64	14	64	14	64	14	64	14	64	14	64	14	64	14	64	14

† Correlation is significant at the 0.01 level (2-tailed test to measure correlations in both positive and negative directions)

* Correlation is significant at the 0.05 level (2-tailed test to measure correlations in both positive and negative directions)

Table 9: Why meat-eaters eat meat: correlations

		Taste	Natural	Look/ smell	Habit	Value	Didn't occur	Organic	Celebration	No alternative	Butcher/ farmer	Religious	Others	Mistake	Meat consumption	Animal overall	Meat overall	Slaughter overall
Taste	Pearson Correlation	1	.487†	.451†	.071	.040	-.028	-.026	-.001	-.329†	.108	-.087	-.159	-.140	.273*	.168	.173	.087
	Sig. (2-tailed)		.000	.000	.580	.754	.825	.836	.993	.008	.394	.495	.211	.270	.029	.186	.171	.496
Natural	Pearson Correlation	.487†	1	.461†	.112	.146	.209	.077	-.013	-.292*	-.044	-.063	.048	-.229	.100	.094	.166	.042
	Sig. (2-tailed)	.000		.000	.378	.249	.098	.545	.920	.019	.729	.621	.709	.069	.431	.461	.190	.739
Look/smell	Pearson Correlation	.451†	.461†	1	.034	.148	.337†	-.046	.008	-.103	.093	-.139	-.063	-.194	.295*	-.028	.146	-.023
	Sig. (2-tailed)	.000	.000		.787	.244	.006	.721	.951	.418	.464	.274	.620	.125	.018	.827	.250	.855
Habit	Pearson Correlation	.071	.112	.034	1	.219	.378†	.074	-.266*	.006	.164	-.021	-.222	-.264*	.203	-.107	.407†	.226
	Sig. (2-tailed)	.580	.378	.787		.082	.002	.564	.033	.966	.196	.869	.077	.035	.108	.401	.001	.072
Value	Pearson Correlation	.040	.146	.148	.219	1	.091	.051	.021	.061	.224	.073	.040	-.129	.137	-.009	.128	.017
	Sig. (2-tailed)	.754	.249	.244	.082		.474	.689	.872	.632	.075	.566	.753	.311	.279	.943	.312	.892
Didn't occur	Pearson Correlation	-.028	.209	.337†	.378†	.091	1	.019	-.174	-.120	.029	.022	-.037	-.208	.053	-.074	.192	.066
	Sig. (2-tailed)	.825	.098	.006	.002	.474		.883	.168	.344	.823	.861	.773	.099	.677	.560	.129	.606
Organic	Pearson Correlation	-.026	.077	-.046	.074	.051	.019	1	-.042	.119	.483†	.427†	.158	.296*	.067	.174	.133	.179
	Sig. (2-tailed)	.836	.545	.721	.564	.689	.883		.742	.348	.000	.000	.211	.018	.600	.170	.295	.157
Celebration	Pearson Correlation	-.001	-.013	.008	-.266*	.021	-.174	-.042	1	.346†	.302*	.236	.473†	.485†	-.043	.240	-.269*	-.190
	Sig. (2-tailed)	.993	.920	.951	.033	.872	.168	.742		.005	.015	.060	.000	.000	.736	.056	.032	.133
No alternative	Pearson Correlation	-.329†	-.292*	-.103	.006	.061	-.120	.119	.346†	1	.240	.276*	.243	.397†	-.073	-.016	-.097	.019
	Sig. (2-tailed)	.008	.019	.418	.966	.632	.344	.348	.005		.056	.027	.053	.001	.568	.899	.448	.880
Butcher/farmer	Pearson Correlation	-.108	.044	-.093	.164	.224	.029	.483†	.302*	.240	1	.407†	.342†	.440†	.211	.082	-.094	-.073
	Sig. (2-tailed)	.394	.729	.464	.196	.075	.823	.000	.015	.056		.001	.006	.000	.094	.522	.458	.565
Religious	Pearson Correlation	-.087	-.063	-.139	-.021	.073	.022	.427†	.236	.276*	.407†	1	.306*	.578†	-.109	.077	-.018	.093
	Sig. (2-tailed)	.495	.621	.274	.869	.566	.861	.000	.060	.027	.001		.014	.000	.390	.547	.889	.466
Others	Pearson Correlation	-.159	.048	-.063	-.222	.040	-.037	.158	.473†	.243	.342†	.306*	1	.414†	-.041	-.022	-.139	.039
	Sig. (2-tailed)	.211	.709	.620	.077	.753	.773	.211	.000	.053	.006	.014		.001	.748	.863	.275	.762
Mistake	Pearson Correlation	-.140	-.229	-.194	-.264*	-.129	-.208	.296*	.485†	.397†	.440†	.578†	.414†	1	.043	.027	-.219	-.078
	Sig. (2-tailed)	.270	.069	.125	.035	.311	.099	.018	.000	.001	.000	.000	.001		.737	.831	.082	.539
Meat consumption	Pearson Correlation	.273*	.100	.295*	.203	.137	.053	.067	-.043	-.073	.211	-.109	-.041	.043	1	.111	.089	.146
	Sig. (2-tailed)	.029	.431	.018	.108	.279	.677	.600	.736	.568	.094	.390	.748	.737		.382	.487	.250
Animal overall	Pearson Correlation	.168	.094	-.028	-.107	-.009	-.074	.174	.240	-.016	.082	.077	-.022	.027	.111	1	-.043	.095
	Sig. (2-tailed)	.186	.461	.827	.401	.943	.560	.170	.056	.899	.522	.547	.863	.831	.382		.736	.456
Meat overall	Pearson Correlation	.173	.166	.146	.407†	.128	.192	.133	-.269*	-.097	-.094	-.018	-.139	-.219	.089	-.043	1	.615†
	Sig. (2-tailed)	.171	.190	.250	.001	.312	.129	.295	.032	.448	.458	.889	.275	.082	.487	.736		.000
Slaughter overall	Pearson Correlation	.087	.042	-.023	.226	.017	.066	.179	-.190	.019	-.073	.093	.039	-.078	.146	.095	.615†	1
	Sig. (2-tailed)	.496	.739	.855	.072	.892	.606	.157	.133	.880	.565	.466	.762	.539	.250	.456	.000	
	N	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64

† Correlation is significant at the 0.01 level (2-tailed test to measure correlations in both positive and negative directions)

* Correlation is significant at the 0.05 level (2-tailed test to measure correlations in both positive and negative directions)

Table 10: Why vegetarians avoid meat: correlations

		Ethical	Environmental	Dislike appearance	Health	Dislike smell	Dislike taste	Religious	Expense	Unavailable	Animal overall	Meat overall	Slaughter overall
Ethical	**Pearson Correlation**	1	**.656***	.027	**.623***	-.052	-.106	.225	.013	-.114	.073	-.160	**-.917†**
	Sig. (2-tailed)		**.011**	.928	**.017**	.860	.718	.440	.966	.699	.804	.584	**.000**
Environmental	**Pearson Correlation**	**.656***	1	-.348	.372	-.350	-.110	-.245	-.321	**-.544***	.286	-.040	**-.625***
	Sig. (2-tailed)	**.011**		.222	.190	.220	.709	.398	.263	**.044**	.322	.891	**.017**
Dislike appearance	**Pearson Correlation**	.027	-.348	1	.023	**.956†**	**.590***	.522	-.304	.016	-.081	-.300	-.116
	Sig. (2-tailed)	.928	.222		.939	**.000**	**.026**	.056	.291	.956	.782	.298	.694
Health	**Pearson Correlation**	**.623***	.372	.023	1	-.100	.042	-.055	.274	.103	-.139	-.222	**-.602***
	Sig. (2-tailed)	**.017**	.190	.939		.735	.886	.852	.343	.725	.636	.447	**.023**
Dislike smell	**Pearson Correlation**	-.052	-.350	**.956†**	-.100	1	**.634***	**.553***	-.357	-.060	.032	-.254	-.036
	Sig. (2-tailed)	.860	.220	**.000**	.735		**.015**	**.040**	.211	.839	.914	.381	.903
Dislike taste	**Pearson Correlation**	-.106	-.110	**.590***	.042	**.634***	1	.354	-.081	**-.163**	-.127	.028	.134
	Sig. (2-tailed)	.718	.709	**.026**	.886	**.015**		.215	.783	.577	.666	.925	.648
Religious	**Pearson Correlation**	.225	-.245	.522	-.055	**.553***	.354	1	.244	.423	.319	.106	-.317
	Sig. (2-tailed)	.440	.398	.056	.852	**.040**	.215		.400	.132	.267	.717	.269
Expense	**Pearson Correlation**	.013	-.321	-.304	.274	-.357	-.081	.244	1	**.821†**	-.194	.055	.126
	Sig. (2-tailed)	.966	.263	.291	.343	.211	.783	.400		**.000**	.507	.853	.667
Unavailable	**Pearson Correlation**	-.114	**-.544***	.016	.103	-.060	-.163	.423	**.821†**	1	-.151	.008	.118
	Sig. (2-tailed)	.699	**.044**	.956	.725	.839	.577	.132	**.000**		.605	.978	.687
Animal overall	**Pearson Correlation**	.073	.286	-.081	-.139	.032	-.127	.319	-.194	-.151	1	.189	-.273
	Sig. (2-tailed)	.804	.322	.782	.636	.914	.666	.267	.507	.605		.518	.345
Meat overall	**Pearson Correlation**	-.160	-.040	-.300	-.222	-.254	.028	.106	.055	.008	.189	1	.086
	Sig. (2-tailed)	.584	.891	.298	.447	.381	.925	.717	.853	.978	.518		.770
Slaughter overall	**Pearson Correlation**	**-.917†**	**-.625***	-.116	**-.602***	-.036	.134	-.317	.126	.118	-.273	.086	1
	Sig. (2-tailed)	**.000**	**.017**	.694	**.023**	.903	.648	.269	.667	.687	.345	.770	
	N	*14*	*14*	*14*	*14*	*14*	*14*	*14*	*14*	*14*	*14*	*14*	*14*

† Correlation is significant at the 0.01 level (2-tailed test to measure correlations in both positive and negative directions)

* Correlation is significant at the 0.05 level (2-tailed test to measure correlations in both positive and negative directions)

Table 11: Relationship between meat-eaters' attitudes towards animals' slaughter and evaluating farm animals: regression analysis

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	6.734	1.070		6.295	.000
Bodies	.215	.114	.235	1.891	.064
Biodiversity	**-.370**	**.157**	**-.365**	**-2.348**	**.023**
Money	.131	.164	.135	.798	.428
Appearance	.152	.182	.136	.833	.409
Rarity	.194	.172	.201	1.129	.264
Affection	-.056	.257	-.044	-.217	.829
Status	-.257	.190	-.210	-1.355	.181
Sentience	-.137	.233	-.145	-.586	.560
Abilities	.292	.202	.277	1.445	.154
Intelligence	**-.590**	**.273**	**-.567**	**-2.157**	**.036**
Souls	.097	.183	.096	.529	.599

Dependent Variable: Overall slaughter value1
$R^2 = .38$

Table 12: Relationship between meat-eaters' range of meat consumption and evaluating farm animals: regression analysis

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	2.225	.587		3.788	.000
Bodies	**.145**	**.062**	**.310**	**2.323**	**.024**
Biodiversity	-.109	.086	-.211	-1.266	.211
Money	.067	.090	.135	.743	.461
Appearance	.121	.100	.213	1.213	.231
Rarity	.045	.095	.091	.476	.636
Affection	.105	.141	.161	.742	.462
Status	-.091	.104	-.145	-.870	.388
Sentience	-.188	.128	-.389	-1.469	.148
Abilities	.052	.111	.097	.471	.640
Intelligence	-.077	.150	-.145	-.513	.610
Souls	.141	.101	.274	1.399	.168

Dependent Variable: meat consumption
$R^2 = .29$

Table 13: Relationship between meat-eaters' attitudes towards meat-eating and farm animals' component evaluations: regression analysis

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	9.353	.931		10.048	.000
Personal	.003	.185	.002	.015	.988
Consumption & Global	.214	.148	.186	1.446	.153
Intrinsic	**-.606**	**.138**	**-.583**	**-4.400**	**.000**

Dependent Variable: Overall meat value1
$R^2 = .30$

Table 14: Relationship between meat-eaters' attitudes towards animals' slaughter and farm animals' component evaluations: regression analysis

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	6.856	1.091		6.284	.000
Personal	-.004	.217	-.003	-.020	.984
Consumption & Global	.213	.174	.170	1.225	.225
Intrinsic	**-.513**	**.161**	**-.454**	**-3.180**	**.002**

Dependent Variable: Overall slaughter value1
$R^2 = .18$

Table 15: Relationship between vegetarians' attitudes towards animals and evaluating farm animals: regression analysis

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	-2.014	.953		-2.114	.169
Bodies	.137	.116	.189	1.175	.361
Biodiversity	.863	.084	.736	10.265	.009
Money	.017	.147	.022	.117	.918
Appearance	.414	.237	.208	1.746	.223
Rarity	-.031	.086	-.035	-.357	.755
Affection	.285	.162	.259	1.759	.221
Status	**-.518**	**.103**	**-.606**	**-5.021**	**.037**
Sentience	.513	.132	.533	3.875	.061
Abilities	-1.468	.453	-2.013	-3.242	.083
Intelligence	1.485	.477	2.064	3.112	.090
Souls	-.436	.131	-.529	-3.314	.080

Dependent Variable: Overall animal value1
$R^2 = 1$

Table 16: Relationship between vegetarians' attitudes towards meat-eating and evaluating farm animals: regression analysis

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	-5.034	1.627		-3.094	.090
Bodies	**1.691**	**.199**	**2.234**	**8.501**	**.014**
Biodiversity	-.027	.144	-.022	-.189	.868
Money	-.176	.250	-.212	-.703	.555
Appearance	-.517	.405	-.248	-1.277	.330
Rarity	**-.674**	**.147**	**-.727**	**-4.597**	**.044**
Affection	.540	.276	.468	1.953	.190
Status	-.198	.176	-.221	-1.121	.379
Sentience	.949	.226	.940	4.196	.052
Abilities	**-4.713**	**.773**	**-6.172**	**-6.094**	**.026**
Intelligence	**5.872**	**.815**	**7.792**	**7.203**	**.019**
Souls	**-1.414**	**.224**	**-1.641**	**-6.300**	**.024**

Dependent Variable: Overall meat value1
$R^2 = .99$

Table 17: Relationship between vegetarians' attitudes towards animals' slaughter and evaluating farm animals: regression analysis

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	2.761	.941		2.934	.099
Bodies	-.398	.115	-.597	-3.461	.074
Biodiversity	**-.614**	**.083**	**-.567**	**-7.391**	**.018**
Money	.566	.145	.773	3.909	.060
Appearance	**1.392**	**.234**	**.756**	**5.940**	**.027**
Rarity	**.454**	**.085**	**.555**	**5.351**	**.033**
Affection	-.344	.160	-.339	-2.154	.164
Status	**-.488**	**.102**	**-.618**	**-4.786**	**.041**
Sentience	-.426	.131	-.479	-3.255	.083
Abilities	**5.051**	**.447**	**7.501**	**11.289**	**.008**
Intelligence	**-4.656**	**.472**	**-7.007**	**-9.873**	**.010**
Souls	-.329	.130	-.433	-2.533	.127

Dependent Variable: Overall slaughter value1
$R^2 = 1$

Table 18: Relationship between vegetarians' attitudes towards animals and farm animals' component evaluations: regression analysis

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	4.732	2.984		1.586	.144
Personal	-.217	.383	-.141	-.568	.583
Consumption & Global	.172	.280	.149	.615	.553
Intrinsic	**.552**	**.209**	**.656**	**2.643**	**.025**

Dependent Variable: Overall animal value1
$R^2 = .42$

Table 19: Why meat-eaters eat meat: regression analysis

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	2.638	2.381		1.108	.273
Taste	.151	.243	.101	.621	.537
Natural	-.009	.184	-.008	-.048	.962
Look/smell	.074	.165	.073	.451	.654
Habit	**.398**	**.156**	**.390**	**2.554**	**.014**
Value	.063	.123	.068	.509	.613
Didn't occur	-.002	.111	-.003	-.021	.983
Organic	.177	.134	.203	1.316	.194
Celebration	-.097	.144	-.111	-.674	.504
No alternative	-.007	.123	-.009	-.058	.954
Butcher/farmer	-.249	.170	-.247	-1.464	.149
Religious	.036	.139	.042	.255	.799
Others	.068	.142	.073	.481	.632
Mistake	-.037	.238	-.030	-.158	.875

Dependent Variable: Meat overall1
$R^2 = .27$

Table 20: Why meat-eaters eat meat: factor analysed regression analysis

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	4.483	1.931		2.321	.024
Principled	.058	.172	.045	.336	.738
Senses & Natural	.161	.186	.108	.864	.391
Normalised	**.352**	**.157**	**.280**	**2.243**	**.029**
External pressure	-.212	.157	-.183	-1.348	.183

Dependent Variable: Meat overall
$R^2 = .15$

Table 21: Relationship between attitudes towards animals' slaughter and avoiding meat: regression analysis

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	5.844	1.650		3.541	.024
Ethical	-.399	.150	-.549	-2.657	.057
Environmental	.040	.192	.045	.206	.847
Dislike appearance	-.008	.224	-.012	-.035	.973
Health	**-.291**	**.086**	**-.445**	**-3.404**	**.027**
Dislike smell	.294	.215	.447	1.365	.244
Dislike taste	.032	.131	.046	.242	.820
Religious	**-.298**	**.082**	**-.556**	**-3.632**	**.022**
Expense	.871	.379	.736	2.300	.083
Unavailable	-.278	.343	-.208	-.810	.463

Dependent Variable: Slaughter overall
$R^2 = .98$

Table 22: Relationship between attitudes towards animals' slaughter and factor analysed reasons for avoiding meat: regression analysis

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	9.948	1.496		6.650	.000
Religious & Dislike	-.155	.113	-.207	-1.369	.201
Meatless Meat-eater	.073	.198	.055	.366	.722
Principled & Health	**-.770**	**.134**	**-.870**	**-5.746**	**.000**

a Dependent Variable: Slaughter overall
$R^2 = .77$

Table 23: Relationship between meat-eaters' attitudes and experience of dissonance: regression analysis

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	5.716	1.946		2.937	.005
Animal overall	.152	.188	.090	.806	.423
Meat overall	-.122	.159	-.108	-.767	.446
Slaughter overall	**-.486**	**.147**	**-.466**	**-3.299**	**.002**
Meat consumption	.266	.227	.131	1.172	.246

Dependent Variable: Dissonance2
$R^2 = .29$

Table 24: Relationship between meat-eaters' attitudes and increase in dissonance: regression analysis

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	-.482	1.765		-.273	.786
Animal overall	.174	.171	.128	1.017	.313
Meat overall	.217	.144	.238	1.506	.137
Slaughter overall	**-.322**	**.134**	**-.384**	**-2.414**	**.019**
Meat consumption	.153	.206	.094	.746	.459

Dependent Variable: Dissonance increase
$R^2 = .10$

Table 25: Relationship between meat-eaters' attitudes and evaluating animals for intrinsic reasons: regression analysis

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	4.018	1.791		2.243	.029
Animal overall1	**.503**	**.151**	**.351**	**3.342**	**.001**
Meat overall1	**-.404**	**.133**	**-.420**	**-3.041**	**.004**
Slaughter overall1	-.158	.128	-.179	-1.237	.221
Meat consumption	.011	.185	.006	.059	.953
Dissonance2	.011	.103	.013	.108	.914
Normalised	.125	.134	.104	.931	.356

Dependent Variable: Intrinsic
$R^2 = .40$

Table 26: Relationship between meat-eaters' attitudes and overall attitudes towards animals' slaughter: regression analysis

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	1.803	1.893		.953	.345
Animal overall1	.267	.164	.165	1.624	.110
Meat overall1	**.471**	**.132**	**.434**	**3.564**	**.001**
Intrinsic	-.165	.133	-.146	-1.237	.221
Normalised	-.097	.138	-.071	-.707	.482
Dissonance2	**-.312**	**.097**	**-.325**	**-3.208**	**.002**
Meat consumption	.239	.186	.122	1.283	.205

Dependent Variable: Slaughter overall
$R^2 = .51$

Table 27: Relationship between meat-eaters' attitudes and overall attitudes towards eating meat: regression analysis

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	4.764	1.608		2.962	.004
Animal overall1	.088	.152	.059	.582	.563
Intrinsic	**-.345**	**.114**	**-.332**	**-3.041**	**.004**
Normalised	**.310**	**.118**	**.247**	**2.617**	**.011**
Dissonance2	-.046	.095	-.052	-.484	.631
Meat consumption	-.034	.171	-.019	-.199	.843
Slaughter overall1	**.387**	**.108**	**.420**	**3.564**	**.001**

Dependent Variable: Meat overall
$R^2 = .53$

Table 28: Relationship between meat-eaters' attitudes and overall attitudes towards farm animals: regression analysis

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	5.291	1.329		3.980	.000
Intrinsic	**.326**	**.097**	**.466**	**3.342**	**.001**
Normalised	-.100	.108	-.118	-.921	.361
Dissonance2	.053	.083	.090	.640	.525
Meat consumption	.094	.148	.078	.632	.530
Slaughter overall1	.166	.102	.268	1.624	.110
Meat overall1	.067	.115	.100	.582	.563

Dependent Variable: Animal overall
$R^2 = .21$

Table 29: Relationship between vegetarians' attitudes and overall attitudes towards farm animals: regression analysis

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	5.838	2.113		2.763	.022
Intrinsic	**.503**	**.203**	**.597**	**2.481**	**.035**
Dissonance2	-.157	.162	-.236	-.971	.357
Slaughter overall1	-.227	.262	-.209	-.864	.410
Meat overall1	.253	.232	.265	1.090	.304

Dependent Variable: Animal overall
$R^2 = .50$

Table 30: Reliability statistics of meat-eaters' Intrinsic component

Reliability Statistics

Cronbach's Alpha	N of Items
.915	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Souls	15.8398	63.693	.728	.916
Sentience	14.9062	56.120	.868	.867
Intelligence	15.5820	59.460	.890	.861
Abilities	14.9258	64.874	.747	.909

Table 31: Reliability statistics of meat-eaters' Normalised component/Habit variable and variance explained

Reliability Statistics

Cronbach's Alpha	N of Items
.456	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Habit	13.08	23.406	.414	.163
Value	13.64	27.155	.173	.528
Didn't occur	13.97	18.475	.291	.358

Communalities

	Initial	Extraction
Habit	1.000	.668
Value	1.000	.263
Didn't occur	1.000	.549

Communalities

	Initial	Extraction
Habit	1.000	.668
Value	1.000	.263
Didn't occur	1.000	.549

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.480	49.326	49.326	1.480	49.326	49.326
2	.922	30.729	80.055			
3	.598	19.945	100.000			

Extraction Method: Principal Component Analysis.

Table 32: Reliability statistics of vegetarians' Intrinsic component

Reliability Statistics

Cronbach's Alpha	N of Items
.957	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Vsouls	22.5179	75.101	.888	.946
Vsentience	21.3036	84.079	.834	.965
V intelligence	22.6607	66.169	.945	.930
Vabilities	22.6607	66.775	.947	.928

Table 33: Reliability statistics of vegetarians' Principled & Health component/Ethical variable and variance explained

Reliability Statistics

Cronbach's Alpha	N of Items
.779	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
VEthical	15.86	23.824	.765	.526
VHealth	17.50	25.346	.559	.784
VEnvironmental	16.21	33.104	.562	.765

Component Matrix[a]

	Component
	1
VEthical	.918
VHealth	.786
VEnvironmental	.806

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Table 34: Relationship between meat-eaters' dissonance and factor analysed components of evaluating farm animals: regression analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.343[a]	.118	.073	2.913

a. Predictors: (Constant), Mintrinsic, MConsumption & Global, MPersonal

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	67.804	3	22.601	2.664	.056[a]
	Residual	509.057	60	8.484		
	Total	576.861	63			

a. Predictors: (Constant), Mintrinsic, MConsumption & Global, MPersonal

b. Dependent Variable: MDissonance2

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.937	1.181		3.335	.001
	MPersonal	.090	.235	.063	.381	.705
	MConsumption & Global	-.310	.188	-.237	-1.646	.105
	Mintrinsic	.382	.175	.324	2.184	.033

a. Dependent Variable: MDissonance2

Table 35: Relationship between meat-eaters' dissonance increase and overall attitudes towards eating meat, farm animals and animals' slaughter, and meat consumption: regression analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.318[a]	.101	.040	2.38706

a. Predictors: (Constant), MMeat consumption, MMeat overall1, MAnimal overall1, MSlaughter overall1

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	37.807	4	9.452	1.659	.172[a]
	Residual	336.186	59	5.698		
	Total	373.993	63			

a. Predictors: (Constant), MMeat consumption, MMeat overall1, MAnimal overall1, MSlaughter overall1

b. Dependent Variable: meatdissonanceincrease

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-.482	1.765		-.273	.786
	MAnimal overall1	.174	.171	.128	1.017	.313
	MMeat overall1	.217	.144	.238	1.506	.137
	MSlaughter overall1	-.322	.134	-.384	-2.414	.019
	MMeat consumption	.153	.206	.094	.746	.459

a. Dependent Variable: meatdissonanceincrease

Table 36: Relationship between meat-eaters' reasons for evaluating animals and meat consumption: regression analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.536[a]	.287	.136	1.381

a. Predictors: (Constant), Mabilities, Mbodies, Mstatus, Menvironment, M appearance, Msouls, Mmoney, Mrarity, M affection, Msentience, M intelligence

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	39.883	11	3.626	1.902	.060[a]
	Residual	99.117	52	1.906		
	Total	139.000	63			

a. Predictors: (Constant), Mabilities, Mbodies, Mstatus, Menvironment, M appearance, Msouls, Mmoney, Mrarity, M affection, Msentience, M intelligence

b. Dependent Variable: MMeat consumption

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.225	.587		3.788	.000
	M appearance	.121	.100	.213	1.213	.231
	M affection	.105	.141	.161	.742	.462
	Menvironment	-.109	.086	-.211	-1.266	.211
	Mmoney	.067	.090	.135	.743	.461
	Mrarity	.045	.095	.091	.476	.636
	Mstatus	-.091	.104	-.145	-.870	.388
	Mbodies	.145	.062	.310	2.323	.024
	Msouls	.141	.101	.274	1.399	.168
	Msentience	-.188	.128	-.389	-1.469	.148
	M intelligence	-.077	.150	-.145	-.513	.610
	Mabilities	.052	.111	.097	.471	.640

a. Dependent Variable: MMeat consumption

Table 37: Increase in cognitive dissonance during the study

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	MVDissonance1 & MVDissonance2	78	.660	.000
Pair 2	MVDissonance1 & MVDissonance3	78	.620	.000
Pair 3	MVDissonance2 & MVDissonance3	78	.959	.000
Pair 4	MDissonance1 & MDissonance2	64	.626	.000
Pair 5	MDissonance1 & MDissonance3	64	.586	.000
Pair 6	MDissonance2 & MDissonance3	64	.956	.000
Pair 7	VDissonance1 & VDissonance2	14	.694	.006
Pair 8	VDissonance1 & VDissonance3	14	.657	.011
Pair 9	VDissonance2 & VDissonance3	14	.966	.000

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	MVDissonance1 - MVDissonance2	-1.333	2.476	.280	-1.892	-.775	-4.756	77	.000
Pair 2	MVDissonance1 - MVDissonance3	-1.231	2.685	.304	-1.836	-.625	-4.048	77	.000
Pair 3	MVDissonance2 - MVDissonance3	.103	.936	.106	-.108	.314	.968	77	.336
Pair 4	MDissonance1 - MDissonance2	-1.323	2.436	.305	-1.932	-.714	-4.344	63	.000
Pair 5	MDissonance1 - MDissonance3	-1.250	2.627	.328	-1.906	-.594	-3.807	63	.000
Pair 6	MDissonance2 - MDissonance3	.073	.925	.116	-.158	.304	.631	63	.530
Pair 7	VDissonance1 - VDissonance2	********	**********	********	********	********	-1.882	13	.082
Pair 8	VDissonance1 - VDissonance3	-1.143	3.043	.813	-2.900	.614	-1.405	13	.183
Pair 9	VDissonance2 - VDissonance3	********	**********	********	********	********	.884	13	.393

Table 38: Differences between overall explicit attitudes towards eating meat, farm animals and animals' slaughter

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	MAnimal overall1 & MMeat overall1	64	-.043	.736
Pair 2	MMeat overall1 & MSlaughter overall1	64	.615	.000
Pair 3	VAnimal overall1 & VMeat overall1	14	.189	.518
Pair 4	VAnimal overall1 & VSlaughter overall1	14	-.273	.345
Pair 5	VMeat overall1 & VSlaughter overall1	14	.086	.770
Pair 6	MAnimal overall1 & MSlaughter overall1	64	.095	.456

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	MAnimal overall1 - MMeat overall1	.563	3.280	.410	-.257	1.382	1.372	63	.175
Pair 2	MMeat overall1 - MSlaughter overall1	2.063	2.455	.307	1.449	2.676	6.721	63	.000
Pair 3	VAnimal overall1 - VMeat overall1	5.571	3.106	.830	3.778	7.365	6.711	13	.000
Pair 4	VAnimal overall1 - VSlaughter overall1	6.143	3.655	.977	4.032	8.253	6.288	13	.000
Pair 5	VMeat overall1 - VSlaughter overall1	.571	3.180	.850	-1.264	2.407	.672	13	.513
Pair 6	MAnimal overall1 - MSlaughter overall1	2.625	3.264	.408	1.810	3.440	6.435	63	.000

Table 39: Differences between implicit attitudes towards eating meat, farm animals and animals' slaughter

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
ANIMALGMEATB	Equal variances assumed	6.678	.012	1.894	76	.062	136.5271	72.0663	-7.0054	280.0596
	Equal variances not assumed			2.889	40.883	.006	136.5271	47.2625	41.0702	231.9840
MEATGANIMALB	Equal variances assumed	1.061	.306	-.186	76	.853	-20.09127	108.07929	-235.350	195.16728
	Equal variances not assumed			-.290	43.717	.773	-20.09127	69.23176	-159.644	119.46166
SLAUGHTERGMEATB	Equal variances assumed	1.533	.219	1.101	76	.275	97.04650	88.16800	-78.55529	272.64830
	Equal variances not assumed			1.625	37.445	.113	97.04650	59.72797	-23.92538	218.01838
MEATGSLAUGHTERB	Equal variances assumed	1.824	.181	-.351	76	.726	*********	*********	********	********
	Equal variances not assumed			-.437	25.799	.666	*********	*********	********	********
SLAUGHTERGANIMALB	Equal variances assumed	.470	.495	.572	76	.569	*********	*********	********	********
	Equal variances not assumed			.728	26.916	.473	*********	*********	********	********
ANIMALGSLAUGHTERB	Equal variances assumed	.322	.572	.949	76	.345	82.67842	87.09678	-90.78985	256.14670
	Equal variances not assumed			1.365	35.015	.181	82.67842	60.57329	-40.29006	205.64691

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	MANIMALGMEATB & MMEATGANIMALB	64	.491	.000
Pair 2	MSLAUGHTERGMEATB & MMEATGSLAUGHTERB	64	.617	.000
Pair 3	MSLAUGHTERGANIMALB & MANIMALGSLAUGHTERB	64	.555	.000
Pair 4	VANIMALGMEATB & VMEATGANIMALB	14	.705	.005
Pair 5	VSLAUGHTERGMEATB & VMEATGSLAUGHTERB	14	.802	.001
Pair 6	VSLAUGHTERGANIMALB & VANIMALGSLAUGHTERB	14	.601	.023

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	MANIMALGMEATB - MMEATGANIMALB	-151.664	349.82440	43.72805	-239.048	-64.28094	-3.468	63	.001
Pair 2	MSLAUGHTERGMEATB - MMEATGSLAUGHTERB	********	**********	********	********	********	4.693	63	.000
Pair 3	MSLAUGHTERGANIMALB - MANIMALGSLAUGHTERB	********	**********	********	********	********	6.511	63	.000
Pair 4	VANIMALGMEATB - VMEATGANIMALB	********	**********	********	********	********	-8.927	13	.000
Pair 5	VSLAUGHTERGMEATB - VMEATGSLAUGHTERB	********	**********	********	********	********	1.032	13	.321
Pair 6	VSLAUGHTERGANIMALB - VANIMALGSLAUGHTERB	********	**********	********	********	********	5.628	13	.000

Table 40: Change in overall explicit attitudes towards eating meat, farm animals and animals' slaughter during the study

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	MAnimal overall1 - MAnimal overall2	.328	1.861	.233	-.137	.793	1.411	63	.163
Pair 2	MMeat overall1 - MMeat overall2	.688	1.833	.229	.230	1.145	3.000	63	.004
Pair 3	MSlaughter overall1 - MSlaughter overall2	.641	2.003	.250	.140	1.141	2.559	63	.013
Pair 4	VAnimal overall1 - VAnimal overall2	.000	.392	.105	-.226	.226	.000	13	1.000
Pair 5	VMeat overall1 - VMeat overall2	1.071	2.303	.615	-.258	2.401	1.741	13	.105
Pair 6	VSlaughter overall1 - VSlaughter overall2	.714	1.684	.450	-.258	1.686	1.587	13	.136

Table 41: Regression weights and squared multiple correlations for path analysis

		Estimate
M1 <---	I	-.469
M1 <---	Habit	.344
S1 <---	M1	.615
D2 <---	S1	-.505
S2 <---	D2	-.665
M2 <---	S2	.662

	Estimate
M1	.382
S1	.378
D2	.255
S2	.443
M2	.438

APPENDIX I

Focus group transcripts (see associated CD)

APPENDIX J

IAT programs (see associated CD)

APPENDIX K

Quantitative data (see associated CD)