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THE COMPLEMENTARITY
OF ECONOMIC APPLICATIONS OF
COGNITIVE DISSONANCE THEORY AND
PERSONAL CONSTRUCT PSYCHOLOGY

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ABSTRACT

Although personal construct psychology (PCP) and cognitive dissonance theory (CDT) have both been used to make sense of a variety of forms of economic behaviour, little attempt has hitherto been made to consider their theoretical compatibility and the potential intellectual synergy between them. This paper attempts to do so. It seems worthwhile to explore the compatibility of PCP and CDT since much work with CDT focuses on forms of behaviour that appear to involve twisting or turning a blind eye to information that is potentially at odds with cherished beliefs, whereas PCP portrays decision-makers as lay scientists seeking to predict and control events. CDT leads to questions about how far divorced from the methodologies of professional scientists are lay strategies that seem to involve data mining with a view to verification, rather than concerted attempts to find the range beyond which hypotheses are falsified. Having eliminated potential dissonance between PCP and CDT, the paper goes on to consider how ideas from PCP (in particular Hinkle's work on implicational linkages between constructs) may help us understand which beliefs become the targets of activities aimed at reducing dissonance. It ends by showing how choice becomes very much a path-dependent activity when seen from the standpoint of a unified PCP/CDT-based analysis.

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COGNITIVE DISSONANCE AND PERSONAL CONSTRUCTS

1. INTRODUCTION

Although Festinger's (1957) cognitive dissonance theory (hereafter CDT) and Kelly's (1955) personal construct psychology (hereafter PCP) have both been used to make sense of a variety of forms of economic behaviour, there has so far been little interest in their theoretical compatibility and the potential intellectual synergy between them. Pioneering uses of CDT by economists and decision theorists such as Hirschman (1965), Akerlof and Dickens (1982), Maital (1982), Elster (1983) and Gilad (1986) have made no mention of PCP, whilst those who have seen great scope for using PCP in economics and marketing, such as Gutman (1982), Loasby (1983), Earl (1983, 1984) and various contributors to Earl (ed.) (1988) have tended to ignore contributions that employed CDT, or have mentioned CDT only in passing (as in Earl, 1986, p. 257). Psychologists likewise seem to have seen CDT and PCT as contributions that should be kept in separate compartments. Of the three 'standard' works reviewing PCP, namely, Bannister and Mair (1968), Bannister and Fransella (1980) and Adams-Webber (1979), only Bannister and Fransella make any mention of CDT and even then they merely mention it in passing as an example of something presented as a 'theory' which they (1980, pp. 10-11) construe merely as a 'notion'. While Festinger could initially be excused from ignorance of Kelly's work, which appeared only whilst he was completing his (1957) book, neither he nor his associates displayed any awareness of PCP and its associated research methods in writing up their later empirical work (Festinger, ed., 1964). This paper stems from a belief that the impact of both lines of thinking could have been greater had efforts been made to integrate them. I will try to show how, though an exploration of the theoretical relationship between PCP and CDT, we may gain a better understanding of how patterns of choice emerge as time unfolds.

2. THE ECONOMICS OF REDUCING COGNITIVE DISSONANCE

Festinger starts with a definition of dissonance as the existence of non-fitting relations among cognitions. After recognizing that people experience cognitive dissonance because they are not in control of the information they receive and because many things tend to be a mixture of contradictions, he (1957, p. 3) then advanced two basic hypotheses:

COGNITIVE DISSONANCE AND PERSONAL CONSTRUCTS

1. The existence of dissonance, being psychologically uncomfortable, will motivate the person to try to reduce the dissonance and achieve consonance.
2. When dissonance is present, in addition to trying to reduce it the person will actively avoid situations and information which would increase the dissonance.

Festinger's (1957) book elaborated these hypotheses and many subsidiary ones, and a lesser-known volume reporting experimental investigations of them appeared some years later (Festinger, ed., 1964). It is not surprising that attempts have been made to frame economic behaviour in terms of strategies aimed at reducing cognitive dissonance. Many of Festinger's own illustrative scenarios actually concern economic situations, such as car ownership, employment choices, decisions not to give up smoking, or even minor decisions about whether to continue on a picnic expedition as gathering clouds start to raise questions about the likely weather at the destination. His scenarios call into question core assumptions of orthodox theory, for they portray decision-makers as prone to go to great lengths to avoid treating irrecoverable costs as having been mistakenly sunk in situations where they encounter information that questions the wisdom of their decisions. Festinger's theory also suggests that, rather than facing up to the fact that life is full of opportunity costs, choosers often may be expected to try gather together information that will enable them to rationalise away the sacrifices that they have made as a result of committing themselves to particular courses of action. For example, after opting to buy a particular item, they may devote a great deal of attention to advertisements for it, all the while doing their best to ignore advertisements for and reviews of the alternatives that they rejected. (This last position was modified by Festinger in the light of experimental work which showed that, although people are prone to look at more advertisements for what they had just purchased, they nonetheless tend to look at some advertisements for rejected possibilities: he recognized that confident people might actively expose themselves to dissonant material in order to demonstrate that they could counterargue: see Festinger, ed., 1964, chapter 4 and p. 96.) Furthermore, CDT seems to run counter to the idea of 'given preferences' over goods, for it suggests that once a person has made a commitment to a particular course of action she will tend to re-evaluate alternatives in the direction of favouring the chosen scheme or disfavouring the rejected ones.

In the hands of economists, CDT has been used to make sense of a wide variety of behaviours that might otherwise prove puzzling. An early reference is a paper by Hirschman (1965) on obstacles to economic development. He argued that the kinds of societies most likely to develop rapidly would be ones that are prone to let their motivation to solve their

COGNITIVE DISSONANCE AND PERSONAL CONSTRUCTS

problems outrun their understanding of how to do so. Having plunged headlong into attempting to promote development they would ignore non-cognitive 'barriers' such as poor natural resource endowments. Thus they might achieve more than somewhat better endowed societies that tend to avoid tackling problems unless easy solutions seem available. Better known is Maital's (1982, pp. 142–3) use of CDT to explain why, despite believing that 'debt is wrong', American consumers were happily getting themselves deeper into debt with the aid of credit cards: the fact that credit cards can be used merely as means of payment rather than for their extended credit facilities means that, having decided to purchase an item, a person can implement her decision without having to admit to herself that she was getting into debt, for she can tell herself that she will pay it off in full when her next statement arrives.

Tendencies to speculate have also been explored with the aid of CDT. Kaish (1986) has used the analogy of skaters on a frozen pond to explain how participants in a bull market may justify ignoring warnings that a crash is imminent because asset prices have become dangerously divorced from levels implied by underlying fundamentals: someone having a great time skating may see others joining her on the pond and yet justify ignoring warnings about the danger of the ice cracking by reminding herself how cold it has been lately and how thick, therefore, the ice must be (for a related discussion of the effects of dissonance on stock purchasing behaviour, see Klausner, 1984, pp. 71–5). Probably the most rigorous of economic applications of CDT to date is the work of Akerlof and Dickens (1982), which considers, amongst other things, the role for compulsory old age insurance (since people may feel uncomfortable contemplating themselves in retirement and therefore avoid considering things, such as life assurance schemes, that bring such thoughts to mind) and safety legislation (since people who view themselves as smart may choose to ignore the dangers of their well-paying but hazardous work environments). However, one thing they did not consider was whether or not politicians are likely to use dissonance-reducing techniques to sweep aside economists' arguments for potentially expensive policy measures.

More recently, CDT has been employed to understand how economists continue to cling to their cherished theoretical and policy positions in the face of inconvenient evidence from the real world. Earl and Wakeley (2007) explore the adherence to the theory of perfect competition in the face of abundant evidence of the existence of increasing returns, and the consequences that this has for classroom teaching, while Kessler (2010) has used CDT to analyse how die-hard *laissez faire* economists have dealt with the relationship between financial deregulation and the global financial crisis. There has also been some recognition of CDT's potential as a tool for analysing the position of 'climate change sceptics' and some of the

COGNITIVE DISSONANCE AND PERSONAL CONSTRUCTS

challenges policymakers face in getting consumers to change their attitudes in ways that will help reduce carbon emissions—for example, see section 5 below and Earl and Wakeley (2009).

The incorporation of dissonance-reducing behaviour into economic models does not require the abandonment of the assumption that decision-makers choose by weighing up costs and benefits. Rather, it requires the recognition that dissonant thoughts about the wisdom of a prior choice impose a *mental* cost and hence that a person may be prepared to incur other costs up to this level if this is the price that must be paid to avoid dissonance. Now, of course, one way to reduce dissonance is to discard some of one's beliefs and replace them with others that fit better with those that one retains. Unfortunately, this strategy is by no means guaranteed to be costless once one has 'made up one's mind'. For example, if a chosen commodity is turning out to be rather disappointing, one could escape the need to engage in dissonance reducing actions by simply telling oneself that one had made a mistake and ceasing to expect it to perform so well. But there will also be costs to changing one's mindset: for example, to admit that one has not taken a very good decision may simply generate another kind of dissonance by raising distressing questions about the viability of other expectations. To change one's mind without worsening the dissonance problem one may need to incur mental costs of acquiring new perspectives and reframing ideas about things in terms of these perspectives. These costs are additional to any pecuniary costs associated with liquidating prior commitments to commodities in imperfect markets. The uncertainty associated with costs of trying to find a new way of looking at things may further encourage a decision-maker to continue to struggle along with her existing, ill-matched beliefs. In short, if a person is to be induced to revamp her expectations and change course, it is necessary that she be aware of opportunities that offer compensation for both mental and commodity-related transaction costs of change.

In Festinger's view of decision-making, switches between different sets of ideas *can* be achieved without any bother *prior* to choice; it is as if, during the process of evaluating alternatives, chooser's mindset takes the form of putty, capable of being moulded into a variety of shapes. This putty, or at least, part of it, becomes more akin to clay once the person's mind is made up: a commitment is made to a particular point of view, as well as to a particular course of action and its associated commodities. Only then does dissonance become a problem, for with her mind made up in a particular way the decision-maker can no longer dismiss inconsistencies between her beliefs and/or actions by telling herself she is not committed to a particular way of looking at things. Thus, suppose that, after making up her mind, a decision-maker encounters challenges to elements in the set of ideas to which she has committed herself, and judges that alternative courses of

COGNITIVE DISSONANCE AND PERSONAL CONSTRUCTS

action and beliefs that seem associated with these alternatives do not offer advantages on a grand enough scale to make change appear attractive. Depending on the value that the decision-maker places on cognitive consistency, she will be prepared, up to a point, to incur costs of gathering information that neutralizes challenges to the mindset to which she has committed herself. She may also incur costs to avoid confronting such challenges in the first place, for example by imposing restrictions on the social circles in which she moves or on the media she uses or the information sources that she consults within a particular medium. However, an upper limit to the costs that a person will be incur to achieve cognitive consistency between her existing beliefs is always set by the expected costs of changing her way of looking at the world.

3. DISSONANCE REDUCTION: A PERSPECTIVE FROM THE STANDPOINT OF PERSONAL CONSTRUCT PSYCHOLOGY

Personal construct psychology, pioneered by Kelly (1955), shares with CDT the idea that a concern with beliefs about the nature of things may underpin much of human action—in other words, that often choices may be more usefully seen as being determined by a concern with the validity of views of the world than with attempts to obtain pleasure and avoid pain. But PCP makes a more sweeping suggestion about the nature of human action: it suggests not merely that we should see people as trying to avoid situations that lead to them being unable to avoid conflicting mental constructions of events, but also that we should see them as if they are intent, like scientists, on predicting and controlling events. To inquiring people, choice is basically an experimental activity, not the solution of an optimisation problem, and commodities are consumed as means of making discoveries and achieving control. Life becomes meaningless without hypotheses to test: in other words, without ‘things to look forward to’, without the opportunity to find what things ‘are like’. Life becomes terrifying if one is at the mercy of events to such an extent that nothing seems under one’s control.

Now, it may seem at first sight that many of the kinds of behaviour identified by Festinger and his colleagues are not what one would expect of people bent on enhancing their abilities to predict and control events. A person who becomes aware of non-fitting constructs in her view of the world has a problem stemming from a mistake of logic, from an empirical anomaly, or from problems in constructs pertaining to the reliability of the data in question. However, CDT suggests that instead of seeing dissonance as implying an opportunity for the reformulation of causal chains and the development of new hypotheses to test, people may go to extreme lengths

COGNITIVE DISSONANCE AND PERSONAL CONSTRUCTS

to avoid refashioning some of their ideas. Moreover, instead of seeking to find the limitations of their hypotheses by testing them to destruction, people seem to seek to verify their hypotheses by rigging their data sets, gathering information from sources likely to be supportive, preferring to confront only those situations where they believe they will not encounter anomalies, and turning a blind eye when unavoidably placed in situations that have uncomfortable implications for their predictive systems. We seem to have dissonance between the ideas of man the dissonance reducer and man the scientist.

Fortunately, this dissonance is can be eliminated without us having to adopt the sort of strategies just mentioned. First, we can note that CDT does stress that, in addition to the methods just described, people may actively search for new kinds of information and broader contexts within which dissonant cognitions may lead to a similar end result (Festinger, 1957, pp. 44-6): in terms of PCP, a person may discover or create new channels of thought according to which previously dissonant constructs are now rendered subordinate to a common superordinate construct. For example, suppose a person has been unable to find a solution to her choice problem that involves no sacrifices—in the language of the literature on decision heuristics, she is unable to find a conjunctive alternative that is adequate in all respects. As she consumes the least unacceptable of the available options, she may actively look for ways of denying the importance of characteristics she has chosen to forego. Alternatively, she may try to see whether or not the plus points of her preferred option may actually enable her to reach apparently blocked outcome by another route.

Secondly, PCP rather overlaps with CDT by its conceptualization of anxiety and the effects that feeling of anxiety have on choice. The suggestion in PCP is that people may hold back from pushing their hypotheses to the limit because they fear that they are poorly equipped to handle the situations in which they might find themselves once they have gone beyond the range of convenience of their existing constructs. With inquisitive behaviour held back by anxiety, the anxious person may seek to justify her ‘stick in the mud’ behaviour by professing an insatiable fascination with the areas of the world to which she chooses to confine herself. Meanwhile, if all goes well, she does not find herself having to deal with the failure of her templates of expectations to fit what she now observes. This line of thinking seems to have much in common with Festinger’s (1957, p. 31) suggestion that fear of dissonance may lead to a reluctance to make commitments. In relating impulsive behaviour to feelings of anxiety, PCP also seems neatly to augment some of Festinger’s remarks in his (1964) work. For example, he notes (p. 5) how Lewin (1951) ‘believed that simply making a decision exerted a stabilising effect on the situation. The person then tended to behave in line with the decision, even

COGNITIVE DISSONANCE AND PERSONAL CONSTRUCTS

if this were difficult to do.’ Later (pp. 154-5), whilst lamenting the lack of research on impulsive choices, Festinger comments that

Perhaps such behavior is a means of avoiding a situation that promises to be a difficult one. If this were the case, one would expect such impulsive decisions more frequently if the decision is important and the person thinks the alternatives would prove very close together in attractiveness. Perhaps such impulsive decisions are made when the information gathering process seems endless. If this were the case, one would expect a greater frequency of impulsive decisions in instances where the person is faced with a large number of alternatives.

From the standpoint of PCP, the chooser’s problem may be that she lacks experience or expertise and feels that, whatever option she selects, she could find herself suffering from regret: if uncertainty and/or information overload make all options seem beyond the range of her constructs, she may reduce the anxiety one feels by taking a plunge one way or another. The choice enables her narrow down the range of possibilities about which she has to worry: in other words, it reduces the demands placed on her hypothesis forming capabilities.

Thirdly, we should note that PCP makes no presumption that people will necessarily run their lives according to methodologies that would win the approval of philosophers of science. If they have no training in scientific method, people are likely to be using methodologies—sets of key assumptions and rules about what should and should not be done or believed—that they have developed for themselves in their light of their experiences in a social setting. These personally constructed ways of viewing the world are what give them their distinctive personalities; indeed, if they did not possess such *systems* for forming and testing theories, people would be unlikely to behave in ways that were at all consistent and predictable. Most of the time, despite their homespun nature, these methodologies are good enough to enable their users to keep out of major trouble. But sometimes they may prove to be grossly dysfunctional. A common example is the case of smokers who form their dissonance avoiding constructs about the lack of danger posed by their habit by making misguided inferences such as by noting that ‘Churchill smoked and *he* lived past ninety!’ (For an excellent study of these types of judgmental failings, see Nisbett and Ross, 1980.)

Fourthly, if we are using academic scientists as our role models of lay behaviour we should recognise that it is debatable whether the methodologies employed by scientists themselves preclude the sort of behaviour hypothesised by Festinger. Recent debates about the methods

COGNITIVE DISSONANCE AND PERSONAL CONSTRUCTS

that economists use are a case in point: there has been much criticism of the practice of ‘data mining’, particularly via adjustments of lead or lag times (Mayer, 1980; Cooley and LeRoy, 1981; Lovell, 1983; and Kuttner, 1985). For example, Cooley and LeRoy (1981, p. 836) considered the literature on the interest elasticity of demand for money and concluded that

The preponderance of empirical studies of the demand for money which show significant negative interest elasticities reflect the unacknowledged prior beliefs of the researcher and not the information content of the data ... The data are such that a modestly energetic specification search will give almost whatever interest elasticity one wishes to extract, particularly if more than one interest rate is included and if the specification search involves extended tinkering with dynamic effects.

With computing becoming ever cheaper it is unlikely that economists will shake off the habit of trying to make data fit their theories, even if journals become more willing to publish papers embodying results that seem to be at odds with the hypotheses being tested. Worse still, as Kuttner (1985, p. 78) notes, ‘Recent innovations, such as “vector auto regressions” and “multivariate auto-regressive moving average” models, in effect have the computer go on automatic pilot and search for correlations almost at random.’

Within debates about the scientific status of hypothesis testing activities of economists, Procrustean imagery has often been used, as with the comment by Mayer (1980, p. 175) that ‘if you torture the data long enough, they will confess.’ PCP also explicitly recognises the possibility of Procrustean behaviour via its conceptualisation of hostility as ‘the continued effort to extort validation evidence in favour of a type of social prediction that has already proved itself a failure’ (Kelly, 1955, p. 510). At its worst, overtly hostile behaviour is a most extreme way of reducing dissonance — far less ‘scientific’ than many of the strategies discussed by Festinger — but most of us lose our tempers and engage in it from time to time. Man the scientist, just like man the dissonance reducer, is not someone who will always willingly recognise cognitive inconsistencies and, if convenient evidence is hard to come by, then what evidence is available may be twisted with the aid of *ad hoc* arguments until it fits.

At the end of the previous section, I tried to frame the limits to dissonance avoiding strategies in economic terms. Now it is appropriate to note that it also appears that cost/benefit considerations seem to limit Procrustean tendencies of scientists. A fascinating case study of this is provided by none other than Adam Smith in his relatively unknown work on the history of astronomy (my discussion here draws on the discussion of

COGNITIVE DISSONANCE AND PERSONAL CONSTRUCTS

it in Skinner, 1979). Smith's study begins with the inverse of Kelly's opening proposition: instead of seeing lay decision-makers as scientists, he began by stressing that scientists are human, which to him meant that they had capacities to reason, imagine and reflect and a desire to achieve a state of mental composure. Anomalous observations pose a threat to mental equilibrium and give rise to a search for ways by which they may be reconciled with the system according to which the person was forming expectations. Smith's study of the development of the Systems of Concentric, and Eccentric, Spheres and the two modern systems of Copernicus and Newton provides ample evidence of how astronomers resemble ordinary decision-makers when it comes to trying to avoid major changes of methodology. As Skinner (1979, pp. 113–14, italics in original) notes,

The essence of Smith's argument would seem to be that each system at the time of its original appearance did satisfy the needs of the imagination, but that each was subject to a process of modification as new problems came to light; a process of modification which resulted in a growing degree of *complexity* which ultimately became unacceptable to the imagination, i.e. to the mind. This in turn paves the way for a new kind of response—the production not just of an account but of an *alternative* account (in this case of the heavens); a new thought system designed to explain the *same* problems as the first, at least in its most complex form, but cast in a more acceptable style — i.e. in a form which relied upon a smaller number of familiar or plausible principles, and which was for this reason more acceptable to the mind.

In other words, when it becomes difficult to reduce dissonance by data mining, one may try to reduce it by increasingly *ad hoc* modifications to one's existing way of looking at the world, but the further accumulation of inconvenient information may mean that this Procrustean strategy begins to founder in the face of bounded rationality, so that ultimately it becomes worthwhile to incur the costs of designing a more manageable system.

4. IMPORTANCE OF BELIEFS AS A FUNCTION OF THEIR IMPLICATIONS

In considering which beliefs the person will opt to maintain when choices between rival sets have to be made, Festinger (1957, p. 16) recognises that the pressure a person will feel to reduce a feeling of dissonance will vary

COGNITIVE DISSONANCE AND PERSONAL CONSTRUCTS

according to the importance to that person of the belief that is being challenged. He also builds his theory around the idea that a person will find it easier to change some notions than others. For example, he writes that,

The maximum dissonance that can possibly exist between any two elements is equal to the total resistance to change of the less resistant element. The magnitude of dissonance cannot exceed this amount because, at this point of maximum possible dissonance, the less resistant element would change, thus eliminating the dissonance (Festinger, 1957, p. 28).

But his theory seems to lack any detailed analysis of why some of the beliefs to which a person has committed herself should be seen by the person as more important than others. The closest he comes is a comment that ‘To the extent that the element is consonant with a large number of other elements and to the extent that changing it would replace these consonants by dissonances, the element will be resistant to change’ (1957, p. 27). This suggestion turns out to have strong parallels in extensions of Kelly’s work on PCP undertaken by Hinkle (1965). (I have discussed these extensions at greater length in Earl, 1986.)

The starting point for Hinkle’s work was the ‘organization corollary’ of Kelly’s theory, which states that ‘each person characteristically evolves, for his convenience in anticipating events, a construction system embracing ordinal relationships between constructs’ (see Kelly 1955, p. 56). In other words, a person’s expectations about things are not simply a collection of unorganised notions; rather, they are structured, with some beliefs being used as the basis for forming other beliefs. Here, the lay scientist’s way of thinking is basically the same as that of, say, an economic scientist who uses ‘core’ axioms (such as profit maximization and transitivity of preferences) as building blocks for developing auxiliary hypotheses that are then tested. Without such a ranking of constructs a person would experience great difficulty in making up her mind about anything, for the validity of any belief is something that can only be judged from the standpoint of an existing way of looking at things. Hinkle studied the ways in which people organised their world-views in terms of which constructs were subordinate to which others, which ones were superordinate to which others, and which ones were unrelated. His work enabled him to quantify, at the level of the individual, what it means to say that a particular change has ‘implications’: if a construct has many subordinate constructs, then a change in that (superordinate) construct will change those subordinate constructs. This may mean that these constructs will now no longer match events as they unfold. The data obtained by Hinkle were not inconsistent with his hypothesis that, the more subordinate implications a construct carries in the

COGNITIVE DISSONANCE AND PERSONAL CONSTRUCTS

mind of a particular person, the more that person will resist making a change in it. The greater the number of implications that a person has attached to a construct that is being challenged, the more, from the standpoint of CDT, we would expect that person to engage in dissonance reducing behaviour in order to avoid changing the construct.

This sort of thinking and behaviour is most easily illustrated with reference to life events such as bereavement, the unexpected walking out of one's spouse, and the loss of one's job. On these occasions, people tend to find it very difficult indeed to believe what has happened and they grasp desperately at possibilities that onlookers may find hard to take seriously. No wonder, because these people are facing the potential destruction of a substantial part of their lives, of what they were looking forward to. No wonder, too, that orthodox economists cling desperately to their often wildly unrealistic core assumptions, without which many of their lower level models would fall apart. But we can also see the same kind of phenomena working in other contexts on a smaller scale.

For example, suppose that I live in Tasmania (as I did from 1984-1991—this example is based on an event that I experienced in 1987), am touring in my car in mainland Australia and that I must be back in Melbourne on a particular date to take up my place on the car ferry, which is fully booked for the next three months. If anything goes wrong with my car, causing me to miss the ferry, chaos could ensue in my life: many of my expectations are predicated on my getting back to Tasmania, with my car, by a particular time. The implications of a breakdown on the mainland are much more dramatic to me than the implications of a breakdown in my home state (unless, of course, the car breaks down on the way to Hobart airport to catch the first stage of an international flight for which no alternative is available). Thus, if a strange whirring noise appears in the car during a mainland trip, I will initially try to avoid facing up with to the possibility that major problems are looming (for example, I may actively investigate the idea that it is just the cooling fan at work in the warmer climate, or something to do with the cassette player). My efforts in this respect will be far greater than if I were simply driving to work and the same noise appeared. If I exhaust these possibilities and check with a garage only to be told a wheel bearing is failing and replacement parts will not be available in time, I may still find it very difficult indeed to believe that the car will fail to get me back to the ferry terminal, despite the mechanic's expert advice that my chances are not good. The arguments I concoct to convince myself of this (for example, 'The car's only five months old, so surely the problem can't be as bad as all that!') are likely to be ones I would be much more inclined to dismiss if faced with a similar 'objective' problem in my home state (for example, in the latter context, I might be very willing

COGNITIVE DISSONANCE AND PERSONAL CONSTRUCTS

to believe the bearing needed replacing, 'since the car is still under warranty' and no financial outlay will be involved on a replacement).

It is probably wise for us to recall our earlier comments about anxiety and impulsiveness at this juncture, given that a challenge to a major construct is a cause for anxiety. It may be unwise to presume that all subjects will use dissonance-reducing strategies when faced with threatening cognitions. Some people may tend always to 'assume the worst' when faced with threatening cognitions. For those that do, one way of dealing with the threat may be an impulsive act, which, at unnecessary cost, enables the decision-maker to avoid changing her key construct and lets her preserve the subordinate expectations. (In the example used above, one way to remove the problem would be to trade the car in before the bearing failed outright!) If the person is neither a rationaliser nor someone who acts impulsively (the latter person would probably say 'decisively'), we might instead expect more of a dependent response, such as a conspicuous display of panic aimed at attracting the attention of someone who can sort out the mess.

Differences in mental strategies that people use for coping with threatening cognitions are by no means the only differences in ways of thinking that will affect the importance that people accord to particular pieces of information. We should also note that the structures of implicational linkages between constructs are ones that people set up for themselves. Some people may develop highly integrated ways of looking at a given situation; others may choose to avoid linkages. The former will be much more obsessively concerned with a threatening cognition about which the latter may take a pretty 'laid back' attitude (this theme is explored at length in Earl, 1986).

5. 'SOUR GRAPES' FROM THE PERSPECTIVE OF PERSONAL CONSTRUCT THEORY

Hinkle's approach to resistance to change may be construed as implying that attachments to particular activities and commodities arise because the latter are seen as necessary to uphold constructs that the decision-maker is loathe to change; and that differences in attachments to things reflect differences in the number of constructs subordinate to them. In other words, a theory of expectation formation and change gives us a theory of preferences. From this perspective it appears that CDT is needlessly restricting its domain by focusing on justification-oriented behaviour that occurs *after* a choice has been made. This is because there will be a clash of constructs whenever a person recognizes that she may not be able to obtain everything she expected. The need to engage in dissonance reducing behaviour after a

COGNITIVE DISSONANCE AND PERSONAL CONSTRUCTS

choice has been made will be reduced if, at the time of choosing, the decision-maker can select not just a course of action but also a set of justifications for the choice and the rejection of its rivals. This is very much the position that Elster (1983, chapter III) appears to take in his discussion of the 'sour grapes' phenomenon: he notes that 'The Festinger experiments mostly interpret dissonance reduction as a reaction to actual choices, whereas my main focus has been on the shaping of preferences by the feasible set' (Elster, 1983, p. 122).

To illustrate this theme, we may consider the predicament of a motorist at the time unleaded petrol was being phased in. Assume that this motorist believes himself to be environmentally conscious and that a safe car is a large luxurious one that is both comfortable and easily able to execute overtaking manoeuvres. He believes it is time to replace existing large old car since it needs expensive repairs. The trouble is that his budget is such that he must choose between a new, economical shopping car and a second-hand executive vehicle that is thirstier and which cannot use unleaded petrol. As a motorist, he must opt for the executive car, but as a conservationist he must buy the shopping car. What will he do? One outcome might be that the motorist in him wins, and he justifies his choice by saying that, 'After all, the car already exists and will continue to guzzle leaded fuel whether I buy it or not.' Or the conservationist in him may win, and he justifies his choice by saying that 'After all, most of my driving is around town, and often I have to fly on interstate trips, anyway.' This position may have the advantage that it invites less criticism from those with whom he mixes socially. A third possibility is that he avoids the dissonance between motoring and conservation by changing his belief about the size of his budget constraint: this belief is likely to be challenged anyway once he sets about discussing his requirements with car dealers, who may point out to him that he could afford more if he borrowed more but paid back his loan over a longer period in order not to increase his monthly repayments. Fourthly, the person may abandon his belief that he needs to replace his existing car and tell himself that although it uses leaded fuel, he will be more of a conservationist if he uses his money to pay for a stream of repairs rather than disposing of it and paying for something newer.

From the standpoint adopted in this paper, it appears that the person's choice will depend on the relative importance he assigns to the competing beliefs that appear to be called into question by particular courses of action, and on the cost of explaining to himself, and to those who ask, how he got round the dilemma. (This latter cost itself can be seen in terms of the implications to the person of the sacrifices he has to make to justify his choice.) As Steinbruner (1974, chapter 4) stresses, uncertainty will make it cognitively easier for the decision-maker to believe, at the time of making up his mind, that the choice is one that does not entail dissonance. In the case

COGNITIVE DISSONANCE AND PERSONAL CONSTRUCTS

in question, the decision-maker is unlikely to face 'hard' evidence about factors such as: whether the gas guzzling car would otherwise be purchased by someone who travelled very small annual mileages; the number of long distance trips in the future that it will make more sense to undertake by air; or the actual environmental implications of a strategy of patching up an old vehicle (is more pollution generated by the extra fuel consumption and remanufacture of worn components, than by the manufacturing of a new, fuel-efficient vehicle?). The complexity of the decision problem may also make it easier for a seemingly dissonance-free decision to be reached: the boundedly rational decision-maker may fail to see that dissonance would arise from the detailed following through of implications of some of arguments used in justifying the choice. Later, of course, these inconvenient implications may surface and generate the sort of behaviour predicted by Festinger.

6. LINKAGES BETWEEN PAST AND PRESENT CHOICES

One of the important suggestions of the Akerlof and Dickens (1982) paper on CDT is that attempts to reduce dissonance in the past may affect preferences in the present. Their specific example concerns attitudes towards the purchase of newly invented safety equipment. Workers may have resolved the conflict between suggestions that their work environment is dangerous and their views of themselves as 'smart guys' by turning a blind eye to the dangers and telling themselves that their pay reflects their smartness, not the probability of injury at work. Having convinced themselves their jobs are not particularly dangerous, they will be less interested than new recruits will be in buying the newly-available safety equipment. In this penultimate section of the paper I outline some other ways in which CDT and PCP may alert us to the possibility of path-dependent choices.

First, in seeking to cope with the aftermath of previous choices, people may develop new constructs in terms of which to construe things. Thus, when new decision points arise, schemes may be ranked differently from how they otherwise would have been ranked if the choosers were thinking in terms of a smaller repertoire of constructs. For example, suppose I do purchase a powerful but relatively thirsty car and try to justify this act by pointing out how much safer the car will be during overtaking manoeuvres. My friends may agree but then argue that this is just one aspect of safety and go on to introduce me to all sorts of other aspects (crumple zones, anti-lock brakes, four wheel steering, airbags, and so on) that previously I had not been considering. Consequently, I may end up still feeling somewhat uncomfortable about my purchase and will be looking for a different set of

COGNITIVE DISSONANCE AND PERSONAL CONSTRUCTS

characteristics when I am next in the car market—unless I can come up with a new way of justifying my gas-guzzling purchase that enables me to forget about aspects of safety. My feeling that I perhaps ought to be returning to the car market may of course be increased by the dissonance produced by the discovery of these new constructs if I cannot argue them out of the way. It should also be noted that, having given a public justification of my decision in terms of safety, I am now under some pressure to make sure I can continue to use this justification when I make my next vehicle purchase—though this pressure may be expected to erode through time as memories of my reference group may be expected to fade in respect of my avowed preferences.

Secondly, attempts to reduce dissonance will affect the information that one will gather about possibilities even if these activities do not lead to a change in one's construct repertoire. This may mean that, when the time comes to replace a product, the person is looking at a field that has already been narrowed down in a biased way.

Thirdly, through data-mining activities and wishful thinking, a decision-maker may be able to continue believing that it has yet to be established that sunk costs should be written off, even though onlookers are claiming that a venture should be abandoned because a mistake has been made. As the decision-maker persists in pouring more and more time and money into the project she is tightening up her budget constraint and allowing opportunities to slip by. For example, consider the case of a person who initially construes early model second-hand cars as a cheaper means of motoring than new cars, but who has the misfortune to buy a lemon. She may spend several thousand dollars trying to correct defects in the car that before giving up and trading the car in against a new one that has a comprehensive warranty. In the meantime, the price of new cars may have risen substantially. Initially she construes this as implying she is right to seek cheaper motoring by driving an old car, but when the repair bills become too much for her, she starts seeing that inflation of new car prices can mean that new cars are actually rather good as investments.

Finally, there may be a kind of 'thin end of the wedge' effect where a successful dissonance reduction strategy enables a person to dodge an inconsistency between one of her actions and her normal moral constructs. This line of argument is to be found in the work of Etzioni (1986, pp. 179–80), who stresses that moral dilemmas are often irreversible, discontinuous and prone to involve threshold effects. Noting Maital's discussion of CDT in relation to the use of credit cards, Etzioni comments that 'Taking out the first loan, for people who feel being in debt is a moral evil, is different from extending it or taking out a second one.' Thus, suppose people buy things whilst telling themselves they are using their credit cards as debit cards but that they then fail to pay off their outstanding balances in full when their

COGNITIVE DISSONANCE AND PERSONAL CONSTRUCTS

statements arrive. They can no longer construe themselves as the sort of people who do not get into debt (though, so long as they meet their payments obligations, they can still claim not to be living beyond their means). Having, so to speak, lost their virginity as debtors and come to see that the situation does not entail the nasty implications that they expected, they may become avid users of finance as a powerful device for avoiding dissonance. (Note how, for some, a rather euphemistic phrase such as ‘using finance’ may itself have rather nicer connotations than ‘being in debt’.) The sources of finance that they now use may include hire purchase, overdrafts and personal loans that they used to shun because, unlike credit cards, such arrangements necessarily involved an admission that one was borrowing.

7. CONCLUSION

In a paper on this subject, it was perhaps inevitable that material would be considered in a rather reflexive manner. I set out to explore the complementarity of cognitive dissonance theory and personal construct psychology and rapidly encountered dissonance between these two bodies of thought: on the surface, the kind of behaviour identified by Festinger did not seem to fit in well with views about how one would expect people modelled ‘as if they are scientists’ to go about their lives. As one who has found PCP a powerful way of making sense of economic behaviour, I was naturally concerned to eliminate this dissonance: not merely for my own peace of mind, but also because CDT leads me to suspect that the existence of this dissonance might be used by other economists as a basis for justifying adherence to an economic methodology that gets by without PCP. By showing that professional scientists also behave in the manner predicted by Festinger, and by using PCP to amplify Elster’s suggestion that dissonance reducing processes are not merely a post-choice phenomenon, I hope that I will increase interest in CDT as well as PCP. But there are some areas of the paper that may make mainstream theorists less, rather than more, comfortable with the idea of using these kinds of psychology. One is the emphasis I have given to impulsive behaviour; another is the way in which PCP stresses the subjectivity of beliefs and idiosyncratic nature of individuals’ ways of forming judgments. Subjectivists who choose to use both PCP and CDT are unlikely to wish to follow the methodology of Akerlof and Dickens (1982), whose paper on CDT continues to use mainstream assumptions concerning rational expectations and full information.

COGNITIVE DISSONANCE AND PERSONAL CONSTRUCTS

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