

Belief and affect: On the mental pre-cursors of health-related cognition and behaviour

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Abstract

This paper will discuss the importance of concepts such as belief and affect to the theory and practice of health psychology, and the potential contribution of the revised conceptualisation of belief proposed in the target article will be considered. In the first half of the paper a number of important differences between the new approach and established empirical approaches to the study of beliefs will be highlighted. The second half of the paper will focus on the important relationship between affect and beliefs, one of the key issues addressed in the target paper. A number of recent theories linking affect and belief will be reviewed, and recent empirical research demonstrating the psychological mechanisms linking affect and belief will be discussed. In light of the considerable achievements of this line of inquiry, it is concluded that the proposed new approach and definition of belief does not as yet offer a preferable alternative to understanding the role of belief in health-related cognition and behaviour.

Keywords

Belief, affect, affect and cognition, health-related beliefs, religious beliefs

Beliefs are a key concept in understanding health-related cognition and behaviour. The objective of this article is to offer some comments on the conceptualization of beliefs offered in the target article (Cromby, this issue), and to consider briefly some of the recent evidence demonstrating the close links between beliefs and affect, one of the key issues considered in the target article. As the target article rightly notes, belief is one of the core constructs that health psychologists need to work with to achieve desirable health outcomes. Rather optimistically, Cromby claims that ‘philosophy is where we usually turn when conceptual clarity is required’. Unfortunately, as the article acknowledges, it turns out that there is very little agreement among philosophers about

the meaning of this construct. In contrast, empirically psychology has already done a great deal to define, operationalize and measure concepts such as belief in ways that are open to replication and verification.

Within the field of experimental social psychology, we can look back on almost a hundred years of productive empirical work, and the development of well-accepted operational definitions of mental constructs such as belief, attitude

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and value. These are all constructs that derive their importance and usefulness as potentially significant predictors of behaviour. When a smoker believes that smoking will not damage his/her health because Aunty May smoked all her life and lived to be 98, or a young parent believes that inoculation against whooping cough will damage the health of her children, we have a paradigmatic case of the kinds of problems health psychologists have to deal with. Changing such beliefs is essential to achieve desirable health outcomes, and it is in this sense that belief is of primary interest to the profession.

Cromby's article takes a rather different approach, discussing belief in a somewhat philosophical manner, offering a definition that seems at variance with well-accepted historical and empirical approaches to the concept of beliefs, drawing instead on what he terms 'critical psychology' and 'discursive methods'. If this approach and definition offer a new and more effective – and most importantly, empirically demonstrable – way of dealing with beliefs, the discipline will clearly benefit. In this commentary I will argue that on balance, there is not enough to recommend Cromby's approach when compared against well-known, efficient and workable definitions of belief that produced a rich existing empirical literature.

The definition

Cromby defines belief as 'a structure of socialized feeling, contingently allied to discursive practices and positions'. In contrast, psychologists traditionally thought of beliefs as mental representations about states of the world. Considerable literature exists exploring the origins, structure, complexity, communication, maintenance and change of beliefs and attitudes (Crano and Prislin, 2008; Forgas et al., 2010). Contrary to suggestions in the target article, the relationship between beliefs and attitudes has been clearly delineated in empirical research. Attitudes have traditionally been defined as consisting of three components – a cognitive component (*beliefs* about the attitude object), an affective

component (feelings about the attitude object) and a behavioural component (behaviours and behaviour intentions towards the attitude object). Much research in social psychology in general, and health psychology in particular has addressed the problem of how attitudes and their constituent beliefs can be changed (Forgas et al., 2010; Salovey and Rothman, 2003).

When set against this rich tradition of theorizing and predictive empirical research, it is not immediately obvious how Cromby's new definition might represent an advance. The main difference here seems to be the emphasis on the socialized and discursive character of beliefs, an emphasis we can agree with wholeheartedly. However, the wording of the definition is rather confusing, and is not formulated in a way that allows the reliable operationalization and measurement of the construct. Surprisingly, the article seems to place little emphasis on this issue, and there is an absence of any discussion of how the new approach to beliefs could lead to an empirically measurable construct. It is not immediately obvious what is a 'socialized feeling' – are there any feelings that are not socialized (Harré, 1986)? What does it mean that beliefs are 'contingently allied to discursive practices and positions'? What precisely are those contingencies?

Obviously there can be no doubt that beliefs – like all other mental and cognitive constructs – can only exist within an interactive social and cultural context, and there is obvious benefit in emphasizing the cultural foundations of individual representations. However, the study of beliefs must be based on understanding the beliefs of unique individuals, especially if the objective is to achieve change for the better as health psychologists must do. Emphasizing the social and cultural level of analysis, to the neglect of how individuals actually experience and act on their beliefs may not be a desirable outcome, especially within an applied field like health psychology, where it is axiomatic that change can only be achieved by changing the behaviour of individuals. In the absence of a sound empirical approach for measuring and assessing beliefs in a replicable way that

promotes the efficacy of health interventions, Cromby's definition must be considered preliminary. In that sense, until and unless the advantages of the new definition are more clearly demonstrated, its value remains untested.

Religious belief

Religious belief, as Cromby points out, is a multidimensional construct. He is correct in identifying the multifaceted health benefits associated with both the overt, institutionalized practice of religion, and the internal, metaphysical experience of faith. However, it remains unclear from the discussion if, and in what sense, Cromby's approach to beliefs is distinct from, or adds substantively to what is already established knowledge about the connection between religiosity and health (e.g. Argyle, 2000; Beith-Hallahmi and Argyle, 1997). He reviews a number of empirical studies suggesting such a link. However, none of these studies are based on his new definition, which is quite different from traditional empirical approaches.

Thus, it remains unclear from the discussion in what sense existing empirical research on religious belief and health can be construed as supporting Cromby's approach. It should also be noted that religious belief, anchored to mental representations about metaphysical concepts, is in important ways different from the kinds of more mundane beliefs that simply refer to states of the knowable world, a distinction that remains unexplored in the target article. On balance, while there can be no doubt that religious belief has an important influence on health outcomes, this effect has been more than adequately captured in past work using existing definitions and empirical methods of measuring beliefs.

Affect and belief

Cromby's emphasis on the role of emotions in anchoring and shaping beliefs is interesting, and largely consistent with recent evidence suggesting that affect is involved in all cognitive activity, including mental representations of the

social world. Indeed, numerous studies show that the way people think about and represent their everyday experiences is fundamentally defined by their affective reactions to these events (Forgas, 1982). Does this mean that belief cannot be distinguished from the affective states it is associated with? Cromby's definition suggests an inextricable link, but the target article says little about the psychological mechanisms responsible for this relationship.

Despite the long-standing historical distinction about the three different faculties of the human mind, affect, cognition and conation (Hilgard, 1980), most human experience involves a combination of these three faculties. Nevertheless, it has been possible for empirical psychologists ever since Titchener and Wundt to study reliably these three basic mental faculties separately. Accordingly, re-merging them as suggested by Cromby's definition, does not seem to be a particularly promising way forward, and not one that is likely to promote the efficacy of research and practical intervention in health psychology. As there is a rich and growing research literature exploring the manifold influences of affect on cognition in general, and beliefs in particular, the remainder of the article will briefly present some of the evidence demonstrating the effectiveness of existing empirical approaches to the study of affect and belief.

Theories linking affect and beliefs

In addition to determining how beliefs are mentally represented (Forgas, 1982), affect also has a more dynamic influence on the valence of beliefs that is of particular interest to health psychology. Recent information processing theories in particular offer a comprehensive account of the links between affect and beliefs. Two kinds of affective influences on belief have been identified (1) *content effects*, when affect influences the content and valence of beliefs, and (2) *processing effects*, when affect influences the cognitive processes involved in producing and acting on beliefs. Content effects (when affect

influences *what* we think) in turn have been explained by two complementary theories: *memory-based* accounts (e.g. the affect priming model; see Bower and Forgas, 2001), and *inferential* models (e.g. the affect-as-information model; see Clore and Storbeck, 2006).

Content effects

The memory-based associative network model of Bower (1981) suggests that affective states can selectively prime ideas and thoughts previously associated with that affect, and so may influence the way particular beliefs and attitudes are formed. Numerous studies now show that temporary affect can significantly colour the valence of beliefs, as positive mood triggers more positive and optimistic ideas, and negative affect produces more negative, critical and cautious beliefs (Forgas, 2002, 2006). Integrative theories, such as the Affect Infusion Model (AIM; Forgas, 1995, 2002), identify four different information processing strategies in terms of their (1) openness and (2) degree of constructiveness as critical in determining if, and when such affect infusion into beliefs is most likely to occur.

The alternative, *inferential theory* suggests that rather than constructing a belief based on the affectively biased recall of features, individuals 'may ... ask themselves: "How do I feel about it?"/and/ in doing so, they may mistake feelings due to a pre-existing state as a reaction to the target' (Schwarz, 1990: 529). This 'how-do-I-feel-about-it' heuristic suggests that affect influences beliefs due to a simple inferential error, a theory that is in some ways similar to earlier conditioning models (Clore and Byrne, 1974), suggesting an incidental – and mistaken – association between affect and unrelated beliefs. For example, in one study we asked almost 1000 people who were feeling good or bad after seeing happy or sad films to indicate a variety of their beliefs in a street survey after leaving the movie theatre (Forgas and Moylan, 1987). Beliefs were strongly influenced by affective state, as respondents apparently relied on their affect as a simple heuristic cue to inform their responses.

Processing effects

In addition to influencing the content and valence of beliefs, affective states may also influence the *process* of cognition, that is, *how* people construct and use beliefs (Fiedler, 2001; Forgas and Eich, in press). Positive affect appears to recruit more superficial processing strategies, as people reach outcomes more quickly, use less information, avoid demanding, systematic thinking and are more confident about their beliefs. In contrast, negative affect seems to trigger a more effortful, systematic, analytic and vigilant processing style. The most plausible recent explanation of affect-induced processing effects was suggested by Fiedler and Bless (2001; Bless and Fiedler, 2006), who argued that positive and negative affect function as evolutionary signals, and trigger equally effortful, but qualitatively different processing styles. Specifically, positive affect, signalling a safe and familiar environment, generally promotes a more *assimilative*, schema-based, top-down thinking style, where pre-existing beliefs, attitudes and representations dominate thinking. In contrast, negative affect functions like a mild alarm signal and produces a more accommodative, bottom-up and externally focused information processing strategy where attention to situational information drives thinking.

Empirical evidence for affective influences on beliefs

It seems that even the basic process of forming beliefs can be biased by affect, as the greater availability of affectively primed information influences the way ambiguous and complex experiences are interpreted (Forgas, in press). This prediction was first confirmed in a study asking happy or sad participants to view a videotape based on their own social interactions with a partner from the previous day (Forgas et al., 1984), and form beliefs about the observed behaviours of themselves as well as their partners. Participants formed beliefs that were affect-congruent, and later experiments have shown that such affect infusion into beliefs also

occurs even when people form beliefs about highly familiar and well-known events in their intimate relationships (Forgas, 1994).

Paradoxically, such affect infusion into beliefs is magnified when people need to think *more extensively* to deal with a more complex or unusual situation, due to the greater likelihood that affectively primed associations will infuse the result (Forgas, 1995, 2002). In several experiments, when beliefs were formed about more or less complex and ambiguous persons, couples or events, more constructive and extended processing necessary to deal with more complex targets actually increased affective biases on such beliefs (Forgas, 1993, 1995). Even beliefs about partners in long-term intimate relationships showed such significant affect congruence (Forgas, 1994).

Affect and health-related beliefs

Beliefs about the self represent a particularly complex, elaborate and problematic domain, and one of great importance to health psychology. Self-related beliefs are also strongly influenced by affect, as positive affect improves, and negative affect impairs the valence of self-beliefs (Abele and Hermer, 1993; Nasby, 1996; Sedikides, 1995). When students constructed beliefs about the reasons for their success or failure on a recent exam, we found that those in a negative mood blamed themselves more when failing, and took less credit for their successes. In contrast, those in a positive mood claimed credit for success but refused to accept responsibility for their failures (Forgas, 2002). Affective influences on self-related beliefs also depend on the extent to which the belief is central or peripheral. Familiar, central beliefs about the self may be less prone to affective influences (Sedikides, 1995). As low self-esteem persons have less certain and stable self-beliefs, affect has a greater influence on their beliefs about themselves than is the case for high self-esteem individuals (Smith and Petty, 1995).

Affect also seems to play an important role in the structure and organization of the self-concept. For example, DeSteno and Salovey (1997) found that in a neutral affective state, beliefs

about the self were organized around descriptive features such as achievement and affiliation. However, the experience of positive or negative affect produced a distinct change, and self-beliefs were now structured in terms of their positive or negative valence. Thus, affect may function as a key organizing principle of self-related beliefs.

Affect has a further interesting influence on the way self-related beliefs are constructed and expressed. Feeling good can serve as a resource, allowing people to overcome defensiveness and deal better with potentially threatening beliefs (Trope et al., 2001). Thus, positive affect may function as an emotional buffer, enabling people to absorb the affective costs of coping with negative beliefs. These effects may have important applied consequences for health psychology. For example, and Trope et al. (2001) report that people in a positive mood not only selectively sought, but also processed in greater detail and remembered better negatively valenced information about health risks.

Practical implications

The role of affect in health-related beliefs and behaviours has received intense attention (Salovey et al., 2001). Positive affect seems to alleviate the experience of physical symptoms and promote positive, optimistic beliefs about health outcomes (Salovey and Birbaum, 1989). It is hardly surprising that ill-health is typically associated with more negative affect. The more interesting question is: Can induced affect have a causal influence on health beliefs? The answer is likely to be 'yes'. Individuals who experience negative affect have more negative beliefs, report more and more severe physical symptoms and these findings appear to be quite robust (Abele and Hermer, 1993; Croyle and Uretsky, 1987). Salovey and Birbaum (1989) found that sick students who were suffering from a cold or flu believed that they had nearly twice as many aches and pains in negative mood than did those made to feel happy – even though there were no differences between the two groups before the mood induction.

Affective influences on health-related beliefs are thus an important predictor of actual health

outcomes, including engaging in safe sex, smoking cessation and a healthy diet (Salovey et al., 1998). Happy persons typically have more positive beliefs about carrying out health-promoting behaviours (Salovey and Birnbaum, 1989), and form more optimistic beliefs about future events (Forgas and Moylan, 1987). Although the effects of affect on health-related beliefs appear robust, the mechanisms responsible for these effects are only now beginning to be understood. It may even be possible that affective states may directly influence the immune system and susceptibility to disease, and such effects tend to be stronger when participants are instructed to express rather than repress their affect (Labott and Martin, 1990). Individual difference variables such as optimism, affect intensity, anxiety, hope and affect regulation appear to mediate many of these effects (Salovey et al., 2001; Snyder, 1994). The mechanisms of affect infusion into the content and processing of beliefs described here are highly relevant to understanding the multifaceted links between affect, beliefs and health (Salovey et al., 2001).

Summary and conclusions

This article proposes that existing, empirically based definitions and approaches to the study of beliefs have produced an important body of evidence relevant to health psychology. The proposed alternative definition of belief, although it has the advantage of emphasizing the socially constructed and discursive aspects of beliefs, does not yet offer a comprehensive alternative method of measuring and operationalizing beliefs, and assessing their health consequences. Without the ability to produce reliable empirical data, it seems premature to abandon existing approaches and research for the uncharted territory offered by the new definition. Recent research on affective influences on beliefs in particular produced extensive evidence showing that everyday affective states can have a highly significant influence on the way people form, maintain and change their beliefs (Forgas, 1995, 2002, 2006). Further, a number of studies support the counter-intuitive prediction based on the Affect Infusion Model (AIM; Forgas,

2002) that different information processing strategies moderate the link between affect and beliefs (Forgas, 1995, 2002). Affect infusion impacts not only beliefs but also behaviours in general (Forgas, 1998, 1999), and health-related behaviours in particular (Salovey and Birnbaum, 1989). Hopefully, this article will stimulate further interest and research in this fascinating and rapidly developing area of inquiry.

Competing Interests

None declared.

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