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Acting in light of the future: How do future-oriented cultural practices evolve and how can we accelerate their evolution?

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ABSTRACT

Despite extensive knowledge of how to prevent or ameliorate serious diseases, natural disasters, environmental degradation, and a wide range of other problems, we often fail to take action that would prevent or mitigate these problematic outcomes. In short, although we may have sound scientific knowledge about threats to future wellbeing, we appear to have limited insight into how to benefit from this knowledge. With this paper, we argue that our current scientific understanding of how to act in light of the future is limited, but we offer a theoretical analysis of future-oriented behavior at both individual and organizational levels. Specifically, the paper draws on a functional contextualist account of human language and cognition, Relational Frame Theory (RFT), and its integrated therapeutic approach, Acceptance and Commitment Therapy (ACT), and extends this framework to analyzing the evolution of the practices of groups and organizations. This framework can provide an understanding of how human behavior may be modified in the present to serve improving human wellbeing in the future at individual, organizational, and even national levels.

1. Introduction

Societies are not as effective as they could be in anticipating, preparing for, and preventing a wide range of future problems. Consider public health. Despite extensive knowledge of modifiable risk factors for cancer and heart disease, we continue to be broadly unsuccessful at preventing them (McGinnis & Foege, 1993). Similarly, although progress has been made in the prevention of infectious diseases (Rothman & Greenland, 1998), we remain poorly prepared for new epidemics (Conan, 2005).

We can predict many natural disasters and environmental problems, but often do not act effectively on our predictions. The impact of a large hurricane on New Orleans was predicted (Cohen, 2002), but steps were not taken that would have prevented the widespread and protracted devastation that Hurricane Katrina cause. A scientific consensus exists about the effects of climate change (Intergovernmental Panel on Climate Change (IPCC, 2013)), but actions to prevent further warming remain minimal. Population growth outstrips the carrying capacity of our environment (Diamond, 2004; Harris, 1989; Ory, Forrest, & Lincoln, 1983), yet organized efforts to reduce growth are lacking. The 2007 financial meltdown was widely predicted (Lewis, 2010) and yet regulatory agencies failed to act (McLean & Nocera, 2011).

Scientific analysis could improve our ability to deal with future problems. However, a scientific understanding of the context that influences individuals and organizations to act in light of the future is quite limited. For this reason, we offer a contextual analysis of the future-oriented behavior of individuals as well as the future-oriented practices of organizations. Our hope is that analyzing the contextual influences on taking action will guide the evolution of a culture that becomes more effective at preventing future problems. The current analysis does not however address other facets of the problem of taking effective future action, such as our ability to make accurate predictions of future events. Silver (2012) provides an extensive discussion of this issue across problems ranging from the weather to the economy.

2. Analysis of future-oriented behavior of individuals

Among nonhumans, behavior is shaped and maintained primarily by immediate consequences. Hence, even behavior with long-term negative consequences may be established and maintained simply because it achieves immediate reinforcers. Nonhuman organisms remain blissfully unaware of unfortunate future probabilities.

The same phenomenon appears to guide many forms of human behavior, including eating, drinking, and procreating. For example,

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high-fat and high-calorie foods provide instant reinforcement but risk obesity and cardiovascular disease when overeaten (McGinnis & Foege, 1993). Alcohol is gratifying but has many potential negative long-term consequences, such as cirrhosis of the liver. Uncontrolled sexual gratification may lead to unwanted pregnancy and sexually transmitted diseases.

Unlike nonhumans, however, humans can and often do act in light of long-term consequences (Suddendorf & Busby, 2005). For example, we choose low-fat foods to control our weight; we work for years to earn college degrees and secure a stable income later; and we save for retirement. Groups, organizations, and nations engage in similar actions. Groups of friends plan a social event months in advance. A company develops a five-year strategic plan to improve its ability to develop new products and services. A nation implements policies to reduce youth tobacco use in order to reduce the rate of cancer far in the future. These examples illustrate many areas in which we take coordinated action in the present and knowingly delay or avoid gratification to predict and prepare for long-term future events. Scientific research that clarified how such future-oriented behavior is established and how it might be increased could be one of the most important developments guiding the further beneficial evolution of human societies.

There is a sizable literature on behavior involved in acting in light of the future (e.g., Aspinwall, 2005). However, the primary focus of existing research is on the correlations between cognitive and affective states and traits and the likelihood of taking future-oriented action. For example, there are studies showing that positive mood is associated with people being more open to consider personal liabilities that are relevant to their future planning (Aspinwall & Brunhart, 1996, 2000). Similarly, there are studies distinguishing between hope and optimism as orientations toward future events (Bruininks & Malle, 2005) as well as studies showing that setting goals and planning ahead predict better future psychological outcomes than worrying about the future (Aspinwall, 2005).

The functional contextualist perspective that organizes contextual behavioral science focuses on prediction and influence of phenomena. From this perspective, the existing literature is limited because it fails to examine the environmental context that establishes relationships between cognitive and affective states and future-oriented behavior. Indeed, the literature cited here makes a rather limited contribution to our ability to create environments that would nurture effective future-oriented behavior. In the next section, we describe a functional contextualist framework for analyzing the environmental context that shapes not only future-oriented behavior, but the relationship between current cognitive and affective states and future-oriented behavior.

2.1. A Relational Frame Theory account of future-oriented behavior

In this section, we describe how Relational Frame Theory provides an account of the development of future-oriented behavior among humans. We believe that this account has the potential to improve our ability to establish and maintain future-oriented behavior. The account goes beyond an account simply in terms of contingency-shaped behavior by providing an analysis of the verbal processes that enable humans to act in light of long delayed consequences.

Consider a college student working towards her degree in chemistry in the hope of becoming an organic chemistry researcher. She knows very little about the desired job and has never known anyone in that position; she has conducted only a few experiments in her school's chemistry lab. In short, she has no history of reinforcement for her current behavior and cannot even be sure that it will lead to the reinforcers she desires several years away (e.g., she may not earn grades good enough to become a chemist despite her best efforts).

Of course, she may have a history of reinforcement for similar types of behavior that previously led to desired reinforcers. For example, her grades were good enough to get into college in the first place. However, if her current behavior is only an extension of what she has learned before, there is likely little reinforcement in childhood for behavioral units that extend across such a long period of time. Thus, if such a limited history of contingencies was the only basis of her behavior, it is hard to see how she would maintain such behavior. For example, current distractions will regularly challenge her motivation to study. Indeed, to earn good grades, she cannot go out with her friends each time they ask because immediate access to those reinforcers may compromise her access to the imagined future. Although she may gain some momentum and reinforcement for small steps that approximate her desired outcome, these may be both small and infrequent. In other words, she cannot access the future goal along the way. So, how does she stay on track? We suggest that Relational Frame Theory accounts for the behavior of our steadfast young student, despite her limited history of direct reinforcement for her studious behavior.

Relational Frame Theory (RFT) is a well-established and empirically supported functional, contextual, and behavioral account of human language and cognition (for book-length summaries, see Hayes, Barnes-Holmes, & Roche, 2001; Dymond & Roche, 2013.) In short, RFT proposes that the ability to relate events arbitrarily is a uniquely human and core set of complex verbal abilities. RFT and its empirical base have identified a number of *relational frames* or families of relations that include coordination, distinction, opposition, comparison, hierarchy, causality, and perspective-taking (also called deictic relations). This paper focuses particularly on RFT's causality and perspective-taking relations as they are central to the theory's approach to future behavior. Detailed descriptions of the other types of relations are available elsewhere (e.g., Hayes et al., 2001).

2.1.1. Temporal NOW–THEN deictic relations

RFT research has repeatedly demonstrated three sets of relations that are central to human perspective-taking, including I vs. YOU, HERE vs. THERE, and NOW vs. THEN. The findings overall suggest that children learn to respond in accordance with I vs. YOU first. These abilities expand with the emergence of the spatial HERE–THERE relations and finally the temporal NOW–THEN relations (Barnes-Holmes, 2001). In a nutshell, learning to respond in these ways facilitates development of the sense of self or perspective from which one operates in the world. Temporal relations are particularly difficult to learn because unlike I–YOU and HERE–THERE, there are no formal properties to learn from. That is, time is an abstract concept: *now* at one time is very different from *now* at another time and *nows* never repeat. Evidence from the broader developmental literature lends support to this trajectory in the development of a sense of self (Howlin, Baron-Cohen, & Hadwin, 1999).

The temporal relations likely play a strong role in future thinking for verbally sophisticated individuals because they allow us to bring the future psychologically into the present so that it can control current actions to serve future outcomes. In other words, a very strong and rich relationship exists between NOW and THEN, and the nature of this relationship may change on an on-going basis. For instance, if the young student from the example above receives a bad grade and feels low about it, she may coordinate NOW with THEN and derive that she will never achieve her degree. That is, if THEN is the same as NOW, the student will continue to receive poor grades and will not realize her dream. In contrast, imagine that she recognizes that the current low grade is unusual and does not match her normal high performances.