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Personal narratives as the highest level of cognitive integration

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| Abstract: | We suggest that the hierarchical predictive processing account detailed by Clark can be usefully integrated with narrative psychology by situating personal narratives at the top of an individual's knowledge hierarchy. Narrative representations function as high-level generative models that direct our attention and structure our expectations about unfolding events. Implications for integrating scientific and humanistic views of human experience are discussed. |

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Abstract:

We suggest that the hierarchical predictive processing account detailed by Clark can be usefully integrated with narrative psychology by situating personal narratives at the top of an individual's knowledge hierarchy. Narrative representations function as high-level generative models that direct our attention and structure our expectations about unfolding events. Implications for integrating scientific and humanistic views of human experience are discussed.

Main Text:

Clark's article presents the hierarchical predictive processing account of human cognition as a unifying model for understanding mind and action. He also highlights the importance of bridging this perspective with our daily "folk" or "humanistic" conceptions of self and world. We propose that such a bridge is provided by the field of narrative psychology, with narrative models of the world occupying the highest levels of an individual's predictive hierarchy.

A growing body of theory and research indicates that the broadest and most integrative levels of an individual's knowledge system can be characterized as narrative descriptions of reality (Bruner, 1986, 1991; McAdams, 1997; Peterson, 1999; Ricoeur, Blamey, & Pellauer, 1990; Sarbin, 1986). Although narratives can take many different forms, they are distinguished by their ability to compress and encode a great deal of information about the world, including the causal relations between events over time (Graesser, Millis, & Zwaan, 1997), the planning and sequencing of goal-directed actions (Schank & Abelson, 1977), the emotional significance of an event within a temporal context (Oatley, 1992), the unfolding nature of personal identity (McAdams, 1997), and the dynamic intentions of multiple social agents (Mar & Oatley, 2008). It is the integrative ability of narrative representations to co-ordinate vast domains of knowledge

and behavior that has led some theorists to propose narrative as an organizing framework for understanding human psychology (Sarbin, 1986). Narrative representations thus appear to function as high-level generative models of the sort that Clark describes, structuring our expectations about daily experiences and providing an organizing framework for interpreting incoming sensory information (Bruner, 1986; Mandler, 1984). Such representations are particularly crucial for anticipating the sequential unfolding of events over time, allowing for the prediction of actions and outcomes within a chain of events (Abelson, 1981). Integrating narratives into predictive modeling means that information consistent with an individual's currently active narrative schema will be "explained away" in the fashion that Clark describes; events that were not predicted by the schema, on the other hand, will require more detailed processing and accommodation.

Incorporating narrative psychology into the hierarchical predictive processing account brings with it an important advantage. In particular, narratives provide a point of contact between the predictive processing account and the socio-cultural context in which individual minds develop. Narrative representations are fundamentally social in nature, as children are socialized to adopt particular modes of narrative thought during development (Nelson & Fivush, 2004). An individual's personal narrative representations of the world are selectively constructed from the many social and public narratives that are available within the broader cultural context (Nelson, 2003). In placing these narrative structures at the top of the predictive hierarchy, an individual's cultural context is afforded a powerful influence on the top-down regulation of domain-specific knowledge structures and behavioral patterns (Kitayama & Cohen, 2010).

More broadly, this hybrid narrative predictive processing account highlights the relevance of the humanities for the cognitive sciences, suggesting a unified framework for their integration. A primary function of the humanities is elaborating upon the “manifest” image of the world as it is directly experienced by us, in contrast to the “scientific” image that provides a depersonalized view of the world (Sellars, 1963). Narrative psychology acknowledges the importance of these “manifest” images, as they guide an individual’s expectations and shape the cascade of cognitive operations that give rise to subjective experience. Within such a framework, a full appreciation of an individual’s subjectivity is thus crucial to adequately modeling her construal of and reactions to the world.

Although higher-order narratives influence cognitive processes, the coherence of these narrative representations varies from person to person, with some having more clearly articulated stories for situating their experiences than others (McAdams, 2006). A crucial consequence of this variation is that those with only vague narrative representations of the world will have more difficulty selectively focusing attention on the most relevant aspects of the environment. From a predictive processing perspective, a lack of narrative coherence will produce an inability to generate an adequate predictive model of the world, hindering the ability to “explain away” the majority of the sensory information being received and producing a burdensome processing load. When no high-level generative model is available to adequately anticipate the ongoing unfolding of events, the cognitive system can very easily be overwhelmed by the large volume of “error” information being carried up the neural hierarchy (Hirsh, Mar, & Peterson, 2012). This has downstream consequences for the individual, as a lack of personal narrative integration is associated with reduced well-being (Baerger & McAdams, 1999). In contrast, developing clearly

articulated narrative accounts of one's experiences is associated with a number of positive health benefits (Pennebaker & Seagal, 1999).

Although the affective significance of prediction errors was not highlighted in Clark's article, the narrative account and its base of subjectivity makes this clear, as prediction errors can reflect violations of basic life assumptions. Such errors are often experienced as aversive and threatening (Hajcak & Foti, 2008) and can trigger a variety of attempts to minimize or suppress error information (Proulx, Inzlicht, & Harmon-Jones, 2012), some of which veer toward the pathological (Peterson, 1999). The emotional impact of expectancy violations also appears to vary depending on the level of the neural hierarchy at which they occur, such that relatively low-level errors are experienced as fairly benign while violations of one's core narratives about the world are often associated with severe forms of emotional trauma (Janoff-Bulman, 1992). Within the narrative framework, the ability to flexibly maintain the integrity of one's high-level generative models (instantiated as narrative representations), is thus one of the core requirements for mental health and well-being. Inasmuch as the humanities help to provide us with narrative representations that capture the emotional vicissitudes of daily life in a given cultural environment (Oatley, 1999), they help to orient and constrain our predictive modeling and provide critical components of our adaptive functioning in the world. Integrating narrative psychology with the predictive processing account thus highlights the importance of humanistic approaches for arriving at a complete understanding of human cognitive science.

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