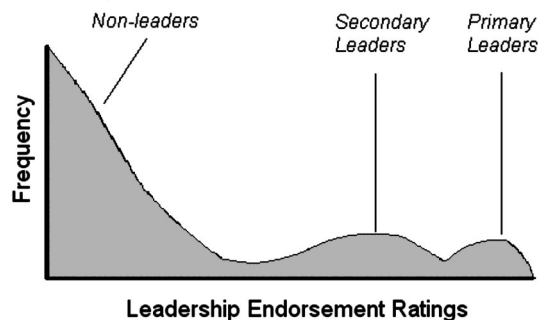


Figure 1
Probability Distribution of Leadership Endorsement Ratings Resulting From a Swallowtail Catastrophe Process



the self-organizing process that underlies the transition from a leaderless group to one with a firmer social structure.

Asymmetry consists of a broad repertoire of leader behaviors in both creative problem solving and coordination-intensive groups. Prominent among them is control of the task. Psychologists should be able to guess what personality traits could be relevant here, if not elsewhere in the mix of variables. For production groups, the emphasis is on tension reduction and optimism, and the realism of the group's production goals, even though the goals may have been imposed by outside agents.

Bifurcation in creative problem solving groups is centered on creative input from the individual. For production groups, it consists of controlling several aspects of the work situation. For coordination-intensive groups, it is primarily localized to whether the group can communicate freely or is working in communication-limited circumstances.

The bias parameter for coordination-intensive groups is, once again, task control. The bias parameter has not yet been identified for the other two types of groups, but it should be forthcoming with future research. An exposition about future research within the nonlinear paradigm is forthcoming (Guastello, in press).

What else do we know at this point about leadership emergence? The emergence of leaders and the social structure that surrounds them occurs in conditions of high entropy—strong imperatives to produce a new result, uncertainty about the best ways to interact, and a good deal of unpatterned bilateral interactions among group participants. When the levels of interaction reach a critical mass, patterns begin to emerge, and the group self-organizes into a social structure. This

turning point has been characterized as a phase shift, which is not fundamentally different from the phase shift that we associate with ice turning to water, or water turning to vapor. Nothing prevents the structure from dissolving and reforming; in fact, the possibility of such evolutions is built into the swallowtail catastrophe model, and it is part of what we would expect from a complex adaptive system.

Finally, the variables that are related to leadership emergence are not created equal in any dynamical sense. They play different roles in different task processes. Zaccaro's (2007) point is well taken, nonetheless, with a slightly different spin: The would-be leader who can implement a broad repertoire of contributions, and do so at the right time, may indeed emerge, and then remain, leader of the group over a wide range of issues and projects that the group eventually faces.

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Leadership and Attachment Theory

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Warren Bennis (January 2007) noted that we need a broader range of ideas when looking at leadership. We agree, and we believe that the inclusion of attachment theory in the study of leadership could strengthen leadership theories as a whole. John Bowlby's (1988) attachment theory has garnered the interest of social/experimental psychologists, evolutionary psychologists, cognitive psychologists, classically trained psychoanalysts and practicing psychologists, as well as neurobiologists and biopsychologists (Cassidy & Shaver, 1999). Attachment theory could extend the study of leadership into a variety of directions, setting the overarching, elusive concept of leadership on strong theoretical footing. Basing the study of leadership at least partially on a theory that emphasizes how individuals relate to each other and to groups could provide crucial theoretical concepts when looking at relational theories that address leader-follower dynamics.

The articles in the special issue on leadership (January 2007) were all strong examples of the direction in which leadership research has gone and the direction in which it should go. Adding attachment theory to the concepts illuminated in these reviews could give them a richer context. Bowlby's (1988) attachment theory, and its emerging extension, adult

attachment theory, look at how the relationship between caregiver and child affects both childhood and adult interpersonal relationships. Both theories presuppose that the internal working models (Pietromonaco & Barrett, 2000) of the individual formed within the caregiver-child relationship generalize to relationships across the life span. In other words, the internalization of the relationship between the caregiver and the child becomes a template for how the individual addresses issues that occur in daily life when interacting with other individuals.

Current attachment theory research looks at adult functioning in such areas as trust (Mikulincer, 1998), conflict resolution (Simpson, Rholes, & Phillips, 1996), and how the individual views others in the world (Pietromonaco & Barrett, 2000), all vital tools when attempting to understand what makes an authentic leader (Avolio, January 2007). Individuals adapt these attachment-based internal working models about others and the self to the world around them as they learn about their current environment, and such models are seen as pervasive in interpersonal interactions. The study of an individual's internal working models could be applied fruitfully to the study of leadership. This application of attachment theory could create a larger picture that could map a leader's internal process when leading, when interacting with subordinates and boards, and in training situations and that could delineate a leader's own internal drive and growth as an individual.

The articles in this special issue covered topics ranging from trait-based leadership theory to a focus on the relationship between leader, followers, and a larger systemic entity. The authors discussed different aspects of a leader that are required for effective leadership (intellectual understanding, practical intelligence, wisdom, to name a few) at all of these levels. These different traits require an interpersonal orientation that is flexible, a willingness to learn, and an ability to deal with making difficult decisions. Attachment theory has much to say about an individual's interpersonal, cognitive, and emotional capacities to meet these sorts of challenges. While attachment theory has been brought into the leadership literature (see Kahn & Kram, 1994, and Popper, Mayselless, & Castelnovo, 2000), there is potentially a larger audience of researchers for whom attachment theory could prove fruitful.

We believe that these articles on leadership all point to the direction in which we as a field need to move: toward an under-

standing of the complex nature of the interactions between followers, leaders, and the environment. Understanding a leader's internal working models when engaging a complex, ill-defined set of problems could yield insight into his or her implicit theories about coping with problems and about how leaders should deal with quandaries. Attachment theory complements the diverse viewpoints expressed in the special issue, and attachment theory could also lend a predictive component that would aid in the understanding of the complexity of the matters leadership researchers study. Being cautiously bold, attachment theory could even reduce some of these complexities by adding an overarching relational theory of the interactions between leaders and followers within a complex system that is simple, accurate, and replicable.

Warren Bennis (2007) noted that there is no grand theory of leadership. If we as a field are to move forward in creating a fuller picture of leadership, it seems that attachment theory should have some role to play in sketching its outlines. It is known that when Darwin was looking for a mechanism to explain his theory of evolution, he had a book on his shelf that could have led him to Mendel's work on genetics. Although we do not want to push the metaphor, we believe that attachment theory could be a reference away from becoming a strong foundation for leadership theory and research if researchers were to look deeper into its dimensions and strengths.

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Diversity and Leadership

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As the United States becomes more diverse, we believe that attention to diversity should pervade all aspects of the profession of psychology, including teaching, scholarship, practice, and research. This focus on diversity has increased over the last two decades owing to the following realities: (a) Women now comprise 46% of the work force, and (b) between now and 2050, racial/ethnic minorities will grow from 28% to 50% of the U.S. population (U.S. Census Bureau, 2004). In addition, gay/lesbian/bisexual/transgendered individuals are increasingly open with regard to their sexual orientation. Consequently, in the last several years, psychologists and other scholars have noted that it is essential for us to move beyond single dimensions of identity in our theorizing and to instead investigate multiple and intersecting identities in order to obtain a more comprehensive understanding of important phenomena such as leadership.

Therefore, it was of concern to many American Psychological Association members that the *American Psychologist's* special issue on leadership (January 2007) failed to include attention to issues of diversity and intersecting identities as they pertain to leadership. According to Robert Sternberg, who wrote the Foreword to the special issue, the "special issue was organized by different paradigms for studying leadership (i.e., trait paradigm, situational paradigm, systems paradigm) rather than by different groups for whom leadership is