the literature (154 references) and points to the dangers of encouraging emotional experience in the absence of acquisition of a new response to the emotion-evoking material. The paper supplements the discussion by the Cochrane group (Wessely et al., 1999) about the reasons for ineffectiveness of one-session psychological debriefing after accidents.

Malt, U. F., & Olafsen, O. M. (1992). Psychological appraisal and emotional response to physical injury: A clinical phenomenological study of 109 adults. *Psychiatric Medicine, 10,* 117–134. A clinical and psychometric in-depth study of the acute psychological response to accidental injury conducted 8 to 96 hours after the accident, with reference to Richard Lazarus's coping theory.

Marks, I., Lovell, K., Noshirvani, H., Livanou, M., & Thrasher, S. (1998). Treatment of posttraumatic stress disorder by exposure and/or cognitive restructuring: A controlled study. *Archives of General Psychiatry, 55,* 317–325.

Mayou, R., Tyndel, S., & Bryant, B. (1997). Long-term outcome of motor vehicle accident injury. *Psychosomatic Medicine, 59,* 578–584. Results from a British study of the psychological outcome at 5 years of a sample of non-head-injured motor vehicle accident victims and identified baseline predictors.

McKenna, F. P. (1983). Accident proneness: A conceptual analysis. *Accident Analysis and Prevention, 15,* 65–71. Discusses the controversy about accident proneness and its reasons.

Rothengatter, T., & Vaya, E. C. (Eds.). (1997). *Traffic and transport psychology: Theory and application.* Oxford: Pergamon/Elsevier. Provides an overview of the developments in the field of traffic and transport psychology, intended for psychologists, ergonomists, engineers, and policymakers interested in the application of psychology to traffic and transport and for applied psychologists in general.

Shalev, A. Y., Bonne, O., & Eth, S. (1996). Treatment of post-traumatic stress disorder: A review. *Psychosomatic Medicine, 58,* 165–82. Reviews 81 articles about treatment of PTSD after trauma in general, not including eye movement desensitization techniques.

Shapiro, F. (1996). Eye movement desensitization and reprocessing (EMDR): Evaluation of controlled PTSD research. *Journal of Behavior Therapy and Experimental Psychiatry, 27,* 209–18. Reviews the literature and points out misconceptions about the method.

Shaw, L., & Sichel, H. (1971). *Accident proneness.* Oxford: Pergamon Press. A comprehensive review of the literature on accident proneness from 1919 until the late 1960s.

Simonet, S., & Wilde, G. J. S. (1997). Risk: perception, acceptance and homeostasis. *Applied Psychology: An International Review, 46,* 235–52. Presents the basic features of risk homeostasis theory and explains how this theory may help to understand the causation of the accident rate and how it may be used to develop an effective accident prevention strategy.

Ursano, R. J., McCaughey, G. B., & Fullerton, C. S. (Eds.). (1994). *Individual and community responses to trauma and disaster.* Cambridge, UK: Cambridge University Press. A compilation of review articles with a clinical focus about small and large-scale accidents with reference to individual, group, and community responses.

Wessely, S., Rose, S., & Bisson, J. (1999). *A systematic review of brief psychological interventions ("debriefing") for the treatment of immediate trauma related symptoms and the prevention of post traumatic stress disorder. (Cochrane Review).* In *Cochrane Library,* issue 2. Oxford: Update Software. A continuously updated review of randomized clinical trials of debriefing for accidents. Contains important consideration about methodology of debriefing studies; discussion about the short-comings in the evidence base for psychological interventions after accidents; and a huge reference list to controlled and uncontrolled treatment studies.

Wisner, D. H. (1992). History and current status of trauma scoring systems. *Archives of Surgery, 127,* 111–117.

Ulrik F. Malt

ACCULTURATION. *See* Culture; Cultural Disintegration; Ethnic and Racial Identity, *article on* Ethnic Identity; *and* Marginalization.

ACH, NARZISS (1871–1946), German psychologist. As a member of Oswald Külpe's Würzburg School, Ach became recognized for his introspective experiments on mental processes including concept formation, determining tendency, volition, and awareness. Ach's experiments were conceived in opposition to associationism, as he did not believe that mental processes could be conceptualized adequately in terms of connections among sensations, and also in contrast to the work of Wilhelm Wundt, as Ach emphasized the notion of imageless thought.

From a methodological point of view, Ach (1935) advocated *systematic experimental introspection,* which should take place during the time immediately following the completion of an experimental task. Ach argued that in order to achieve a complete picture of a subject's experiences, introspection must be systematic, with replicable results, and accompanied by interviews that supplement the subject's report and explore the subject's experiences. To control and assess the power of suggestion in the interview process, protocols must be taken and included in their entirety in publications (Ach, 1935).

Ach coined the term *determining tendency* to denote the idea that mental processes tend to be determined consciously or unconsciously by intended ends and not by associations. For example, a subject may be asked to add two numbers (Ach, 1935). If an experimenter shows the subject a card with the numbers 6 and 2,

the number 8, referring to the intended end of addition, enters the subject's awareness. Yet, if a subject is shown the same card after being told to subtract, the number 4 comes into awareness. The same stimulus leads to different thoughts as intended ends determine what the mind does with two numbers. Ach (1921, 1935) performed a variety of experiments to demonstrate the power of this concept and worked with hypnotic suggestion (Ach, 1905/1951) in order to study the unconscious dimensions of the determining tendency.

In his psychology of volition (*Wille*), Ach (1935) argued that the determining tendency is a necessary but not sufficient condition of volition. Will refers to a specific psychological dimension that cannot be reduced to other forms of human experience. To assess volition Ach developed sophisticated experiments. For example, subjects had to learn nonsense pairs of syllables. After associations were learned, and the first syllable automatically elicited the second syllable of the pair, Ach asked the subject to no longer produce the learned second syllable but a syllable that rhymes with the first syllable. Depending on the number of learning trials, it took more or less volition or willfulness (*Vorsatz*) for the subject to suppress the associated syllable and produce the rhymed syllable. Thus Ach was able to compare experimentally and through introspection the effect of volition against the power of learned habit (association).

Ach (1935) also introduced the idea of *determining emotions*, an effect found more strongly in extraverts than in introverts. Late in his career, Ach also supported National Socialism, and his ideological usage of the psychology of volition (Geuter, 1984/1992) raised questions about the relationship between political beliefs and psychological research.

Bibliography

Ach, N. (1921). *Über die Begriffsbildung: Eine experimentelle Untersuchung* [On concept formation: An experimental study]. Bamberg: Buchner.

Ach, N. (1935). *Analyse des Willens* [Analysis of volitions]. Berlin: Urban & Schwarzenberg.

Ach, N. (1951). Determining tendencies: Awareness. In D. Rapaport (Ed.), *Organization and pathology of thought* (pp. 15–38). New York: Columbia University Press. (Original work published 1905)

Geuter, U. (1992). *The professionalization of psychology in Nazi Germany* (R. J. Holmes, Trans.). New York: Cambridge University Press. (Original work published 1984)

Thomas Teo

ACHIEVEMENT MOTIVATION. The achievement motive, a desire to perform well and attain success, clearly plays an important role in individual and societal accomplishments. Henry Alexander Murray, Jr. introduced the term into personality psychology, as one of 20 fundamental human "needs" or motives. Although many personality tests contain a scale designed to measure achievement motivation, the term was popularized in personality psychology by the Thematic Apperception Test (TAT) content analysis scoring system developed by McClelland, Atkinson, Clark, and Lowell (1953; see also Smith, 1992, chaps. 9–10). Based on the effects on TAT stories of several different kinds of experimental arousal of achievement motivation, McClelland and colleagues defined the achievement motive as involving a concern for excellence—specifically, images of positive and negative anticipations, instrumental activity, explicitly stated desire or need, and goal satisfaction. The TAT measure of achievement motivation can also be applied to other verbal material, such as interviews, speeches, or literature.

In fact, the thematic apperceptive (or implicit) and questionnaire (direct or conscious) measures of achievement motivation do not correlate; moreover, they show different patterns of associated actions and life outcomes. Spangler's (1992) analysis suggests that the TAT achievement motivation measure involves sensitivity to intrinsic, task-related achievement incentives; whereas the questionnaire measures reflect a sensitivity to social incentives associated with achievement. These considerations suggest that implicit and conscious achievement motives are embedded in two fundamentally different motivational systems (McClelland, Koestner, & Weinberger, 1989).

People who score high in TAT achievement motivation prefer and work hardest under conditions of moderate and realistic (versus extremely high or low) risk, especially when they have some control over results. They are restless and innovative. They seek and use new information, advice from experts (versus friends), and feedback about their previous performance. They can delay gratification, perhaps because they experience time as moving fast, and display a subdued, somber personal style. They bargain rationally and cooperatively, and get along well with other people. Nevertheless, they are prone to cheat and use illegal (or even revolutionary) tactics when necessary (McClelland, 1985, chap. 7; Smith, 1992, chap. 9; Winter, 1996, chap. 5). They show a facilitating attributional pattern in the domain of achievement tasks, such that they explain their success as due to ability or effort but view their failures as the result of external circumstances or luck (Weiner, 1985). Not surprisingly, therefore, such people tend to be successful in business, especially in small "entrepreneurial" businesses, in sales, or in larger companies that are "open" and achievement oriented. They also show upward occupational mobility.

In a landmark interdisciplinary study, McClelland