

Quirks: Leveling and Sharpening

Leveling and sharpening are two functions that are automatic and exist within our memory. *Sharpening* is usually the way in which we remember small details in the retelling of stories we have experienced ourselves or are retelling those stories. *Leveling* is when we keep out parts of stories and try to tone those stories down so that some parts are excluded. Therefore it makes it easier for us to fill in the memory gaps that exist.

Relevant Research

The basic psychology of rumor.

Allport, G. W.; Postman, L. J. Transactions of the New York Academy of Sciences, Vol. 8, 1945, 61-81.

Abstract

The "embedding" process, by which objective information is recast to fit the individual's own needs and interests, is analyzed as the source of rumor. "Whenever a stimulus field is of potential importance to an individual, but at the same time unclear, or susceptible of divergent interpretations, a subjective structuring process is started. Although the process is complex (involving, as it does, leveling, sharpening, and assimilation), its essential nature can be characterized as an effort to reduce the stimulus to a simple and meaningful structure that has adaptive significance for the individual in terms of his own interests and experience. The process begins at the moment the ambiguous situation is perceived, but the effects are greatest if memory intervenes. The longer the time that elapses after the stimulus is perceived, the greater the threefold change is likely to be. Also, the more people involved in a serial report, the greater the change is likely to be, until the rumor has reached an aphoristic brevity, and is repeated by rote." A rumor ("a proposition for belief of topical reference, without secure standards of evidence being present"), depending for its existence upon these processes, "is never under any circumstances a valid guide for belief or conduct."

Once upon a time there was a math contest: Gender stereotyping and memory.

Ganske, Kathryn H., Hebl, Michelle R.

Teaching of Psychology, Vol 28(4), Nov, 2001. pp. 266-268.

Abstract:

In this classroom exercise, students observe gender stereotypes influencing memory processes. A student retells a story to a classmate, who in turn repeats it to a third classmate, who retells the story to the entire class. The gender of the main character changes how others remember and retell the story. The exercise also demonstrates other memory concepts and G. W. Allport and L. Postman's (1947) classic concepts of leveling and sharpening. Student (aged 17-45 yrs) evaluations of the exercise reveal that comprehension of gender stereotyping improved significantly after participating in the demonstration. Thus, this demonstration helps students learn about memory processes and the influences of gender stereotyping on behavior.

Leveling-sharpening and serial learning.

Gardner, R. W., Long, R. I. Perceptual and Motor Skills, 10, 1960. pp. 179-185.

Abstract:

"Leveling-Sharpening, a principle of personality organization inferred from consistent individual differences in assimilation (perceptual process-memory trace interaction) observed in earlier studies, is shown to affect the nature and number of errors in a rote learning test involving two lists of similar words. The results for 20 Ss suggest that individual differences in this dimensional principle of cognitive control may be important determinants of learning and recall in a variety of situations."

Cognitive controls as determinants of learning and remembering.

Gardner, Riley W., Long, Robert I. Psychologia, 3, 1960. pp. 165-171.

Abstract:

In support of the thesis that complex cognitive behavior can be fully understood only when an understanding is gained of the individual laws in learning and remembering as well as the general laws, recent studies done at the Menninger Foundation are summarized. Some aspects of individual differences being studied are: the selectivity of attention deployment, the field-articulation principle; the habitual extensiveness of scanning under free scanning conditions; and leveling-sharpening behaviors. A tendency toward extreme leveling is suggested as a necessary but not sufficient condition for development of repression as a defense mechanism.

Leveling-sharpening, field-articulation, and the associative memory ability.

Gardner, Riley W., Jackson, Douglas N., Messick, Samuel J. Educational Testing Service, US

Parent Book Series: Psychological issues; Vol 2 (4)

Abstract:

The study described in this monograph was designed to explore relationships between two general classes of variables, cognitive control principles and intellectual abilities. This chapter contains a description of the *leveling-sharpening* control principle and describes an extension of studies that show the relationship of field-articulation on the one hand, and leveling-sharpening on the other, to different aspects of learning and recall.

Influence of task and subject variables in the Squares Test of leveling-sharpening.

Gilgen, Albert R., Bakan, Paul. Perceptual and Motor Skills, 27(1), 1968. pp. 211-218.

Abstract:

Leveling-sharpening, a hypothesized dimension of cognitive structure, is operationally defined in terms of differentiation and/or trend measures of Squares Test performance, both types of measures being assumed to reflect the degree to which memory traces of the stimuli (squares of light) assimilate. Results from 300 Ss indicate that differentiation scores to some degree reflect: (1) the way Ss interpret the instructions concerning the response scale they are to use, and/or (2) Ss' motivation to perform the task. Trend scores were found to be a function, in part, of the degree to which Ss reply on the instructional information given them concerning the size range of the squares, with some evidence that women rely on this information more than men.

The image of the Indian army and its effects on social remembering.

Haque, Abdul, Sabir, Mohammad.

Pakistan Journal of Psychology, Vol 8(1-2), Jun, 1975. pp. 55-61.

Abstract:

Studied social remembering in relation to national stereotypes. A passage concerning the Indian Army's performance in the Indo-Pakistani conflict was the experimental material used with Pakistani university students sometime after the fighting in 1965. Ss worked with serial reproduction method. Reproductions showed the familiar leveling and sharpening features. However, the important finding had to do with the contents of distortion, inasmuch as belittling of the Indian Army was an unambiguous manifestation of the negative stereotypes of Indians held by Pakistanis.

Memory for events in close relationships: Applying Schank and Abelson's story skeleton model.

Holmes, John G., Murray, Sandra L.

Knowledge and memory: The real story. Wyer, Robert S. Jr. (Ed); pp. 193-210; Hillsdale, NJ, England: Lawrence Erlbaum Associates, Inc; 1995. viii, 243 pp.

Abstract:

[comment on] R. Schank and R. Abelson's chapter [see PA, Vol 82:43702; 95-188005-001] / they suggest that life's exigencies are such that the natural complexities of our realities are not easily contained in a story format / Schank and Abelson develop the provocative view that these leveling and sharpening aspects of storytelling are critical in determining memory for events: the "laundered version" of experiences, as represented in the story skeleton, is largely what is remembered / [they] base this argument on a functionalist view of social cognition, suggesting that knowledge is often structured in a story format to facilitate adaptations to everyday situations, and to aid efficient storage in memory of interconnected experiences given the perspective, this chapter focuses heavily on assimilative processes and on the role of the structure of existing stories in shaping interpretations of events / argue that although these themes are an integral part of the story, they fail to capture some important aspects of the process of narrative construction / [suggest] that storytelling is a process located at the intersection of motivation and cognition / focus on the process of motivated construal, particularly in the domain of close relationships / argue that narrative form provides considerable cognitive advantages in terms of helping individuals sustain important relationship beliefs

Leveling-sharpening and memory organization.

Holzman, P. S., Gardner, R. W. The Journal of Abnormal and Social Psychology, Vol 61(2), Sep, 1960. pp. 176-180.

Abstract:

The Schematizing Test (see 35: 2266) and a psychophysical task utilizing the method of single stimuli were used to differentiate a group of "levelers" (in a perceptual sense—or, in a psychoanalytic sense, repressors) from "sharpeners." Ss were asked to relate requested details of a story (the Pied Piper of Hamelin), the story being used as a measure of remote memory. The groups were differentiated on the basis of such recall. The results were seen as supporting the effects of cognitive style upon memory.

An information-theoretical reinterpretation of the autonomous changes in visual memory.

Kempen, G. A. Anthropology & Medicine, 15(1), 1966. pp. 9-26.

Abstract:

A distinction is suggested between the gestalt-theoretical and the information-theoretical views about visual memory. The former emphasizes the concept of *pragnanz* by which a pattern is normalized by leveling or

sharpening. The latter states that changes in visual memory are due to the loss of "units of structural information." the experiment seeking to prove the latter viewpoint consisted of ss observing for a few sec. 7 3-figure sets of slightly different designs. After varying periods of time the ss were asked to select from similar sets the designs previously observed. The experiment did not clearly substantiate the information-theory of visual memory. The verbalizations of the ss apparently were basic to visual memories.

Leveling-sharpening: Its relation to repression-sensitization and memory.

Lewinsohn, Peter M., Flippo, Joseph R., Bergquist, William H.

Psychological Reports, Vol. 27(1), Aug, 1970. pp. 211-214.

Abstract:

Studied the relationships between leveling-sharpening and (a) repression-sensitization, and (b) short- and long-term memory. 2 separate measures of repression-sensitization, the Byrne Repression-sensitization-scale and the Rorschach Index of Repressive Style, were used on 500 undergraduates, and 48 Ss were selected from the total as having very high or very low scores. Repression-sensitization and leveling-sharpening were not related, nor was the hypothesized relationship between leveling-sharpening and memory obtained.

Cognitive styles: An integrated model.

Miller, Alan. Educational Psychology, Vol 7(4), 1987. pp. 251-268.

Abstract:

Describes a model of cognitive styles that demonstrates how individual differences in cognitive processes can be linked horizontally to specific cognitive styles and how cognitive differences can be vertically integrated into the superordinate analytic-holistic style. At the analytic pole of this dimension would be sharpening, field independence, analytic/verbal codes, high conceptual differentiation, convergence, serial processing, tight analogies, and actuarial judgment; at the holistic pole would be leveling, field dependence, analog/visual codes, low conceptual differentiation, divergence, holistic classification, loose analogies, and intuitive judgment. It is suggested that the model provides a framework within which the literature on cognitive styles can be organized. The 3 main components of the model (perception, memory, thought) are discussed.

Information-processing differences in repressors and sensitizers.

Pagano, Don F.

Journal of Personality and Social Psychology, Vol 26(1), Apr, 1973. pp. 105-109.

Abstract:

Used S. Sternberg's model of information processing to test cognitive differences in 14 repressor and 14 sensitizer undergraduates as determined by Byrne's Repression-Sensitization scale. Reaction time (RT) and error rate data from a choice RT memory-search task revealed significant interactions between repression-sensitization and "Yes" vs. "No" responses. Data are consistent with expectations from ego-psychology theory and suggest that the stage of memory interrogation discriminates repressors from sensitizers. A "minimal interrogation" hypothesis was offered: Repressors have difficulty initially in executing interrogation processes efficiently (higher RT scores) to the extent that they manifest a chronic disposition to terminate interrogation prematurely (higher error rate). Results can be tied to the concept of "leveling-sharpening" and suggest that links can be drawn between cognitive and personality variables by using recently developed powerful models of perceptual-cognitive functioning.

Memory for meaning and grammatical structure: An experiment on retention of a story.

Tripathi, Anupam N., Psychological Studies, Vol 24(2), Jul, 1979. pp. 136-145.

Abstract:

Studied the pattern of memory for a story at retention intervals of 15 min, 24 hrs, 7 days, and 30 days. 12 male undergraduates were assigned to each of the 4 intervals. The results reveal significant main effects of Retention Interval and Parts of Speech, but the interaction between the 2 was nonsignificant. Analysis of modifications in terms of leveling, sharpening, and assimilation in the setting, theme, and plot of the story indicated significant effects of Retention Interval and Type of Modification. It is concluded that the principle of hierarchy of importance affects both syntactic and semantic aspects of memory.