

## Chapter 7

# Cognitive Maps and Susceptibility to Influence

Individuals build cognitive maps of their physical and psychosocial environment that are stratified in terms of psychological salience and acquire self-maintaining properties. Faced with an experience that deviates from the cognitive map ("incongruity"), arousal increases and leads to generalized stimulation-seeking, which is designed to obtain stimulation that matches the individual's cognitive map. Perceived congruity in sensory input lowers the level of arousal. Affiliative behaviors, "primary drive" behaviors and "displacement activities" are reinterpreted as stimulation-seeking behaviors. The maintenance of a cognitive map depends on sensory feedback from the external sources of stimulation from which they derive. When such feedback is unobtainable the cognitive map is apt to disintegrate. This chapter reviews data relevant to this last point and discusses the relationship between arousal and susceptibility to social influence.

### Cognitive Maps

The interaction between human beings and their interpersonal and physical environment has been described as a homeostatic system. Preserving the cognitive map through stimulation-seeking directed toward attachment figures ensures the continuity of human relationships. It is recalled that in their study of infant development, Schaffer and Emerson (1964) found that the infant initially seeks stimulation in an indiscriminate fashion.<sup>1</sup> The child gradually acquires what we have described as a cognitive map of its environment, and only familiar patterns of stimuli evoke smiling responses in children (Ahrens, 1954). Schaffer and Emerson also found that the individuals to whom infants became most attached were those who were most "stimulating" in terms of providing tactile, visual, olfactory, auditory and oral stimulation.

Given that the cognitive map depends for its maintenance on sensory stimulation that matches the stored information, perception and behavior can be markedly

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<sup>1</sup> Similarly, Hetzer and Tudor-Hart (1927, cited in Smith, 1969) found that babies at two months of age reacted indiscriminately to hand-clapping, kindly, angry and singing voices and a variety of other sounds. It is of interest that the first social responses of a human baby, the domestic chick, wild partridge and pheasant can be evoked by the same stimuli (Smith, 1969: 93).

disturbed by prolonged sensory deprivation. These effects (Kubzansky, 1961) include:

... breakdown in visual-motor coordination, an increase in apparent movement phenomena, increases in color saturation, decline in size and shape constancies, loss of accuracy in tactual perception and spatial orientation, increase in persistence of auto-kinetic effect, larger figural after-effects, difficulty in focusing, fluctuating curvature of lines and surfaces, and a general decrease in the efficacy of perceiving relevant stimuli.

These effects are consistently reported despite wide differences in experimental conditions and have been described as reflecting a *breakdown of internal norms*; that is, a weakening of standards against which to evaluate perceptual experience (Kubzansky, 1961). It is recalled that subjects undergoing sensory deprivation reported feeling dazed and confused by the experience (Bexton *et al.*, 1954). After prolonged immersion in a tank of water, subjects reported apprehension, fear and panic (Camberari, 1958; Lilly, 1956). Goldberger and Holt (1958) noted that some of their subjects felt dazed, disorganized, groggy, dizzy and emotionally unstable, with disturbances of body image and feelings of depersonalization after their period in isolation. Mendelson and Foley (1956) similarly found that a number of patients with poliomyelitis in tank-type respirators developed psychotic-like symptoms such as disorientation, confusion and delusions. Similar effects to those reported in sensory deprivation experiments are known from anecdotal knowledge to occur in aviators (Bennett, 1961), prisoners in solitary confinement (Burney, 1952; Meltzer, 1956), skin divers and lone voyagers (Brownfield, 1965; Ruff *et al.*, 1961). Admiral Byrd (1938) described his experience of isolation for six months in a small hut buried under the snow in the Antarctic. His confinement was voluntary, in order "to taste peace and quiet and solitude long enough to find out how good they really are". But after three months he felt "a tremendous need for stimuli and yearned for sounds, smells, voices and touch". He began to lose his sense of identity and felt as if he were floating through timeless space like a disembodied spirit.

This evidence strongly suggests that internal norms, evaluative schemata, or conceptual systems (that is, cognitive maps) depend for their maintenance on sensory feedback from the individual's environment. This applies not only to visual norms but to those internal norms constituting the individual's identity or self-concept. The maintenance (and disintegration) of cognitive maps occurs on many levels of organization, in ways hitherto treated separately.

It follows from the above that if the individual can obtain the necessary feedback to his cognitive map in the face of threats of various kinds, his level of arousal will be controlled and the likelihood of cognitive disturbance will be minimized. Numerous case studies from the literature support this prediction. Writing about his experience in Nazi concentration camps, Bettelheim (1943) felt that his chances of survival were greatly enhanced by the fact that he self-consciously maintained his identity as a detached psychologist and observer. He notes that: "As conscientious objectors, all Jehovah's witnesses were sent to the camps. They were even less affected by imprisonment and kept their integrity thanks to rigid religious beliefs" (Bettelheim,

1960: 115). Similarly, Nardini (1952), an army physician captured by the Japanese, was convinced that those who remained psychologically intact throughout the ordeal of the Bataan death march tenaciously maintained their identification with other men. Commenting on the reports of those who survived the experience of prolonged isolation, Burns and Kimura (1963: 168) describe how a conscious effort was made by each man to control his own thought processes, to structure his work day rigidly, and to draw into himself for added stimulation and interest. Dr Alain Bombard, who made a solo voyage across the Atlantic in a small dinghy, reported that freedom from regularity and from the need to perform certain tasks at specific times was detrimental to his well-being. A study of the group structure of submarine crews provides a further illustration (Scott, 1952, cited in Weybrew, 1967). The study showed that: "... the quality of a submarine crewman's adjustment to the confinement, the stale air, and to the other stresses of prolonged submergence, was related to the degree of 'role congruence', defined ... as the consistency of the man's perceived role with respect to the role imposed by the Navy system."

While some have quickly succumbed to the stress of long-term isolation, many have survived, indicating that there are important individual differences in the ability to cope under these conditions. Robert Stroud, the "Birdman of Alcatraz" (Gaddis, 1958), who was in solitary confinement for 56 years, became a literate, active, productive expert on birds, experimental research, penology and criminology. He was urged towards intense study by the need to overcome the boredom and monotony that threatened to overcome him, and he was allowed all the material with which to accomplish this (Brownfield, 1965: 22).

Burns and Kimura (1963: 169) comment:

... the isolate, if he is to survive, typically adopts an introspective or internal resilience in order to cope with the terms of aloneness. In group situations, this evolves in the form of a well-defined role structure. In individual cases, like those of the shipwrecked mariner ..., the man in solitary confinement ..., or the isolated adventurer ... the defense mechanisms take different forms. Typically, these persons acquire a deep-set conviction that they will master the experience; they become highly motivated and devote most of their working hours to acquiring new scientific or technical skills.

If the individual can, so to speak, carry salient aspects of his environment around with him, his level of arousal will be controlled in the face of environmental changes of an aversive or "incongruous" kind. Clinical and anecdotal examples of this point are first reviewed, followed by experimental data.

Titmuss (1950) reports how children evacuated out of London and away from their families during the Blitz in 1940 were much more likely to be severely disturbed by the experience than those who remained with their families during the bombing. For young children, disruption of the family bond appeared to be the most traumatic factor in the period of heavy air raids (Glover, 1942). Glass (1954) found that of psychiatric battle casualties evacuated from battle zones and given intensive psychotherapy, only 15% could be returned to combat. If, on the other hand, such

men were maintained in the battle zone with their own units, the rate of return to combat was much higher. Other combat studies suggest that small units are very effective in sustaining members under severe battle stress (Mandelbaum, 1952; Janis, 1963).

One of the earliest accounts of children's reactions to an unfamiliar environment is that of Arsenian (1943). Her subjects consisted of 24 children aged 1 to 2½ years, 16 of whom were placed alone in a novel situation consisting of a room with toys. The remaining eight were accompanied by their mothers. Those exposed individually to the novel environment reacted by screaming, attempting to escape, and autistic gestures, whereas those with their mothers showed comparatively little emotional disturbance, which soon abated.

Rheingold (1969, cited by C. Hutt, 1970: 154–155) studied the effects of a novel environment on the child alone, with his mother, and variants on these conditions, using toys and a stranger. Her subjects were infants approximately 10 months old. Results showed that solo exposure to a novel environment caused great distress and inhibited virtually all exploratory activity – effects that were not diminished by the presence of attractive toys or a stranger. In contrast, infants exposed to the novel environment in the presence of their mother showed no distress and explored freely. Also of interest was the finding that infants initially exposed to the situation alone continued to show distress and inhibition of exploratory activity even when their mothers were subsequently present, whereas those exposed initially with their mother to the strange situation showed no distress. As Hutt points out, “the fear of environment-novelty appears to have been so intense that it had a proactive effect on a potentially un-alarming situation. This fear was minimized by the presence of the mother or substitute” (p. 15).

The presence of strangers in an otherwise stressful situation would be expected to increase the arousal response. Consistent with this hypothesis, it is recalled that Back and Bogdonoff (1964) found that small groups of strangers undergoing the stress of having samples of blood drawn had higher resultant free fatty acid levels than did comparable groups of friends undergoing the same experience. Also consistent with this hypothesis are the conclusions of Wittkower and Fried (1959) in their review of cross-cultural psychiatric studies: namely, that a society's mental health problems increase according to the extent that traditional bonds between families and communities are disrupted. Yemenite and Bulgarian Jews who migrated to Israel as entire communities adapted well to their new environment, whereas Moroccans and members of other national groups entering Israel as single individuals suffered considerably more pathological reactions.

The fact that stress can be coped with more successfully if family units and communities are not separated helps to explain why “panics” occur so infrequently in community disasters brought about by bombing, floods, fires, and other threatening events because the vast majority of individuals are not separated from “salient” aspects of their environment. As we would say, their cognitive maps received a strong supply of congruent feedback. Examples of this phenomenon are cited in the work of Smelser (1963: 166), Killian (1951) and Fritz and Marks (1954).