

Scripts

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Understanding and production of messages and social behaviors are based on communicators' prior knowledge, which is organized and structured by schemas (Bartlett 1932; Rumelhart 1980). Over the years, researchers have identified different kinds of schemas, such as frames, story schemas, macro-structures, scenarios, mental models, scripts, and memory organization packets (MOPs).

Scripts are event schemas; that is, they structure common and ritualized activities that involve a sequence of actions. A script is a sequential list of characteristic actions of events or activities, such as eating at a restaurant or attending a birthday party. Scripts guide one's actions, expectations, and understandings during the enactment of the script-based activities (→ Schemas; Schemas, Knowledge Structures, and Social Interaction).

ORIGIN OF THE CONCEPT

Scripts were first introduced by Roger Schank (1975; Schank & Abelson 1977). In an attempt to provide a data structure enabling computers to understand typical and repeatedly performed human activities, Schank (1975) developed conceptual dependency theory. Given that the basis of natural language is conceptual, understanding language involves extracting its conceptual base; that is, identifying concepts and realizing the relationships between them.

Building on conceptual dependency theory, Schank and Abelson (1977) introduced the concept of a script, defined as a stereotypical sequence of actions of an often-performed social activity, which consists of the name of the script, roles, props, entry conditions, results, and scenes. Scripts may have variations through equifinal actions, variables, script paths, scene selection, tracks, interference, distraction, and free behavior.

Scripts are different from other sources of mindless behaviors such as habits (Abelson 1981; → Mindlessness and Automaticity). While habits are response programs, scripts are knowledge structures. Scripts are not automatically activated like conditioned behaviors; instead, their activation is contingent on the satisfaction of action rules attached to them. When there is a goal state (e.g., “I have to eat as I am hungry”), persons realize what they have to do based on earlier learning or direct experiences (e.g., “I have to buy some food”), and activate the appropriate script. (e.g., the “visit a restaurant” script).

PREDICTIONS AND FINDINGS

Schank’s script concept generated many predictions related to the structure, nature, and use of → memory, including a typicality effect, an atypicality effect, a gap-filling phenomenon, and a reordering phenomenon (Abelson 1981). The *typicality effect* occurs when people encounter the information that fits the activated script well: they comprehend this information faster and recall it better. The *atypicality effect* takes place when people encounter information that does not fit the script. The “*script pointer + tag*” hypothesis suggested by Schank and Abelson (1977) posits that a script tags actions that are unrelated to or inconsistent with the script along with a header to the script. As atypical information is tagged to the script, discriminatory accuracy is better for this information.

Between the two types of effects, the typicality effect lasts longer: while recognition and recall memory is initially better for atypical than typical actions, the rate of forgetting is greater for the tagged atypical actions than for tagged typical actions. Both the gap-filling and reordering phenomena reflect that people tend to orient their memories to be consistent with their scripts. When asked to recall stories study participants had heard earlier, they remembered some actions that had not been told just to fill in the empty slots in the script, and changed the sequence of disordered actions in the stories to fit the order of script.

MEMORY ORGANIZATION PACKETS

Initially, Schank and Abelson (1977) assumed that a script was stored sequentially in its entirety. For example, the dentist’s office visit script and the physician’s office visit script were separate scripts, stored in separate locations in memory. However, Bower et al. (1979) found that when people were told two different stories having essentially the same scene, like the waiting room scene in a physician’s office and a dentist’s office, they recalled some information mentioned in one story when reconstructing the other story, which would not happen if people had stored the script-based stories in separate locations. Abelson (1981) attempted to resolve this problem by introducing the concept of a *meta-script*, which contains scenes that are much more abstract or generic than those in a script. Schank (1982) developed a more flexible theory, called dynamic memory theory, and a less rigid concept, called a memory organization packet or MOP.

Schank’s reformulated theory differentiated *four levels of memory*: event memory (EM), generalized event memory (GEM), situational memory (SM), and intentional memory (IM). EM contains specific remembrances of particular situations. GEM is a collection of events whose common features have been abstracted. SM contains relevant contexts, and the rules and standard experiences associated with a given situation in general. While

information about dentists resides in GEM, SM contains more general information like “going to a health professional’s office.” IM, the highest level of memory, includes the rules for getting people to do things for oneself and other plan-like information.

A MOP, a *memory structure* at the level of situational memory, keeps information about how memories are linked in frequently occurring combinations. The basic building blocks of MOPs are scenes, which are groupings of generalized actions with a shared instrumental goal. What a MOP does is to prescribe how scenes are linked together in order to accomplish a higher-order goal. The number of scenes is limited, and any given scene can be used by many different MOPs. For example, the waiting room scene can be organized by most MOPs that seek help from a professional.

The hierarchical relationship between a script and a scene is reversed in Schank’s new framework. Originally, scripts were composed of one or more scenes; in this new framework, scripts are now specific versions or tracks of a scene (they “color” a scene). In dynamic memory theory, a script is a sequence of specific actions that take place within a scene. Different from the original concept of script, which was assumed to exist in memory in one precompiled chunk, a MOP or a super-script is not stored in its entirety. It is organized when needed and disassembled when the job is completed. Thus, the confusion between two stories sharing the same scene, which was reported by Bower et al. (1979), is now explicable. While the original concept of a script has been reformulated, researchers often use the term to denote a script (old meaning), a MOP, and other event or action schemas.

SCRIPTS AND MOPS IN COMMUNICATION

Scripts and MOPs have been tested in or applied to several different areas of communication research. Scripts have been investigated in two primary ways. First, a group of researchers have examined *the role of scripts in social relationships*. Honeycutt et al. (1989) examined the use of scripts in → relationship development, and reported that a prototypical relational escalation memory structure contained 13 typical behaviors. Holmberg and MacKenzie (2002) differentiated people’s personal relationship script (the past and future development of their own relationship) from a normative relationship script (their conceptions of how relationships typically develop), and found that correspondence between personal and normative scripts, and agreement between partners on personal scripts, predicted several measures of relationship well-being (→ Communication: Relationship Rules; Interaction; Interpersonal Communication).

Sexual scripts are a second area of communication receiving attention from a number of researchers. Lenton and Bryan (2005) reported that people used sexual scripts to make judgments of the sexual intent of others. Wiederman (2005) proposed that scripts for sexual activity were markedly different for males and females, at least in western society. Emmers-Sommer et al. (2005) discussed the role of sexual scripts in health communication.

MOPs have also been investigated by communication researchers in two primary ways. First, Kellermann and her colleagues have studied *informal, initial conversation MOPs* (Kellermann 1991, 1995; Kellermann et al. 1989; Kellermann & Lim, 1990). Initial interaction scripts were first introduced by Douglas (1984). As dynamic memory theory was introduced, Kellermann oriented to the less rigid structure of MOPs to account for the simultaneously flexible and conventional nature of conversational interaction. The identification of the

conversation MOP for informal, initial interactions was undertaken by Kellermann et al. (1989), who reported that the sequencing of scenes in the conversation MOP corresponded to the sequencing of actual conversational behavior. A second study extended the first study to include varying degrees of the relational goals in initial interactions (Kellermann 1991). Kellermann and Lim (1990) confirmed that the conversation MOP sequentially organized scenes in a manner corresponding to how people organize their topical talk in conversational encounters (Kellermann 1995). Kellermann and Palomares (2004) examined how MOP scenes could be used to identify different types of relational roles of conversational participants. Kennedy (2000) extended this research to study the conversational behavior of adults with right-hemisphere brain damage. Turner and Cullingford (1989) used the conversational MOP to program a computer to understand conversational interaction.

A second use of MOPs in communication research is in the domain of *small group communication*. Pavitt (1992) reported that group decision-making was led by a top-down processing structure represented by a conversation MOP. Pavitt and Johnson (2001) proposed that people's group procedural MOP could be classified as linear, reach-testing, or some compromise between the two.

SEE ALSO: ► Communication: Relationship Rules ► Comprehension ► Information Processing ► Interaction ► Interpersonal Communication ► Memory ► Mindlessness and Automaticity ► Relationship Development ► Schemas ► Schemas, Knowledge Structures, and Social Interaction ► Schemas and Media Effects ► Stereotypes

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