

## **Multiplicity and Culmination**

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Key Concepts: *Routine, Action Logic, Recall, Retrieve*

### **1. Routines and distinctness**

In English, the word routine is a french borrowing dating from the 1670s, a time when french terms in the military sphere were a sign of conceptual innovation rather than a victorious nation's imposing its language on neighbouring countries. (See Francis Bacon, *The Essays, On Studies*; an early description of procedural routines). The meaning of the word, customary way, beaten path, points in the direction of commerce and trade. Much later the computing meaning of the word shows up: A sequence of instructions for performing a task that forms a program or a distinct part thereof. One of the most interesting efforts at making the latter concept distinct is certainly the short contribution *Checking a Large Routine* (1949) by Alan Turing. These uses of the concept 'routine' exhibit some ambiguity: on the one side, a routine can be an intensional implicate of a habit, in the sense that having a worked-out part can help making a habit of something (for instance, the habit of performing the routine regularly); on the other side, a routine can be self-strengthening without resulting in a habit (at least not in the sense of outputting, say, religious or moral attitudes as a result). As a consequence, a habit can be both conceived of as a continuum of paths, a complete and thorough policy; and a collection of random walks, given a context where reliability and maximality fail (think of praying as an example for both: an effective way of training mindfulness given a pre-institutional setting; or an empty form of bigotry in a secularised context). In the context of a theory of (information in) action, an investigation of definitional markers of 'routine' is thus a promising one. In 1985a (*Synthese* 65, pp.185-210), Krister Segerberg introduces the concept of a routine as a primitive to be used as a basis for developing a philosophy of action: "To do something is to run a routine. To be able to do something is to have a routine available. To deliberate is to search for a routine" (Segerberg 1985a, p. 188). Markers of a routine are the concept of level (for instance, a chain of command, Segerberg's example), and that of perspective, being a partially ordered set of levels. The key function of 'routine' in Segerberg's account for action is that a routine provides, so to

speak, the action counting device for intentions. An agent intends to bring about a certain state of affairs  $S$ , thus, means that the agent selects an  $S$  individuating routine. In an assesment of Segerberg's approach to action theory, Dag Elgesem pointed out that some implicit assumptions of the concept of a routine result in inconsistencies (Elegesem Synthese 1990, vol. 85, No 1. pp 153-177). Elegesem shows that exactly the jointure routine-intention yields, in Segerberg's modeling, the unwanted result of a routine that never fails (Elegesem 1990, p. 163: Int  $a \beta$  Real  $a$ ).

## 2. Incompleteness and Causation

Segerberg's focusing on action incompleteness (Segerberg1992) can be seen as a reaction to Elgesem's criticism (as well as to other critical receptions by Thomason and Surendonk). The notion of action incompleteness, therefore, can be taken to be a refinement of 'routine'. The informal roots of 'routine' reach in the idea that acting means “to interfere with the course of nature” (v. Wright1963). An advantage of von Wright’s predicament ‘actions are not events’ is of considering events as structured (as encoded in linguistic representations) into an inner event (associated with the aspects of change and aspects) and an outer noneventive part (agentiveness and causation). The formal structure of acting, thus, is mirrored in descriptive categories as “to bring something about, to sustain something, to destroy something or suppress it” (v. Wright, Norm and Action.1963).

## 3. Sample, Multiplicity, Type Sensitivity

The idea this contribution intends to take stock with is that habit-forming parts (retention, learning, retrieval, indexing, refinement points for information) have to be incorporated in a model of acting in order for it to account for the eventive - non eventive divide within an acting sequence (act types and action tokens). Accordingly, going on  $\phi$ -ing (performing a routine) is modeled as a multiplicity function over action tokens: keep  $\phi$ -ing until token  $\Phi_{i+1} \beta \Psi$ , that is until  $\Phi_i$  defines a multiset with  $\Phi$ -multiplicity  $i$  over tokens  $\Phi_n, \Psi_m$ . The intuitive reading of the above being that the informal concept of routine has, as one of its implicit aspects, the functional idea of interaction, that is of turn-taking. The incompleteness of actions is, in this respect, a trivial fact about routines with other than trivial consequences.