

# Logic of Consequences and Logic of Appropriateness

**Martin Schulz**

Sauder School of Business  
University of British Columbia

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# Logic of Consequences and Logic of Appropriateness

Martin Schulz

**Abstract:** *The two logics capture a fundamental distinction between two modes of action in organizations (and beyond). They essentially characterize the difference between deliberate and habitual action. The two logics play a central role in theories of bounded rationality and have been elaborated by the Carnegie School and a considerable number of social scientific paradigms. They provide the conceptual starting point for studies that aim to understand how cognitive mechanisms (in particular, their limitations) drive action. At the same time they represent archetypes of action that play an enormous role both in the real world and in prominent models of organizations, firms, markets, institutions, states, and societies.*

## **Definitions:**

- Action follows a *logic of consequences* when it is driven by subjective assessments of outcomes of alternative courses of action.
- Action follows a *logic of appropriateness* when it is shaped by *rules* relevant to the current situation.
- A *logic of action* is a characterization of a mode of action of an actor (individual and collective). It aims to capture the “reason to act”. Action can be seen as programmed by a logic when it is connected to (or “orientiert an” – using Weber’s expression) expectations (ranging from tacit to explicit, from realistic to quixotic) about the current course of action or its outcomes.

## **Cross-references:**

BTF, Carnegie School, bounded rationality, organizational learning, Herbert Simon, James G. March, information processing, bureaucracies, organizational rules, organizational routines, organizational memory, organizational knowledge, decision making processes, path dependency, neoclassical economics

## **Keywords:**

Routine versus non-routine situations, information processing, rule following, choice, organizational learning curves

Logic of consequences (LoC) and logic of appropriateness (LoA) are influential concepts in organization studies. The two concepts characterize the logics of action of imperfectly rational actors (e.g., individuals, groups, organizations) and thereby can help to understand and predict their behaviour. At the same time, the two logics provide the building blocks for new theories of action in organizations that transcend the narrow neoclassical frame of fully rational and utility-maximizing action. Conceptions of LoA and LoC have varied over time and authors/students; this article is anchored in original formulations of the Carnegie School (in particular, March and Simon, 1993; and Simon, 1947, 1955, 1978, 1996, 1999; March, 1978, 1982; Cyert and March, 1992).

A logic of consequences guides what we normally consider as ‘analysis-based’ action (March and Simon, 1993: 7) and normally comprises deliberate consideration of alternatives, assessment of their outcomes and preference-driven choices. Its key feature is the presence of calculated choice between alternatives. Actors driven by a LoC engage in some form of (imperfect) analysis to evaluate future consequences of their decisions. Action following a LoC thus involves a notable (but ultimately bounded) degree of information processing. This can make it dependent on scarce cognitive capacities of actors and generate prominent forms of imperfectly rational action such as satisficing (Simon, 1955), sequential attention to goals (Cyert and March, 1992), or myopic learning (Levinthal and March, 1993).

A logic of appropriateness governs what could perhaps better be called ‘rule-based’ (or ‘recognition-based’) action (March and Simon, 1993: 8), following a path that is guided by *rules*. Rules are relatively fixed responses to defined situations. The notion of rules is broad and includes both tacit and explicit forms of action programming, such as intuition, roles, habits, skills, routines, capabilities, experience, knowledge, conventions, policies, bureaucratic rules, norms, laws, institutions, and technologies. ‘Guided by rules’ can take on a fairly wide range of meanings, such as automatically following a familiar routine, neurotically conforming with a norm, diligently obeying a new law, generously fulfilling an obligation, casually observing a custom, using motor skills (to swim, bike, walk, type, speak, and so on), blindly following an order or stubbornly clinging to a superstitious ritual. The rules can originate from prior actions of the actor (e.g., priming, precedent, drill) or of other actors (e.g., in cases of mimesis, imitation).

‘Appropriateness’ of the LoA does not primarily refer to moral or aesthetical appropriateness; rather, the key feature of the LoA is a matching of rules to situations. Actors recognize a situation and connect it to appropriate action consistent with relevant rules (often anchored in the identities of the actors; March, 1982). Because LoA relies on matching of (signals about) situations to rules, it can be considered as a ‘recognition-based’ logic of action (March and Simon, 1993: 8). The underlying cognitive processes are often based on intuition, and this can enable rapid response actions. But as intuition-based action, LoA is inherently inaccurate and recognition errors can lead to spectacular accidents (e.g., Gersick and Hackman, 1990). Compared to the LoC, the LoA involves less information processing and this can entail potent benefits, for example, due to routinization, specialization, simplification, knowledge re-use, absorption and imitation.

LoA and LoC are fundamental components of all meaningful action. Action without either logic is random and appears senseless (without ‘rhyme or reason’), while action shaped by the logics takes on direction and meaning. In principle, LoA and LoC are available for every action; they span the entire space of meaningful action. Action can follow predominantly one or the other logic, and is often a mix of both. The relationship between the logics and action is multifaceted and has epistemological and practical implications: (i) The *attribution* of an action to a logic can be either subjective or objective. Each logic can be imputed by an observer (researcher) or the actor (on itself and others, intuitively or deliberately). (ii) *Shifts* between logics are common and are at the heart of powerful organizational mechanisms discussed below. (iii) The analytical power of the two logics derives from the illuminating *comparisons* that they offer. Comparisons between a LoA and LoC version of the same action can reveal crucial differences, such as routine versus non-routine phone calls, mindless versus mindful cost cutting or the automatic versus deliberate entry into a military conflict (e.g., Allison, 1971; March, 1994).

It is easy to misunderstand or overextend the two logics of action. For that reason it is important to keep in mind that LoA and LoC are both logics of imperfect rationality that differ from the neoclassical logic of perfect (omniscient) rationality (LoP) which conceives action as fully rational and utility maximizing. Although LoP could be construed as a limit towards which LoC converges as constraints to rationality are removed, the construction (e.g., shifting assumptions and action from satisficing to maximizing) is likely to lead to unrealistic scenarios, comparable

to ‘counting the angels on the heads of neoclassical pins’ (Simon, 1999: 113). The LoA–LoC distinction opens the door to perplexing worlds of organizations built from plausible assumptions about imperfectly rational action, actors and outcomes. The two Carnegie logics provide a unifying framework of bounded rationality that can facilitate the development of powerful, realistic and relatively parsimonious explanations of the emergence of stable patterns of action (including individual, organizational, economic, social, political and legal action) and their evolution over time.

The LoA–LoC distinction has served as a wellspring of innovation in the social and organization sciences. It has been extended into many directions and invites intriguing comparisons with extant dichotomies. Given the intellectual appeal and central position of the two logics, it might be prudent to be aware of notable pitfalls that can (and tend to) occur when the logics are too hastily extended into new directions or connected to (or reduced to) other theories, conceptions and dichotomies. Thus, a few caveats are in order.

- *Persistence and shifts in logics.* Some efforts have extended the two logics to characterize institutions and fields (Alford and Friedland, 1985; DiMaggio, 1991), ‘value spheres’ (Townley, 2002), industries (Thornton and Ocasio, 1999; Thornton, 2002), nation states (Hicks, 1995) or political orders (March and Olsen, 1989, 2006; Olsen and March, 2004). Such extensions can be instructive, but often make strong assumptions about the persistence of the logics in a given course of action (and have met a fair amount of scepticism, e.g., Sending, 2002; Goldmann, 2005). Although the logics could be seen as ‘explanations’ of actions of actors (in the sense of observers attributing reasons to action), they – by themselves – do not imply persistence of a given logic. Action can travel along paths that can be seen as following sometimes one logic and another at other times. Shifts happen between LoA and LoC, but can also happen within each, for example, when situations unfold and different rules become relevant or when the analysis of alternatives reveals new needs. Shifts come in all shapes and forms, from gradual to radical and accidental to predictable. The key insight here is that the logics are of limited use for prediction unless we understand the persistence of logics and shifts between them. Clearly, we would expect shifts to be path-dependent: persistence of logics and shifts between them are phenomena that follow their own rhythms as action unfolds and runs

into familiar and unfamiliar situations. However, the specific mechanisms that produce and prevent shifts and render them path-dependent for a given domain need to be articulated, and this is where extensions of the logics often struggle.

- *Normative conceptions*. Other extensions appear to drive the distinction between LoA and LoC into normative terrain. They are unlikely to succeed as, a priori, there is nothing that allows us to award moral superiority to one or the other (nor is there a justification for the imposition of order linked capriciously to one or the other logic). Ensuing controversies (e.g., Goldmann, 2005) have all too casually equated the LoA–LoC distinction with altruism and opportunism, and tend to neglect that both (altruism and opportunism) can be deliberate and habitual (as are the actions of criminals and saints). Although perhaps empirically correlated in some contexts, self-interest is analytically separable from the two logics (as is the presumption of a clear and stable ‘self’).
- *Subsumesmanship*. Each logic has been construed as a special case of the other. Proponents of institutions and cultures tend to regard rational choice as a special case of following appropriate rules (about behaving and appearing ‘rationally’). Advocates of rational choice and realpolitik tend to regard rule following as a form of voluntary submission to rules rationally agreed to. Such reductions can help to illuminate limiting cases, but they ignore the archetypical nature of the two logics and overlook that rationalization of habit and routinization of choice fail to do justice to either logic.
- *Institutional logics*. Barring subsumesmanship, the LoC–LoA distinction cannot be reduced to a special case of ‘institutional logics’, a notion that has assumed increasingly dominance in institutional thinking (Thornton and Ocasio, 1999; Thornton, 2002; Lounsbury, 2007). From the perspective of this article, all institutional logics are proper subsets of LoA. Moreover, the fundamental nature of the distinction between LoC and LoA does *not* extend to distinctions between different institutional logics – they face their own challenges of drawing and stabilizing categorical boundaries (e.g., Rao, Monin and Durand, 2005). Likewise, the degree to which institutional logics ‘compete’ with each other in a given situation (and how they compete) is a priori unclear, while the coexistence of institutional logics appears to be a common situation (e.g., Hinings, 2012).

Understanding these caveats and avoiding related pitfalls might not be easy, but can be facilitated by returning to the cognitive roots of the LoA–LoC distinction and recognizing how the logics differ in terms of information-processing mechanisms. The following subsections take information processing as the theoretical backbone to draw clearer distinctions between the two logics and to analyse shifts between them.

### **Information processing and logics**

Conceptually and empirically, the two logics involve different levels of information processing. They arise from the Carnegie School’s focus on information processing and limited rationality. The underlying assumption was that cognitive limitations shape the information processing of actors (individuals, groups, organizations) and thereby introduce characteristic biases into their decision-making and behaviour. From that perspective, different types of action – logics – could be identified that involve different levels and mechanisms of information processing.

Information processing levels are inherently lower for LoA than for LoC. LoA resides at the “‘routinized’ end of the continuum, where a stimulus calls forth a performance program almost instantaneously’ (March and Simon, 1993: 160), ‘with little or no hesitation’ (Simon, 1976: 89). In contrast, LoC resides at the non-routine end, where ‘a period of hesitation’ precedes choice (p. 89). It describes a “‘startle pattern’ of behavior” (p. 90) in which ‘a stimulus evokes a larger or smaller amount of problem-solving activity’, characterized by ‘search aimed at discovering alternatives of action or consequences of action’ (March and Simon, 1993: 160).

While the two logics differ principally in the terms of the level of information processing involved, the difference is neither absolute nor fixed. Within each logic, levels of information processing can vary, sometimes considerably. Some forms of LoA-based action can involve a significant degree of analysis for the classification of situations and retrieval of experiences (e.g., matching fingerprints in a database) and thus can require relatively high levels of information processing (March and Simon, 1993: 8-13) or ‘mindfulness’ (Levinthal and Rerup, 2006). Conversely, LoC-based action is greatly simplified by search and analysis routines (e.g., by data analysis skills), and it can involve the deliberate adoption of assumptions and rules that shape subsequent action. In practice, most situations involve a mix of both logics, although these situations might be characterized more by one than the other.

The existence of such mixed cases does not mean that the distinction between the two logics is invalid (as some have suggested, e.g., Goldmann, 2005). Converting a LoA situation into a LoC situation would require the addition of analytical steps typical for consequential action, such as search aimed at discovering alternatives of action, assessment of their outcomes, preference-driven choices and learning to avoid mistakes. Conversely, converting a LoC situation into a LoA situation would mean replacing consequential analysis with some form of performance programming typical for rule-based action, such as the intuitive matching of rules to the situation and their automatic (and often mindless) adoption and application. It turns out that such conversions have practical and theoretical relevance associated with real-world shifts in logics.

### **Shifts in logics**

Logics of action can shift naturally when elements characterizing the opposite logic become prominent in a given situation. Such shifts can be induced by a number of factors (accidentally or intentionally, exogenously or endogenously), but they can alter the character of the situation radically (e.g., from ‘new’ to ‘familiar’ or in the reverse direction, e.g., after a car crash) and can switch action into a different gear, with different information processing requirements and sometimes with dramatic differences in the level of information processing involved.

Powerful efficiencies can arise when action shifts in logic from LoC to LoA (and they can be – but do not need to be – the motivator for the switch). The shift occurs typically in the course of routinization (e.g., Becker, 2008; Schulz, 2008); a new path of action is carved by an actor reacting to a new situation, and subsequent encounters with that situation (or similar situations) require less cognitive resources. The efficiencies of routinization arise from developing and retaining solutions to familiar situations. On the individual level, ‘(h)abit permits conservation of mental effort by withdrawing from the area of conscious thought those aspects of the situation that are repetitive’ (Simon, 1976: 88). On the organizational level, when ‘methods of handling recurring questions become matters of organization practice, perhaps embodied in manuals of practice and procedure, they cease to be objects of reconsideration when these questions arise’ (p. 88). Decision premises, established through consequential analysis on a given level at a given time, inconspicuously influence (e.g., guide, legitimate, trigger, or set the context for) subsequent decisions and action on the same or other (e.g., subordinate) levels (Simon, 1947) and can lead to

the formation of elaborate (yet imperfect) decision trees, routines, and grammars (March and Simon, 1993; Pentland and Rueter, 1994). Organizational learning curves (e.g., Argote and Epple, 1990; Schulz, 2001a) in effect capture the returns of a gradual transition from LoC to LoA. Likewise, related economies of specialization arise from developing deep pockets of expertise and elaborating organizational rules and routines relevant to recurrent tasks and problems (Levitt and March, 1988). A shift from LoC to LoA is also a characteristic ingredient in institutionalization. In fact, contemporary institutional theory highlights the important role cognition plays for institutionalization and regards cognition as one of its pillars.

The reverse shift, from LoA to LoC, is associated with an increase of information processing and tends to occur when new situations arise that cannot be easily be matched to existing rules (e.g., when rules have uncertain relevance to a given situation, contradict each other, or produce unexpected outcomes) and thereby induce a moment of reflection on alternative future courses of action and their consequences. The increase in information processing can be massive (e.g., when it involves re-establishing a new political equilibrium in multi-actor settings), and can lead to undesirable outcomes (due to the withdrawal of information-processing resources from other places, e.g., when texting while driving). The onset of consequential reflection often occurs in response to performance shortfalls. When performance gaps are seen as problems, they can induce ‘problemistic search’ (Cyert and March, 1992) and thereby intensify risky organizational changes (Greve, 2003a, 2003b), and when paired with adaptive aspiration levels, can produce patterns of convergence and reorientation (Lant and Mezias, 1992). Shifts from LoA to LoC have important implications for organizations and their performance. Studies of such shifts have explored several problem-related processes, notably these: (i) On the organizational level, a shift from LoA to LoC often leads into *garbage can decision-making* situations in which problems are looking for solutions, solutions for problems and both for actors with interest and sufficient access to make decisions happen. (ii) When rules – necessarily imperfect due to bounded rationality of rule makers – run into problems, they can become the focus of rule change efforts and thereby produce *path-dependent patterns of rule births, revisions and suspensions* that have been explored by the Dynamics of Rules branch of the Carnegie School (e.g., March, Schulz and Zhou, 2000; Schulz, 2003b). (iii) Subunit level exposure to new situations and problems (e.g., in the local market of the subsidiary of a multinational corporation) can produce new (or revised)

*organizational knowledge* (technologies, capabilities, rules) and stimulate knowledge flows to central subunits (Schulz, 2001b, 2003a) and (myopic) consequential analysis (Gavetti, 2005), aiding the discovery of new knowledge combinations and applications.

Alternating between the two logics is itself associated with powerful outcomes. The capability to switch between logics – in response to rapidly changing environments – is central to the dynamic capabilities of firms. They facilitate formation, adjustment and renewal of firm-specific routines and capabilities and thereby can lead to strategic advantage and success (Nelson and Winter, 1982; Teece, Pisano and Shuen, 1997; Zollo and Winter, 2002). Related, knowledge-based approaches of the firm stress organizational structures and processes that are capable of establishing and reshaping organizational resources (Teece, 2000). Likewise, popular approaches to knowledge creation suggest that translating knowledge between explicit (LoC-related) and tacit (LoA-related) forms contributes to organizational knowledge production and recombination (e.g., Nonaka, 1994).

## **Conclusion and outlook**

The LoA and LoC distinction marks two fundamental modes of action, one guided by imprints of prior action and the other driven by considerations of future alternatives. As a conceptual starting point for several divergent theoretical developments in the social sciences, the LoA–LoC distinction inhabits constructive tensions, invites intriguing comparisons and provokes inspiring controversies. Some debates have extended the logics into new terrain with unclear connections to the original, cognition-based conceptualization. At this point, the returns from such explorations are not always clear, but some of their struggles appear to be manageable (some even avoidable) by paying closer attention to the different forms and levels of information processing involved in each logic as well as the mechanisms that induce and prevent shifts between logics.

The central thesis of this article is that action can travel along paths that can be seen as following sometimes one logic and another logic at other times. Although shifts between logics have deep implications, the mechanisms that induce and prevent them often find too little attention in discourses on the logics and their extensions. To make them more useful as predictive tools, we need to better understand the persistence of the logics and shifts between them. And this means

that we need to better understand variations in persistence of rules and rule following, and of preferences and consequential analysis. It seems the path ahead is challenging but holds considerable promise for deepening our understanding of the evolution of imperfectly rational social order.

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