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## COMMENTARIES

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### Goal ≠ Intent: Goal-Directed Thought and Behavior Are Often Unintentional

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Here I focus on two key features of Lewis's proposed model of intentionality: (a) that an individual's (adult as well as infant) behavior may be driven by goal-systems activated directly by environmental events and (b) the implications of this nonconscious goal activation for the concept of intentionality. The essential point for which I argue is that in the course of his interesting and valuable analysis of the development of intentionality, Lewis has unnecessarily assumed an equivalence between the concepts of *intentional* and *goal directed*, an assumption that is contradicted by a substantial body of research on unintended thought and action.

#### **Automatic Activation of Internal Goal Representations by Environmental Stimuli**

In his target article, Lewis takes exception to Piaget (e.g., 1936/1952) and other theorists who have denied intentionality to infants' behavior. Lewis proposed a model of the development of intention, corresponding roughly to levels of increasing awareness of the intention itself. The human organism is said to advance from a lack of awareness of the intended outcome (as in reflex movements, breathing), to possessing explicit goals and plans but which are environmentally activated, to being able to consciously and internally activate goals and plans. A subtle but provocative feature of the model is that an adult is capable of all five of these levels of intentionality. It is not the case that as the child moves through the levels that he or she is primarily at one level of intentionality (perhaps with some backsliding), until achieving the fifth and final (mature) rung. Instead, the various levels are discussed as capabilities, so that under the model an adult's awareness of the goal currently driving his or her behavior may vary from none at all to complete. Lewis specifies a mechanism for such environmentally activated goals: the repeated association of particular goals and actions with particular environmental events.

That the stimulus environment can come to directly and automatically activate an individual's goals and intentions within situations, as called for in Lewis's Level II, is a proposal with some precedent (see reviews by Bargh, 1990; Gollwitzer, 1990). The early German will psychology (e.g., Ach, 1935) endorsed the principle of the direct activation of motives and goals by those environmental objects frequently associated with them in the past (see Gollwitzer, 1990). In a similar fashion, Lewin (1935) in his field theory argued that behavior was "steered" by the objects in the current environment, through their activation of the individual's behavioral goals associated with them (pp. 49–50). More recent infor-

mation-processing models of behavior have also been explicit in hypothesizing a close connection between environmental features and behavioral goals. Miller, Galanter, and Pribram (1960) related the operation of well-learned plans in response to environmental cues to that of innate animal instincts, contending that "the description of the conditions under which various skilled components will be triggered, or released, is much the same in both cases" (p. 82). And in their detailed models of how goals and intentions become activated to then guide and control behavior, both Wilensky (1983) and Norman and Shallice (1986) called for frequently used internal goal representations to be vigilant for the presence of events in the environment relevant to them, the occurrence of which would activate their control of perception and behavior.

Others have argued for environmentally driven goal activation on functional grounds: that to deal with the complexity of the environment, especially the *social* environment, one needs to quickly understand the goals and motives of the person or people one is dealing with, and to respond (both reactively and proactively) with appropriate goals and plans of one's own (see Schank & Abelson, 1977; Simon, 1967). People seem naturally to encode and understand the behavior of others in terms of their intentions and goals (Read & Miller, 1989; Trzebinski, 1989); for example, Brewer and his colleagues (Brewer & Dupree, 1983; Lichtenstein & Brewer, 1980) found that what people remembered best over time about another person's behavior was not the actual behavior so much as the person's overall intentions. This immediate categorization of the other's intents and goals, especially as they affect oneself, enables the quick adoption of an appropriate response strategy. In real-time social interaction, there is usually little time to contemplate goals and plans, but rather a need for quick thought and action (Rothbart, 1981). Thus, it is highly likely that with sufficient experience in a particular social situation, one's behavioral goals are largely determined both by global features of the setting (e.g., party, meeting with higher status individual) and by local features of the interaction partner's behavior (e.g., reacting to a manipulation attempt), to subsequently determine behavior within that situation (Bargh, 1990; Langer, 1978).

#### **Intentions as Desires for Goals**

Should we, however, label such behavior "intentional"? Lewis notes that Piaget (e.g., 1936/1952) believed that an action could be goal directed but not intentional; the infant's behavior was said to be unintentional albeit goal directed

because the internal goals of the infant could only be activated by the immediate stimulus environment. Only when the child had developed the ability to create goals and plans in the absence of external events directly relevant to those goals and plans, so that the goal guiding behavior was *internally* activated, would Piaget label the resultant behavior “intentional.”

Lewis, on the other hand, contends that, because “all intentions have desires” for specific outcomes, any behavior directed toward achieving a particular goal that also evidences a desire for that goal therefore must be intentional. In his experiments he demonstrates a covariation between the infants’ emotional responses of joy or anger, and their attaining or failing to attain the goal of presentation of the smiling face and Sesame Street theme song. Because the infants showed emotional evidence of a *desire* for the novel event, Lewis argued that their goal-directed arm-pulling behavior was intentional:

They could stop their arm pulling if they so desired, and so we can argue that its continuation reflected a desire to do so. Alternatively, Piaget (1936/1952) would argue that they neither desired to nor were interested in engaging in this task. . . . It was not the child who desired but the outcome that controlled. This is how Piaget avoided imparting to the 8-week-old the mental property of intentionality.

Thus the key point of contention seems to be whether or not the goal of arm pulling was set internally by the infants’ desires or purely externally by the outcome of the arm pulling (the visual and auditory events). In other words, what makes the infants’ goal-directed behavior intentional for Lewis is their evidential desire to achieve that goal: Intention = Goal-directed behavior + Desire for goal ( $I = G + D$ ). So far, so good.

### Does a Leaf Have Desires?

At other points in the article, however, Lewis equates the concepts of *intentional* and *goal directed* ( $I = G$ ), arguing that “all goal-directed systems are intentional,” “that intention is built into goals and that action is associated with desire,” and that “goals contain desires.” If so, then *by definition* infants have intentions, because no one disputes that the infant’s behavior is goal directed. In fact, as Lewis points out, this definition of intentionality would also mean that a leaf intentionally moves toward sunlight, and T-cells intentionally go after foreign proteins. But herein lies the inconsistency in Lewis’s argument: Where is the leaf’s *desire* for sunlight? If emotion and desire are strong correlates of intentions, and if it was necessary to document the infant’s desire for the smiling face–Sesame Street song display to demonstrate intentionality in the infant, why is intentionality later ascribed to goal systems for which desires and motives are difficult to accept? Does Lewis also want to argue that plants have emotions and desires?

What about *inanimate* goal-directed systems? Following Lewis’s logic, we might want to argue that rivers intentionally rush to the sea. Or, with the early cyberneticists in Vallacher and Wegner’s (1989) fictitious “Great Moments in Psychology,” identify the thermostat as an intelligent life form!

### No Need to Assume That All Goals Are Intentionally Held

In addition to opening these existential worm-cans, Lewis’s assumption that all goal-directed behavior is intentional is also clearly unnecessary to achieve his own goals for the article, which are “to reduce the mixed model Piaget offers to a single one in which intentions appear from the beginning” and to address “the problem of the development of intention.” As for the first purpose, to argue that infants show intentionality from the experimental results reported in the article, all that is needed is to assume that intentional behavior is that which is directed toward achieving a desired goal-state ( $I = G + D$ ). In fact, the design of the experiment seemed to follow directly from this assumption.

As for the second purpose of the article, assuming the equivalence of intentions and goals is not necessary for Lewis’s distinctions between the five levels of intentionality. What these levels correspond to are levels of *awareness* of one’s intentions. That people can vary in how aware they are of the intentions guiding their behavior is a valuable point, and because Lewis assumes that all intentions (and goals) are desired by the individual having them, nothing in his discussion of the different levels contradicts the  $I = G + D$  model or requires the  $I = G$  model. Therefore, Lewis’s major contributions in his article do not require the  $I = G$  assumption.

### Unintended Goal-Directed Thought and Behavior Are Commonplace

Most important, in my opinion, there are many cases in which goal-directed behavior is *not* intentional or desired. Often people who have experienced a traumatic life event cannot stop thinking about it; they think obsessively about the event to the point of distraction and an inability to function in their daily life (Horowitz, 1975; Martin & Tesser, 1989; Millar, Tesser, & Millar, 1988; Pennebaker, 1989; Tait & Silver, 1989; Wenzlaff, Wegner, & Roper, 1988). As Martin and Tesser (1989) pointed out, the uncontrollable ruminations in these cases are certainly goal directed, as they constitute a titanic striving toward resolution of a frustrated goal; for example, to tell one’s deceased father one loves him, or to somehow understand (and thus control in the future) a traumatic, essentially uncontrollable life event such as being raped. Motives and goals such as these, which are persistently pursued but not satisfied, tend to gain in strength and operate outside of awareness, capturing awareness and becoming the current goal when no stronger current goal exists (Atkinson & Birch, 1970; Kuhl, 1986). But at the same time, the goal-directed ruminations are *not desired* by obsessed individuals; they desire instead to regain control over their own thoughts (Pennebaker, 1989; Tait & Silver, 1989).

Such cases clearly violate Lewis’s assumption that everything goal directed is intentional. If intentions are desires to attain specific goal-states, as Lewis argues, then goal-directed cognition that is highly undesired cannot be intentional. It might be argued, however, that obsessional thought is an abnormal case, and in normal mental functioning goal-directed thought and behavior are always intended. But unintended yet goal-directed behavior is common in normal life as well, as Norman (1981) documented in his collection of “action slips.” These are unintended acts that occur when the

presence of environmental cues relevant for a habitual action “capture” one’s behavior even though the habitual action is inappropriate this particular time (e.g., driving to the hardware store on Saturday morning and finding yourself on the way to work instead; William James, 1890, gave the example of a husband being sent upstairs by his wife to dress for an unexpected dinner party and being found by her an hour later in his nightshirt asleep in bed). These are cases of Lewis’s Level II intentionality, in which the habitual goal is activated by the relevant environmental cue, but for which the result is an unintended behavior.

A final class of cases in which behavior may be goal directed yet not desired is when we are manipulated by others to do something in their interests but perhaps not in ours. The history of social psychology is full of demonstrations of people’s lack of awareness of the true influences on their behavior (see Bargh, 1989). Cognitive dissonance experiments relied on the fact that subjects would not be aware of the power of the social influence exerted by the experimenter to induce them to lie to another subject about the interestingness of the experimental task (e.g., Festinger & Carlsmith, 1959). In bystander intervention studies, subjects are not aware of the influence that the number of other people present has on their own willingness to help a person in need (Latané & Darley, 1970). Persuasion researchers have catalogued techniques for attitude change, such as the “foot-in-the-door” technique (Freedman & Fraser, 1966), that work to induce a person to behave in ways diametrically opposed to their originally stated intentions (e.g., not to buy that particular car). In all these cases, individuals are being manipulated to behave in ways inconsistent with their desires and intentions. It is a not-uncommon experience to feel regret and self-reproach after an episode in which one has agreed to do something one really did not want to do.

### Preserve an Important and Useful Distinction

In summary, to be intentional and to be goal directed are two separate things, and it is better to leave them as two separate concepts than to obfuscate the true state of affairs by assuming they are isomorphic. Dennett (1984) argued similarly that much of people’s problem with the concept of determinism comes from a failure to keep the concepts of *control* and *causation* separate (i.e., by erroneously assuming that causation means control). He argued that at the core of the problem we humans have in accepting that one’s behavior may often be caused directly by environmental stimuli, and not by one’s own (intentional) goal setting (again, Lewis’s Level II intentionality) is the belief that one is being *controlled* by the environment. As Dennett (1984, p. 52; see also Uleman, 1989) pointed out, however, the idea of “control” refers to the ability of person A to drive person B into a state that A *wants* B to be in; that is, control is *desired causation*, not causation alone. If the environment is merely activating our own habitual goals, then the source of the desire for the goal remains internal, and we are not being controlled (Bargh, 1990). Just as it is useful and instructive to distinguish between control and causation in this way, so too it is useful (and a better fit to empirical findings) if the similar distinction between “intentional” and “goal directed” is preserved.

### Note

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## Intention, Intentionality, and the Constructive Character of Scientific Knowledge

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If knowing is a process of active construction, then it is so both for children and for scientists. However, developmental psychologists typically ignore their own active role in constructing knowledge of children's development, even if they adopt a constructivist stance with respect to children's knowledge of the world. The constructive role of scientists is most apparent in their active determination of the meanings attached to theoretical concepts. Their failure to acknowledge the constructed character of meanings can result in a species of "conceptual confusion," in which meanings are assumed to be fixed and variations in usage go unnoticed. Many fruitless controversies in developmental psychology, debated in terms of fact or method, revolve in large part around such neglected differences in meaning. The age at which some competence or ability develops is a prominent example (Chandler & Chapman, in press).

I believe Michael Lewis's article on the development of intentionality, thoughtful and articulate though it may be, is nevertheless characterized in part by such conceptual confusion. In brief, his basic argument can be reconstructed as follows:

1. In constructivist theories, as opposed to mechanistic theories, an active role is attributed to the organism with respect to the environment.
2. Action has an irreducibly mental component which is *intentional* in the sense that it is *directed toward* something (Searle, 1984).
3. Piaget's theory that infants develop intentional behavior only in the fourth stage of sensorimotor development is problematic because it raises the question of where intentions come from and why one must assume their existence after Stage 4 if one did not do so before that time.
4. The problems of such a "mixed model" (i.e., one in which intention comes into existence during a certain period in development) can be avoided if one adopts instead the proposition that all goal-directed systems are intentional. In this view, intentions are assumed to exist from the beginning of life and develop through an ascending series of levels or types.
5. The fact that the instrumental behavior of 2- to 8-

month-olds increases during the extinction phase of an operant conditioning experiment, along with corresponding changes in their expressions of joy and anger, can be explained only by attributing intention to them in the form of the *desire* to obtain the reward by means of the instrumental response.

To evaluate this argument, one must be clear about the meaning of the central concept of intentionality. According to Searle (1983), the philosophical concept of *Intentionality* must be distinguished from the more familiar concept of *intentions*. (Following Searle, I capitalize the former but not the latter.) Intentionality is the directed property of certain mental states, as described previously; intentions are the causal antecedents of actions and, as such, are only one type of Intentional mental state. The fact that these two terms have the same etymological root is coincidental; Searle (1983, p. 3) called it a "pun." However, Lewis confuses these two concepts, and the main thrust of his argument is invalidated as a result.

Consider the evidence that even 2-month-olds desire rewards and that they exhibit joy or anger depending on whether those desires are satisfied or not. At most, this is evidence that they possess certain Intentional states (desire, joy, anger, frustration), not that they have intentions. That desires do not entail intentions is easy to see: In moments of weakness, I may have entertained the *desire* to own a new Miata and a seaside condominium, but, lacking the requisite means, I have not yet *intended* to acquire those items. Less easy to see, perhaps, is the possibility that a desire can cause an action without intention (even an action that results in the fulfillment of the desire in question). For example, X is driving down the freeway when he feels a sudden desire to swerve into the next lane and cause an accident; the experience unnerves him so much that he attempts precipitously to exit the freeway, thereby causing an accident.

Searle's (1983, pp. 92–94) solution of such seemingly paradoxical examples is to assume that intentions (both prior intentions and intentions-in-action) have a *causal content*: The content of the intention-in-action to raise my arm is the experience of my arm moving up *as the result* of having that