

CITATION: Bloom, L. (2000). Intentionality and theories of intentionality in development. Essay Review of P. Zelazo, J. Astington, and D. Olson, (1999) *Developing Theories of Intention*, NJ: Erlbaum. Human Development, 43, 178-185.
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Intentionality and Theories of Intentionality in Development

Essay Review of *Developing Theories of Intention* edited by
P.D. Zelazo, J.W. Astington, and D.R. Olson¹

Lois Bloom²

Teachers College, Columbia University, New York, N.V., USA

I am delighted to see intentionality receive the attention it deserves from the distinguished group of developmentalists who have contributed to the volume *Developing Theories of Intention*. The model of language acquisition I have proposed takes infant intentionality as its starting point and locates language in the broader context of development [e.g., Bloom, 1993, 1998; Bloom & Beckwith, 1986; Bloom & Tinker, 2000]. With this model, I have explored the expression of intentionality from several perspectives. First, using a wide lens, I have studied coextensive developments in language, affect, cognition, and social interaction that extend over time, through several developmental transitions in language from 9 months of age to the third year. Second, using a very narrow lens, I have studied the microgenetic unfolding and integration of expressive actions in language, affect, play, and conversation as these behaviors occur from moment to moment in real time. A recurring theme in the results of all these studies is the *authority of the child* in the developmental process. What a child has in mind - the child's intentional state at any particular moment of time - determines the child's actions and interactions in the world and, hence, the child's development.

Because each chapter in Zelazo, Astington, and Olson's book takes a different approach to answering the questions: What is intentionality? and How does intentionality influence development?, all of the chapters, taken together, present a very broad and, indeed, a very rich account. The principal attraction of the book is in this very richness, with its diversity in focus and interpretation. The book is the result of a conference at the University of Toronto in 1997. The antecedent to that conference and, consequently, to this book, was the earlier conference on *Developing Theories of Mind*, in 1986,

¹Mahwah, NJ, Erlbaum, 1999, 358 pp.

²Lois Bloom is the Edward Lee Thorndike Professor Emeritus of Psychology and Education, Teachers College, Columbia University, New York, NY. Please direct correspondence to lmb32@columbia.edu.

that created the surge of interest in theory-of-mind research in the ensuing decade. In a very real sense this book represents a 'coming of age', as theory of mind has embraced the concept of intentionality and its implications for developmental theory and research. Many of the contributors to this volume also participated in the earlier conference on understanding the mind. Other contributors, who were not at the original conference, bring perspectives from research disciplines concerned with different developmental issues, such as language, social, and emotional development. Indeed, developmentalists have discovered that intentionality is at the very heart of such seemingly diverse things as imitation, goal-directed behavior, emotionality, executive function, and, indeed, language acquisition.

The richness of the volume also contributes to a certain diffuseness and a sense of separateness among the different chapters that is, perhaps, inevitable in any edited volume. However, the diffuseness and lack of cohesion in the book also come from a certain ambiguity in some of the chapters about just what intentionality is. Three intentionality concepts surface throughout the book: (1) intentionality in the larger sense of the directedness and 'aboutness' of contents of mind - what the immediate, moment-to-moment representations in consciousness are 'about', or what an experience is an experience 'of'; (2) intentionality in the narrower sense of the goal-directedness of individual actions; and (3) the intuitive, psychological theories we have about intentionality and intentional action that influence our everyday actions and interactions - what has come to be called *theory of mind*. Several chapters recognized and laid out the distinctions among the three concepts of intentionality and their history in the philosophy of thought and language, notably the introduction to the volume by its editors, Olson, Astington, and Zelazo, and the chapters by Astington, and by Meltzoff, Gopnik, and Repacholi. Others acknowledge intentionality in its larger sense, but then proceed to focus on the narrow sense of intentional action, or to confuse the three senses in which the term might be used.

The distinction between the larger sense of intentionality and the goal-directedness of intentional action has been characterized in different ways, but John Searle's formulation is perhaps the most direct. Intentionality in the larger sense, with a capital T, comprises Intentional states - representations of elements, roles, and relations set up in conscious states of mind, under the psychological attitudes of belief, desire, and feeling that we have toward them. Intentional states may include but are not limited to goal-directed action, which is intention with a small 't' - an intention to do something, to act, to communicate - what Searle called only the 'ordinary' sense of the term intention, 'just one form of Intentionality along with belief, hope, fear, desire, and lots of others' [1983, p. 3]. This goal-directedness or intention in the ordinary sense is just one part of what an infant, for example, has in mind when reaching for a toy. The reach is intended by the infant and directed toward a goal. But the infant's intentional state also includes, along with a representation of the toy and the desire to have it, representations of feelings about having or not having it, beliefs about what the object is and what might be done with it, awareness of whether another person might help to achieve it, perhaps a plan for doing something with it once it is achieved, and so on.

The third sense of intentionality, theory of mind, is the one best represented in the book. It is, however, by and large a theory of *the other mind*: how children learn to attribute or 'ascribe' intentional states to other persons; how a child comes to understand the intentionality of other persons and the sources of others' intentional actions; or how other persons can influence the child's thoughts and, hence, the child's actions.

Several of the authors, in fact, causally attribute certain developmental milestones, such as the first words, to the child's ability to read another person's intentions. This emphasis on other minds is consistent with the theme articulated in the book's subtitle 'Social Understanding and Self-Control'. To be sure, in a very profound sense, our everyday interactions in the world depend on what we can attribute to what other people might have in mind. Much of what we do when we talk and when we act is influenced by what we think other people know and are thinking about, and how we, in turn, might influence what others know and might think.

However, with the notable exception of the chapters by Meltzoff, Gopnik, and Repacholi; Olson and Kamawar; and Astington, little attention is given to the first person perspective of the child's own intentionality - the developments that are required for increasing complexity and abstractness of the child's intentional state representations and, in turn, the effects of such changes in the child's contents of mind on development. The child's questions, as opposed to the researcher's questions, are What do I have in mind?, and How does what I have in mind influence what I do and how I feel and what others might do or not do, feel or not feel? The powerful influence from the child's own intentionality on the actions of other persons and, indeed, on the child's development even more generally receive less attention than what the child might or might not be able to attribute to the intentions of others. My comments here have two themes: one is the overriding importance of the larger sense of intentionality and the other is the relationship between intentionality and *development*.

Intentionality Writ Large

Intentionality is that aspect of mind that intervenes between what we perceive in the outer world at any one moment in time and the inner knowledge of the world we have in memory all of the time. A theory of intentionality is a theory of consciousness. Intentional states are *representations*, and they are dynamically constructed from moment to moment in that part of the mind ordinarily referred to as *consciousness*, as prior knowledge informs perceptions, actions, and interactions. These representations include elements, with their roles and the relationships between them, in events that refer to one's understanding of like items in the real world. Intentional states are the result of cognitive activity and affective engagement in a world of persons, objects, and events, and neither language, theory of mind, nor any other product of development can happen without them [Bloom, 1993, 1998; Bloom & Tinker, 2000].

Because the mental phenomena of intentional states are hidden, other persons cannot know them until they are made manifest, in an embodiment [Danto, 1973, 1983; Taylor, 1979, 1985]. Language is provided by society for making the internal, personal, private intentional states of individuals external and public, in an expression, so that they can be shared with other persons. But it is not only language that can do this. Emotional displays, gestures, and other actions can also be expressions - in the sense of an embodiment - of contents of mind. The attribution from one individual to another of what each has in mind is, arguably, at the heart of a theory of mind, and attribution depends on expression and interpretation. In particular, expression and interpretation are required for sharing contents of mind, when what one individual has in mind is *different* from what another has in mind. I have suggested this *principle of discrepancy* to explain why a language is acquired [Bloom, 1993]. A language has to be acquired when

contents of mind differ from things already evident in the here-and-now, and other persons cannot exploit cues from the context for shared understanding. The principle is obviously social, because a language is acquired to resolve discrepancy between minds. But the principle of discrepancy is also fundamentally cognitive, because it is about representations and changes in representations that the child constructs for both interpretation and expression. The principle of discrepancy would appear to apply as well to acquiring a theory of mind.

Intentionality and Development

The influences on all of a child's development originate with representations in intentional states, and these are constantly changing: changing in immediate time, as a function of the child's actions and interpretation of the actions of others, and changing over extended time as a function of development. Intentionality, itself, does not develop over time. Rather, developmental changes occur in possible contents of mind as a function of developments in, at least, cognition, language, emotionality, and social connectedness. Thus, the child's theory of mind cannot be separated from its larger developmental context: the affective, social, cognitive, and linguistic processes that influence each other, from the start, to determine how the child comes to think about the world and about the mind.

The *social* contacts between the child and other persons are critical for all development: A child's connectedness and intersubjectivity with other persons sustain the child's commitment to the world for development and learning. Much attention throughout the book is given to how other persons influence what the child has in mind. But the child's actions have no less of an effect on the adult mind. In fact, more often than not, how an adult interprets a child's behaviors determines just how an adult acts to influence the child's behaviors. Evidence is accumulating to show that it is *responsiveness* to a child by a caregiver that determines the interaction between them, rather than the adult's direction or prior 'scaffolding' of the interaction [Bloom, 1993, 1998; Bloom, Margulis, Tinker, & Fujita, 1996; Bloom & Tinker, 2000; Howe, 1981; Roth, 1987]. The routines, games, and formatting (the prototypical kinds of scaffolding events) that mothers set up in exchanges with their infants are prompted most often by something the child looks at, touches, or says [Maher, Lucariello, & Bloom, 1999]. And the extent to which caregiver speech is responsive is a much stronger predictor of word learning than is the mere quantity or amount of speech a child hears [Bornstein, Tamis-LeMonda, & Haynes, 1999].

Social connectedness does not occur without the *affective* component of development: a child's attention, engagement, and emotionality that determine the relevance of events and the directedness of a child's interactions in the world - what I have called the *principle of relevance*: Development is enhanced when events in the context are relevant, when they are pertinent to what a child has in mind [Bloom, 1993, 1998]. The part played by affect in children's development is rarely given the attention it deserves. The chapter by Olson and Kamawar, describing the critical part played by feelings in the emergence of a theory of mind, is a notable exception. They point out that 'ascribing' or attributing contents of mind begins with interpreting feelings. In fact, all of social development has its origins in the intersubjectivity between infant and child that depends on sharing feeling states [see, for example, Stern, 1977, 1985]. The chapter by Dunn em-

phasizes the part played by the negative and positive emotions, in particular, in the social developments for theory-of-mind acquisition.

And by no means least, the symbolic capacity and the acquisition of concepts and conceptual structure that are required for intentional state representations are the result of *cognitive* development in the first three years. With these developments in cognition, intentional state representations become increasingly elaborated, with more elements, roles, and relations in events that are farther and farther removed from the scripted events in activities of daily living. The *principle of elaboration* that I have proposed for language acquisition builds on these developments in cognition. Children have to learn increasingly more of the language – its words and syntax – in order to not only express but also to articulate the increasingly elaborated contents of mind made possible by developments in the symbolic capacity and conceptual structure [Bloom, 1993, 1998]. This principle of elaboration also provides the impetus for more intricate and complex social exchanges and development of the more complex emotions, as described by Lewis in his chapter.

All of these developments in social commitment, affective engagement, and cognition determine the directedness and increasing complexity of intentional states and the acquisition of language for their expression and interpretation. And cognitive, social, affective, and linguistic developments also necessarily cohere for acquiring a theory of mind.

Intentionality, Language, and Theory of Mind

Certain critical ages for intentionality, intentional action, and theory of mind are highlighted in the different chapters. The initial anchor point is the first weeks of life, when infants imitate movements by other persons that they themselves can make and gain their first inkling that other persons can be ‘like me’ [Meltzoff, Gopnik, & Repacholi]. Another anchor is 4 years, the age traditionally targeted for the *achievement* of a theory of mind. Meltzoff, Gopnik, & Repacholi explore intentionality in what they called ‘the dark ages’ in-between the first weeks and 4 years, for evidence of the *emergence* of a theory of mind. It is precisely this period that sees the developments in cognition and social directedness needed for intentional state representations and the acquisition of language for their expression.

As Astington points out in her chapter, *language matters* for acquiring a theory of mind, and her emphasis, in particular, is on the actual vocabulary for naming mental states – words such as ‘intend’, ‘think’, and ‘promise’. Povinelli elegantly points out in his chapter in the volume that a 1-year-old chimpanzee [or child] simply following another’s gaze is not necessarily inferring that the other is ‘looking at’. An analogous caution applies to a child’s words: A child saying ‘think’ or ‘promise’ is not necessarily using the words to mean what an adult might mean by the same words. Children often acquire linguistic forms before fully understanding their content and range of use [Bloom, 1970, 1991; Nelson, 1996; Peters, 1977, 1983]. Initially, hearing a word simply triggers the 1-year-old’s recall of prior experience associated with the word in its earlier circumstances of use. But certainly by the age of two, children are interpreting the *meanings* of words they hear, according to what they have in mind, in order to revise or construct new intentional states. Once the 2-year-old, hearing the words ‘there’s a fire truck’ that accompany a shift in gaze, then looks for a fire truck, we can have some

confidence that the child interprets the other's words to mean that the speaker *is looking at* and also *sees* a fire truck.

Several developments in language between two and three years prefigure acquisition of the words that name mental phenomena. Very early in the third year, children learn the forms that express wish or intention – 'wanna' and 'gonna' and less often, 'gotta' and 'hafta' [Bloom, Lightbown, & Hood, 1975, reprinted in Bloom, 1991; Brown, 1973]. These earliest modal forms literally launch the acquisition of a class of verbs and other forms with the meaning *directedness towards*, that take the connective 'to': intentional ('want to', 'go to'), inchoative ('try to', 'time to', 'ready to'), invitative ('like to', 'supposed to'), and instructive ('show how to', 'know how to') [Bloom, Tackeff, & Lahey, 1984; reprinted in Bloom, 1991]. The development of question asking between two and three years is another example of early language that bears on theory of mind. Two-year-olds start out by asking Wh-questions on a topic of their own, inquiring into what others might have to tell them about what it is the child has in mind. Questions that are responsive to what someone else has in mind, that is, questions on a topic that originates with something another person says, begin to develop somewhat later in the year [Bloom, Merkin, & Wootten, 1982; reprinted in Bloom, 1991].

The most frequent intentional state words in the robust period of language learning between two and three years (the 'dark ages' for theory of mind) are the epistemic verbs 'think' and 'know' and the perception verbs 'look (at)' and 'see'. An analysis of children's early sentences with these verbs in different discourse environments yielded a lexical typology with three semantic distinctions [Bloom, Rispoli, Gartner, & Hafitz, 1989; reprinted in Bloom, 1991]. The first is the primary distinction between epistemic and perception verbs. The second was the semantic distinction between the verbs within each of these pairs to express different degrees of certainty/uncertainty about the complement propositions expressed in the sentences, with 'know' and 'think' expressing certainty and uncertainty, respectively, and 'look (at)' and 'see' expressing certainty and uncertainty, respectively. For example, 'think' (e.g., 'I think we can put it side of him') was most often used with first person 'I' and was contingent on something someone else had said, indicating it was about 'new' information. 'Think' was used frequently with qualifying modals (e.g., 'should' and 'can') indicating a lack of definiteness; it did not occur with the definite 'that'; and, as described by Limber [1973], was used almost parenthetically, with the sense of 'maybe' or 'perhaps'. A different patterning with 'know' suggested certainty in that 'know' more often introduced a new topic into the discourse that originated with the child, and occurred most often with a form of the verb 'to be' in talk about attributions and generic events (e.g., 'You know what's in this bag?').

Finally, a particular intentionality link between language and theory of mind may well come through the concept of *causality*. Causal understanding is one of the critical aspects of thinking expressed by children's emerging complex sentences in the period between two and three years, and the earliest causal meanings have to do with the personal, affective, or sociocultural beliefs that are the reasons for or results of a 'disruption in the order of things' [e.g., Bloom & Capatides, 1987; Hood & Bloom, 1979; McCabe & Peterson, 1985]. Two-year-old causal attributions are best captured by intentionality theories of causation [e.g., Searle, 1982, 1983] inasmuch as children's early causal language is most often about a human intervention that brings about change, or one person, by word or deed, providing another with a reason for acting, as described,

for example, by Ducasse [1924/1969] and Hart and Honoré [1959] [Bloom & Capatides, 1987; reprinted in Bloom, 1991]. Developments in causal language progress from children's making statements that express the reasons and consequences of their own intentions and intentional actions, to asking about the intentions of someone else with a 'Why' question [Hood & Bloom, 1979; reprinted in Bloom, 1991]. Learning to give and request explanations and reasons would appear to be critical for understanding the intentionality of self and other.

In sum, a concept of what it means to have a mind is acquired slowly, along with language. Several contributors to this book note the congruence between children's performance in theory-of-mind experiments and the ability to talk about intentional state attributions (as has been documented by Bartsch and Wellman [1995] in particular). Such congruence between solving theory-of-mind tasks and talking about corresponding events should not be surprising, given the fundamental assumption that language embodies – makes manifest – the contents of mind. Most simply, children talk about those things that they know and are learning about. Just as language is acquired together with other aspects of the child's cognition, affect, and social interaction [Bloom, 1998], so too must a theory of mind be acquired with reference to these other aspects of a child's development and to language. The contents of the young child's intentionality – the moment-to-moment representations constructed in consciousness – both determine and are determined by the child's development. Understanding how this happens is a challenge, but the contributions to this book have certainly begun to show the way in the effort to meet that challenge.

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