concern is with how children learn to participate in a communicative situation involving a new type of activity. While children may be able to understand the commands, suggestions, hints, etc. of an adult in a communicative context involving a familiar task, they may not interpret the 'same' directives in the way intended by the speaker when these utterances are embedded in the flow of activity found in a novel task. Thus, the question is not when children show the first signs of understanding directives in general (namely those used in connection with a well-established routine). Rather, it is a question of how children develop the ability to participate more fully in interaction concerned with a new task.

In our examination of the transition from other-regulation to self-regulation, we will identify and characterize four successive levels. These levels are not to be thought of as comprising an exhaustive list of precisely defined stages. They are merely four out of many possible points in the transition from other-regulation to self-regulation, and our only reason for introducing them is to illustrate that this transition does not take place at a single, identifiable moment. In particular, these levels should not be taken as characterizing the overall status of cognitive or communicative capacities of an individual child. A child might carry out one task independently (i.e., at the fourth level) while having great difficulty in carrying out another task even with a great deal of strategic assistance from an adult. We would claim, however, that a young child can come to function at a higher level in connection with a particular task only by having passed through the lower one(s). Obviously, this claim does not always apply to older children and adults who can understand explanations (i.e., can think about a task as opposed to think 'in' it by participating in an other-regulation language-game).

Levels of Interaction in the Transition from Other-Regulation to Self-Regulation

The first level in the transition is characterized by the fact that the child's understanding of the task situation is so limited that communication is very difficult. At this level it is often questionable as to whether we should even speak of other-regulation. The adult may try to provide strategic assistance, but the child's understanding of the stream of activity is so limited that she/he may not interpret utterances in an appropriate way. One could say that the mismatch between the adult's and the child's definition of the task situation is so great that they are participating in different language-games. It is perhaps more accurate to say that the adult is participating in what she/he perceives to be one
coherent language-game while the child interprets the adult’s speech as a series of utterances which do not fit together into a single, integrated activity.

We will illustrate the social interaction at this level with two segments of the discourse between a 2 1/2-year-old boy and his mother while they were working on the truck puzzle. The first segment occurred while the child was inserting the pieces of the truck body (the ‘noncargo’ pieces) into the puzzle frame. Among the noncargo items is a window piece. This segment of the discourse begins immediately after the child has finished inserting and adjusting a piece depicting a wheel.

1. C: (picks up window piece) What goes with it?
2. M: I think (points to other window piece in pieces pile) ...
3. M: What do you think ...
4. M: I think that’s a window.
5. M: It doesn’t look like a window, no. (child looks away from puzzle task materials and looks at windows in the classroom)
6. M: But it’s a window to this truck. (mother points to location in copy where window piece is to be inserted)
7. C: (drops window piece in his hand back into the pieces pile)

In this case we see that the mother was unsuccessful in regulating the child’s task performance. The child failed to interpret the speech in terms of the adult’s definition of situation to such a degree that the mother’s mention of a window in utterances (4) and (5) led him to shift his attention to a window that had nothing whatever to do with the puzzle. Apparently, he had not realized that the model puzzle before him depicted a truck and that the truck had windows. Hence, the only way he could interpret his mother’s utterances was concerned with windows in the room.

The second segment of discourse we will examine in connection with the first level comes from the same mother-child dyad. This time, the child had finished most of the noncargo portion of the truck puzzle, and his mother was attempting to get him to insert some of the cargo pieces.

8. M: What do you suppose goes up here? (points to cargo area of copy)
9. M: Could we put some of these (points to remaining items in pieces pile) up here? (points to cargo area of copy)

Further evidence for this comes from the fact that he constantly referred to wheels as ‘circles’ or ‘cookies’. Indeed, he seemed to prefer the activity of eating these ‘cookies’ to that of using them appropriately in the overall perceptual and strategic framework of the task.
(10) C: Okay, (picks up cargo piece and places it incorrectly in cargo area)  
(11) M: That's right.  
(12) C: One (picks up second cargo piece after utterance)  
(13) M: Two.  
(14) C: Two, three, four (places second piece in cargo area of copy) ... three (picks up one of the two cargo pieces from the copy) ... hey (laughs) Woo. (drops cargo piece in his lap)  

Here we have an instance where the mother was trying to use a common form of other-regulation, namely counting aloud for the child. This form of assistance occurred fairly often in our study. Apparently, it is a way to focus the child's attention on the number of pieces placed in the copy and to keep track of how many pieces had been inserted so that comparisons could be made with the model. For example, some mothers used a routine like the following: 'Now we have one, two, three here (points to copy). Let's count to see how many we have over here (points to model). One, two, three, four, five, six. So we need some more pieces in our truck (points to copy).'</p> In the case of the 2½-year-old in the example above, however, the child did not perceive the relationship between the speech and the task situation. When his mother counted in connection with his activity, he apparently interpreted her speech as a routine whose sole purpose was counting (perhaps for practice). That is, once again we have a case where the child's understanding of the task situation was so limited that he could not see how the adult's utterance fit into what the adult perceived to be a coherent stream of meaningful activity.  

In both of these cases, the issue is not how the child is taking over strategic responsibility for aspects of the tasks which were formerly carried out through other-regulation. Rather, the issue is how the child begins to learn to participate in a communicative context involving other-regulation. In both instances the mother was trying to provide strategic assistance in a form that we often saw used with other children. What distinguished this 2½-year-old from some of the other children, however, was that he did not interpret the adult's communicative moves in the manner intended. It is important to note that the child did interpret something in the adult's speech. After all, he did look at a window when his mother uttered 'window', and he did continue his mother's counting. However, he did not understand his mother's utterances in terms of the language game in which she was participating.  

At this point one could question whether it is possible for the mother of a 2½-year-old to provide any sort of other-regulation in this task situation. If children at this age are so incapable of participating in appropriate language-
games, can an adult really be expected to provide the strategic assistance necessary to get them through the task? The answer is that adults can provide the necessary assistance, but they must rely on a specific type of communicative strategy. Rather than trying to regulate the child’s activity by relying on the definition of situation that may exist for adult speakers, the adult must use speech and gestures which are tied to the definition of situation that exists for the child. In the first segment of discourse this would have been possible had the mother reframed from referring to the window piece by uttering “window” and used verbal and nonverbal pointing. Instead of relying on the child to understand that the puzzle depicted a truck which had windows, the mother could have used speech which was interpretable on the basis of the child’s definition of situation. The use of deictes such as this and that in English what Silverstein (1976) calls ‘referential, presupposing indexes’ in connection with the use of nonverbal pointing requires less of the child in the way of a definition of the situation than does the use of a referential expression such as ‘the window’ which relies on an appreciation of the overall task (or at least of the overall perceptual array). That is, the adult’s use of deictes (especially nonverbal pointing) in this communicative situation allows the child to function on the basis of a definition of situation which consists of ‘this thing’ and ‘that thing’ rather than windows, wheels and headlights.

Rommetveit (1976) has made an analogous argument (though not in connection with pointing) about how adult child communication concerned with a single set of physical objects can vary as a function of the way the communicative situation is defined. His research indicates that children’s performances on Piagetian stagnation tasks may fluctuate depending on what definition of situation the adult experimenter assumes in the communicative context. For example, he has found that 7-year-old children who are seemingly unable to carry out directives appropriately when these directives are concerned with a stagnation task can perform much better if the experimenter refers to the same physical objects with different referential expressions which presuppose a different definition of situation.

As mentioned earlier, at the first level of the transition from other- to self-regulation the issue is not really one of how the child takes over the strategic responsibility which had formerly been vested in the adult. Rather, the issue is how the child begins to develop a definition of the task situation that will allow him/her to participate in the communicative context. We will trace the path of this development in our analysis of the second and third levels. Even though the child of the first level is not taking on the regulative capacities necessary for
carrying out the task, this level is an important part of a complete description of
the transition from other- to self-regulation because of the child's understanding
(or lack of understanding) of the communicative context. An understanding of
the communicative context provides the necessary foundation for any transfer
of strategic responsibility from adult to child.

The second level in the transition from other- to self-regulation is more
difficult to define and analyze than the others. On the one hand, the interaction
at the second level is not as restricted by the child's limited understanding of the
task situation as is the case for the first level. At the second level the child at
least seems to realize that the adult's utterances are connected with the task in
some coherent way, so the communication in doing the task has a chance of
getting off the ground. However, unlike interaction at the third level in our
scheme, at the second level the full extent of the connection between speech and
activity is not always evident to the child, and consequently, she/he cannot
make the inferences necessary to interpret an utterance in the other-regulation
language-game.

Part of what we will have to say about the problems of adult-child inter-
action at this and next level will involve Ervin Trup's (1976, 1977) classification
of directives. As a result of analyzing a large corpus of speech from adult
speakers of American English, Ervin Trup has arrived at the following six classes
of directives:

(a) Need or desire statements, e.g., 'I need a match.'
(b) Imperatives, e.g., 'Give me a match.' or 'You give me a match.'
(c) Imbedded imperatives, e.g., 'Could you give me a match?'
(d) Permission directives, e.g., 'May I have a match?'
(e) Question directives, e.g., 'Gotta match?'
(f) Hints, e.g., 'The matches are all gone.'

Her research has shown that there are systematic differences in the use of
the various types of directives attributable to specific social characteristics of
speakers and addressees such as familiarity, rank, territorial location, likelihood
of compliance, etc. One of the criteria that distinguishes these various classes is
the degree to which they are obvious or explicit as directives. As the examples
given above show, need or desire statements, imperatives, imbedded imperatives
and permission directives all involve an explicit mention of an action and/or the
object upon which an action is to be performed. In contrast, the last two classes,
question directives and hints, do not involve an explicit mention of the desired
actions, and in those cases where the desired action is mentioned, the interpreta-
tion of the directive depends on a shared definition of situation. Question
directives and hints require inferences on the part of the listener in order to be interpreted as directives since they are ambiguous as to their function. Because of this, Ervin-Tripp has argued that these two types are more likely to lead to "misfires", such as a question being interpreted as a request for information while it was really intended as a directive, or, inversely, being taken as a directive when none was intended. Ervin-Tripp's account of directives, in conjunction with an analysis of the interlocutors' definition of situation, provide the framework for understanding how other regulation takes place (or fails to take place) at the second level of interaction. Let us turn to an example from the interaction at this second level.

The segment of discourse we will analyze is from a mother with her 2½-year-old daughter. This segment occurred just after the child had completed most of the non-cargo section of the puzzle.

(15) C: Oh, (glances at model, then looks at pieces pile) Oh, now where's this one go? (picks up black cargo square, looks at copy, then at pieces pile)

(16) M: Where does it go on this other one? (child puts black cargo square back down in pieces pile, looks at pieces pile)

(17) M: Look at the other truck and then you can tell. (child looks at model, then glances at pieces pile, then looks at model, then glances at pieces pile)

(18) C: Well... (looks at copy, then at model)

(19) C: I look at it.

(20) C: Um, this other puzzle has a black one over there. (child points to black cargo square in model)

(21) M: Um-hum.

(22) C: A black one... (looks at pieces pile)

(23) M: So where do you want to put the black one on this puzzle? (child picks up black cargo square from pieces pile, looks at copy)

(24) C: Well, where do you put it there? Over there? (inserts black cargo square correctly in copy)


The first point to note about this segment of discourse is that, unlike the interaction at the first level, the child interpreted all the utterances in terms of the problem-solving situation. There are no instances where she interprets something that her mother said in terms of a definition of situation that was completely unrelated to the task situation as the adult perceived it. However, there are several indications that the child still had a somewhat limited definition of situation. The first indication can be found in the child's response to the
mother's utterance (16). The child did not seem to realize that the mother's question directive was in response to her utterance (15) and that she could get an answer to (15) by responding to it. That is, she did not see the connection between the model and the copy in the general framework of the task, and when her mother asked where it (the black cargo square) was located in the model, the child's only response was to drop the black cargo square that was in her hand.

In this case, the mother's utterance did not elicit the intended response in the child (a gaze at the model to see where the black one was located) so she followed it up with (17) which dealt directly with this response. Note also that (17) is an imperative in which both the action ('look') and the object upon which the action is to be performed ('the other truck') are explicitly mentioned. Thus, the mother has assisted the child both by directing her to carry out a step of the procedure to be followed in responding to (16) and by being explicit in how to do this.

A further indication that the child had a limited definition of the situation can be found in utterances (18) through (24). After the mother had translated her question directive into an explicit imperative and thereby induced her daughter to look at the model, the child was still at a loss as to what looking at the model had to do with the task they were carrying out. Utterances (18) through (20) indicate that she realized that she did not understand the full implications of her mother's utterances. It is as if she were saying to her mother, 'I'm looking where you told me to look, but I still don't see what it has to do with our overall goal or definition of situation.'

In utterance (23) the mother is back to using a question directive which requires more of the child in the way of a definition of situation than the imperative found in (17). After having led the child through the steps that illustrate the connection between the model and copy puzzles, the mother is more successful in having the child interpret such an utterance – i.e., (23) – at this point. Utterances (24) and (25) suggest that the child is not completely certain how to interpret utterance (23), but ultimately her performance indicates that she has been led to a more adequate definition of situation than existed when the mother uttered (16).

This segment of interaction illustrates only a few of the problems that can arise at the second level in the transition from other-regulation to self-regulation. In general, this level is characterized by the fact that the child is beginning to participate successfully in the language game, but his/her understanding of the task situation is still far from being in complete agreement with the adult's.