

SELF-AWARENESS AND "INTROSPECTIVE" PRIVATE SPEECH IN 6-YEAR-OLD CHILDREN¹

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Summary.—It has been suggested recently that self-awareness is cognitively mediated by inner speech and that this hypothesis could be tested by using the private speech paradigm. This paper describes a study in which the creation of a state of self-awareness was attempted in children to test the viability of a research strategy based on private speech and used to explore the hypothesis of a link between self-awareness and inner speech, and to test directly this hypothesis by comparing the incidence of private speech in self-aware and control conditions. 32 children were asked to evaluate the attractiveness of pictures when in front of a mirror (a widely used self-focusing stimulus) and with no mirror. Reliably more favorable ratings of the images were predicted presuming intensification of affects in self-awareness. Private speech was recorded, with the prediction of a more important incidence of "introspective" self-verbalizations (for example, "Wow! I really like this picture!") in the self-aware condition. None of these outcomes were obtained. Results are discussed in terms of previous attempts to manipulate self-awareness in children. It is suggested that the private speech paradigm does not appear to be a promising strategy when inner speech and self-awareness are considered.

Anyone interested in the area of "self-awareness" research first ought to be impressed by the diversity and richness of empirical work that has been—and is still being—conducted in this domain. The study of self-awareness was traditionally limited to phenomenological approaches until Duval and Wicklund (1972; see also Wicklund, 1975) defined this concept as the capacity to become the object of one's own attention. The individual whose attention is self-directed is said to be in a *state of self-awareness*, that is, in a state in which he can observe his own characteristics and behaviors. This proposition set the departure point to a new and important research strategy: since attention can be directed either externally toward the environment or internally toward the self, it should be possible to manipulate self-focus (i.e., create a state of self-awareness) by exposing subjects to stimuli that remind them of their object status. Mirrors, people attending to us, cameras, or tape recordings of one's voice have proven to be very effective in that respect (Carver & Scheier, 1978).

Experimental work using stimulators of self-focus (see Carver, 1979; Carver & Scheier, 1981, for review) have led to the identification of the

¹We thank Julie Mottard, teacher at the École primaire Château d'Eau, as well as the director of this school and parents of the children who participated in the present study for their invaluable help. Also thanks to Jean Morin for his drawings for the rating scale. Address requests for reprints to Alain Morin, École de Psychologie, Université Laval, Cité Universitaire, Québec, Canada G1K 7P4.

main effects and consequences of the state of self-awareness (see Buss, 1980). Despite the impressive body of knowledge that has been gained with these experimental studies, little is known about the precise cognitive tools the self uses in processing information about itself. In Duval and Wicklund's terminology (1972), the state of self-awareness consists essentially in "becoming the object of one's own attention;" moreover, expressions such as "to *examine, evaluate, or focus upon oneself*" can be found repeatedly in the self-awareness literature. But what do these expressions really mean? What cognitive operations do they represent? A reasonable, if not obvious, hypothesis is that self-observation, e.g., the acquisition of self-information, is mediated by *inner speech* (Morin & Everett, 1990). In other words, the individual in a state of self-awareness, more often than otherwise, *would be talking to himself about himself*.

If self-talk represents an important mediator of self-awareness, one can predict that its incidence should be increased whenever a state of self-awareness is created. In more experimental terms, subjects in front of a mirror should talk to themselves (about themselves) significantly more than when in a control condition.

Now, inner speech, being a *covert* cognitive behavior, may in some cases be particularly difficult to measure. Self-talk inventories, the "think aloud" technique (Erickson & Simon, 1980), and even movements of the tongue (Sokolov, 1972) can be used to measure inner speech; but these and other techniques invariably offer as many methodological pitfalls as solutions (see Kendall & Hollon, 1981). The most natural and objective manifestation of inner speech is certainly *private speech*, i.e., self-verbalizations emitted out loud by children when alone or in social situations. Private (or *egocentric*) speech, according to Vygotsky (1934/1962), is immature overt speech for oneself on its way to become covert; this happens around the age of 7 (Kohlberg, Yaeger, & Hjertholm, 1968). Private speech has been extensively recorded, mainly with hidden microphones, in most existing researches on self-regulation; see Zivin (1979) for a review. Almost every investigator has used his own units and categories in a system of private speech, but it is common (and imperative) to differentiate social speech from speech for oneself (when an experimenter is present), and task-relevant speech from task-irrelevant speech (when a task is involved); see Meichenbaum and Goodman (1979) for details.

Morin and Everett (1990) propose that techniques developed in the "private speech" paradigm could be used to test the hypothesis of a link between self-awareness and inner speech. In recording private speech, Kohlberg, *et al.* (1968) found description and labeling of ongoing and/or immediately past activity, questions asked and answered by self, verbalization of ongoing cognitive activity, and expression of emotion (feelings about a task,

success, failure, or frustration, and positive or negative evaluation). Such self-verbalizations will be called here *introspective* private speech; it is precisely this kind of private speech that should be emitted more frequently by children whose attention is self-directed (i.e., in a state of self-awareness) than by controls.

One possibility for testing this hypothesis using the private speech paradigm would be to replicate, *with children*, experiments involving the manipulation of self-awareness in adults. Again, one could compare the spontaneous incidence of introspective private speech in two conditions, control and in front of a mirror.

While looking for a typical "mirror" experiment to reproduce with children, we found one (Beaman, Klentz, Diener, & Svanum, 1979) in which children were subjects, but the results of this experiment questioned the viability of the idea of using the private speech paradigm to test the hypothesis put forward here. In effect, in this experiment involving the manipulation of children's state of self-awareness, Beaman, *et al.* (1979) were unable to observe behavioral consequences of self-evaluation (one main reaction to self-awareness) in children aged nine years or below; see Duval and Wicklund (1972). In this experiment, subjects were instructed *not* to take more than one candy on Halloween in two conditions, control and in front of a mirror. It was predicted that subjects in a state of self-awareness would observe their behavior more critically and that this behavior would spontaneously be compared with the instruction, with, as a result of this comparison, a lower incidence of transgression. This postulated effect was in fact observed, but "The mirror effects appeared to begin in our study somewhere around the age of 9. . ." (p. 1842).

One explanation for these results, as suggested by Beaman, *et al.* (1979), is that the notion of standards might not yet be developed for children aged nine years or below; the possibility that young children do not yet experience self-aware states must also be raised, although we know for sure that they can become the object of their own attention, as operationalized by self-recognition (see Gallup & Suarez, 1986) as early as between 18 and 20 months of age. To assess whether such children can engage in self-observation, one must first try to create a state of self-awareness by seeking other effects of self-awareness involving no standards. One purpose of the present work is to identify such effects and to try to induce self-awareness in young children. In doing so, the viability of an approach based on private speech and used as an experimental paradigm to test the existence of a link between inner speech and self-awareness was explored.

One effect of self-awareness studied in many experiments is the intensification of emotions. Being attentive to one's subjective experience puts one in the position to perceive its content more acutely (Carver & Scheier, 1981).

In a state of self-awareness, affects are perceived more vividly and felt more intensely (for examples, see Gibbons, Ingram, Smith, Pearce, & Brehm, 1985; Scheier, 1976; Scheier, Carver, & Gibbons, 1981). A typical experiment that could be conceptually replicated with children is one by Scheier and Carver (1977, Exp. 1). Men were exposed to their reflections while rating the attractiveness of slides of nude women; these subjects reliably made more favorable ratings of the slides in comparison with those of controls, presumably because an intensification of affects occurred in a state of self-awareness. The experiment conducted here used Scheier and Carver's rationale; the original experiment was adapted so that children were participants. More precisely, pretty pictures were rated according to their attractiveness on a scale designed specifically for 6-yr.-old children. If such subjects can experience a state of self-awareness, they should find the pictures significantly prettier when rating them while in front of a mirror. Moreover—and this is the present purpose—the subjects' private speech was recorded while they rated the pictures, to test the hypothesis that the incidence of introspective self-talk with subjects in a state of self-awareness was more important.

To reiterate, the purpose of the present study is twofold. First, a state of self-awareness was tentatively manipulated in children to test the viability of a research strategy based on private speech and used to explore the hypothesis of a link between self-awareness and inner speech. Second, this hypothesis itself was explored by comparing the incidence of private speech in two conditions, the self-aware and control conditions.

METHOD

Subjects

Children (17 boys and 15 girls; mean age = 6.6 yr.) were recruited from two first grade classes at a local school. A special permission letter solicited parental support for participation. Each subject was randomly assigned to an experimental condition.

Apparatus

A Sony microphone and recorder hidden under the table on which the quotation was to be done were used to assess the incidence of private speech. The recorder was started before the arrival of the subject in the experimental room. The subject's private speech was quantified as follows: only introspective self-verbalizations were scored, i.e., speech addressed to the experimenter ("I am done!") or self-regulating speech for oneself ("Let's see the next picture.") was not quantified. Potential introspective private speech was expected to sound like, "Wow! I really like this picture!" The dependent measure was the total number of introspective self-verbalizations.

A notice box resting on the wall facing the table was equipped with a

large moveable mirror. In its original position, the subject could see his reflection while rating the pictures (self-awareness condition); the experimenter could slide the mirror toward the right so that the subject would not have access to his reflection (control condition). The mirror was placed in the proper position according to the experimental condition prior to the arrival of the subject.

Six color reproductions of photorealistic pictures (animals and landscapes; about 8 by 10.5 in.) sealed in a protective plastic were selected from diverse encyclopedias on the basis of their attractiveness. The order of presentation of the pictures was the same for all subjects. The quotation scale, specifically constructed for the present purpose, consisted of nine faces of a clown drawn by a professional. At the extreme left of the scale, the subject could see the clown's facial expression strongly suggesting a reaction of dislike (1 point); at the other extreme was a smiling face strongly suggesting a positive emotion (9 points), and in between, a gradual change from dislike to positive reactions (from 2 to 8 points). A subject was instructed to mark the face that most accurately corresponded to his feelings for each picture (six different scales were used by each subject, i.e., each picture had a scale); see Fig. 1. The dependent measure was the mean score for the six pictures.



Fig. 1. Array of faces used by subjects to indicate feelings

Procedure

Each subject was called individually by a male experimenter while in class and escorted to a quiet room. While walking to this room, the experimenter put the subject at ease by explaining the nature of the task as a game.

In the room, one could find a table, two chairs, and the notice box with the mirror. The subject was invited to sit, and his name and age were noted. The images were then placed on the table, and the subject received the following instructions:

"Here is what I am going to ask you to do. We have six pictures here. Take the first picture for instance. Now [referring to the rating scale], how do you think this clown [the smiling one on the extreme right] feels about the picture? [The child said: He seems to like it!] Good! Now [pointing to the sour-faced clown], what do you think this one feels about the picture? [The child said: He doesn't like it at all!] Yes! And that one [pointing to the neutral facial expression]? [The child said: It is in the middle . . . I think he likes it more or less.] OK! Now, you are going to take each picture; if you

like the picture very much, encircle this clown's face [the smiling one]. If you don't like the picture at all, encircle that one [the sour one]. If you like the picture so-so, encircle that one [the neutral one]. And if, for example, you don't like it, but you don't hate it, encircle one of these [one of the three between the sour- and neutral-faced clowns]. [The same instruction was restated for a positive emotional response.] Did you understand?"

The experimenter then invited the subject to begin the task, and after having explained that he had work of his own to do, sat so that he would not attract the subject's attention or be seen in the mirror by the child (in the self-awareness condition). By staying in the room with the subject, the experimenter was able to note any audible occurrence of private speech, to be compared thereafter with the content of the tape recording. In a study by Flavell, Beach, and Chinsky (1966), three experimenters were present during the recording of children's private speech, with no apparent inhibition of self-verbalizations. So, there were no clear indications that by staying in the room with the subjects, the experimenter would introduce experimental bias.

RESULTS AND DISCUSSION

Self-awareness

The mean scores for all subjects are 7.8 (minimum = 4.3; maximum = 9; *SD*: 1.31). The mean score was 7.7 (*SD*: 1.2) in the self-aware condition, and 7.9 (*SD*: 1.4) in the control condition. Girls rated the images as more attractive than boys (mean score of girls = 8.1 [7.5 for boys]), the difference being nonsignificant, however, for $p = .01$. The results clearly show that the evaluation of the images in the self-awareness condition was not significantly higher than in the control condition; in fact, the evaluation was slightly higher in this latter condition.

It can be concluded that a state of self-awareness, as defined here, was not experienced by these children. The experience of a state of self-awareness would have been manifest, presumably given intensification of affect, had subjects made reliably more favorable ratings of the images in the mirror condition; this was not observed.

Private Speech

Of the 32 children participating, only one produced introspective private speech (and in the *control* condition). More precisely, this boy said to himself "This I like!" when rating one of the six pictures. Some social speech addressed to the experimenter was recorded; other self-verbalizations consisted in singing, making noises, laughing, and the like. Many sounds were simply not interpretable; no self-regulating private speech was observed. Since no state of self-awareness appeared to have occurred in this experiment, it is impossible to address the proposed link between self-awareness and inner speech.

When considering the fact that very few self-verbalizations were emitted over-all, one must recognize that the presence of the experimenter in the room might not only have been distracting (resulting in social speech addressed to him), but might also have *inhibited* it, contrary to our original prediction. It is possible that a feeling of being observed (despite the precaution taken to this effect) might have induced an impression of being evaluated, which in turn inhibited subjects' propensity to verbalize their inner thoughts out loud; see Schwartz and Garamoni (1986) for an extensive discussion on that topic. Needless to say, any further attempt to replicate the present work should take this observation into account.

Conclusion

The results of the experiment, if not very encouraging, are at least informative. They show that the failure to induce a state of self-awareness in young children by using a rationale where no standards intervene, apparently reflects some reason other than the possible absence of such standards. This failure can hardly be explained in terms of an eventual inefficacy of the mirror as an inductor of self-awareness, since this particular self-focus stimulus has been quite effective in many prior experiments. We also doubt that the measure of self-awareness used here (i.e., an intensification of affect resulting in reliably more favorable ratings of the images) was inadequate; this measure has also yielded excellent results in the past. Nor do we see in what way the pictures, or even the selection of subjects, might have been responsible for the results. On the basis of the evidence that is available from this study and previous work, the hypothesis should be considered that in young children, it is simply not possible to induce a state of self-awareness comparable to that seen in adults.

We proposed at the outset that two different fields of research, self-awareness and private speech, could be reunited to test a new hypothesis, that of the existence of a link between inner speech and self-awareness. The present failure to induce a state of self-awareness in children suggests that the private speech paradigm might not be the most promising research avenue in the exploration of the proposed link between inner speech and self-awareness. We think that an attempt to explore this avenue of research had to be made. The fact that it failed is worth stating; we would suggest that research on this question be oriented more toward understanding the development of the capacity for self-awareness than toward another attempt to demonstrate a capacity that probably does not exist.

The hypothetical link between inner speech and self-awareness was not supported by our data, since no introspective private speech was emitted. This, of course, does not mean that the link hypothesis is invalid, for no state of self-awareness was apparently created. There exist other ways to test the hypothesis (Morin & Everett, 1990), and the present attempt represents

only one of many strategies that had to be tried in the process of identifying the underlying cognitive tools the self uses in thinking of itself.

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