EYE CONTACT AS AN ANTECEDENT TO COMPLIANT BEHAVIOR

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Many experimenters and practitioners regard eye contact between instructor and learner as a facilitator, if not a prerequisite, to the effective instruction of sighted people. Without scientifically supporting the practice of demanding eye contact, experimenters, nonetheless, advocate its use and offer a variety of procedures to promote its acquisition. To justify the widespread use of demanded eye contact and to explain its role functionally, one experiment and data from six replications with nine subjects are presented. The primary experiment provides an empirical base for the training of eye contact prior to instruction. In a multiple-baseline design across two students demanded eye contact resulted in levels of compliance that were double and triple those of baseline. A tentative functional analysis of demanded eye contact is presented, followed by a discussion of the relationship of eye contact to attending.

DESCRIPTORS: eye contact, compliance, antecedent event

Instruction following has long been considered essential to the educational process. Without compliance to a teacher's commands, directed learning experiences would be inefficient and difficult to provide. To obtain control over the instructed responses of students, many investigators have relied on contingency management (e.g., Schutte & Hopkins, 1970; Zimmerman, Zimmerman, & Russell, 1969). More recently, Neef, Shafer, Egel, Cataldo, and Parrish (1983) suggested that control over instructed responses is dependent on the differential reinforcement of classes of compliance. Increased compliance to "do" requests apparently does not result in increased compliance to "don't" requests. It is therefore necessary to reinforce both classes of behavior to obtain generalized compliance.

Other investigators have suggested that instructional control might also be gained through the use of antecedent stimuli, such as eye contact (e.g., Kozloff, 1973; Risley & Wolf, 1967). Without demonstrating the relationship of eye contact to

instruction following, experimenters, nonetheless, have identified eye contact for sighted students as a prerequisite to teaching specific skills (Fox, 1977; Harris, 1975) and have prescribed teaching techniques that require eye contact (e.g., Becker, Engelmann, & Thomas, 1971; Lovaas, Berberich, Perloff, & Schaeffer, 1966). For instance, Becker et al. provided teachers with step-by-step instructions for gaining a student's attention that included commands such as "Look, Mary, look," "Everybody, look at me," and "Watch me." The significance the authors attach to gaining eye contact is further evidenced in their recommendations that eye contact be strengthened by reinforcing comments such as, "That's good watching."

Although educators and researchers appear to be operating on the assumption that eye contact for sighted people is functional, a demonstration of the relevance of eye contact to instruction-following has yet to be made. The need to provide an empirical base for a widely recommended and practiced instructional procedure, plus the need to identify an acceptable and simple intervention for classroom and home use, gave impetus to the investigation of eye contact as an antecedent to instruction following. Seven independent studies, all using identical instructional procedures, were conducted across various settings to assess the external validity of demanded eye contact. The details of

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one investigation are presented in full here, whereas the data for the remaining six studies are summarized.

PRIMARY EXPERIMENT

METHOD

Students and Setting

Jessica and Nathan, two 11-year-old students from an inner city public elementary classroom, were selected to participate on the basis of reported noncompliance to teacher instructions. Both students were placed in a combined fourth and fifth grade classroom for students with basic skill deficits.

Instructions and Criteria for Compliance

The types of instructions and criteria for compliance were based on those used by Schutte and Hopkins (1970) in their investigation of the effects of praise on compliance. The following list of 10 instructions and time allowances for compliance were used for both students:

1. "(Name), hang up your coat." (10 s)
2. "(Name), sit down." (10 s when child was within 5 ft of the desk)
3. "(Name), sit down." (30 s when child was in the back of the room)
4. "(Name), put your pencil down." (10 s)
5. "(Name), put your books away." (20 s)
6. "(Name), turn around." (5 s)
7. "(Name), sit up." (5 s)
8. "(Name), look up front." (5 s)
9. "(Name), get busy on your assignment." (10 s)
10. "(Name), line up." (30 s)

For purposes of the study each instruction was given once during a full school day. Although some of the instructions may have been repeated as part of the classroom activities, measurement of each instruction was made only once and at a predetermined time. This arrangement assured a constant number of opportunities to respond to each request.

Recording and Measurement Procedures

Prior to the study, the teacher was given data sheets on which he listed each instruction and the amount of time in which the student could respond in order to be considered compliant. Beside each instruction and time limit was a box in which the teacher recorded a plus for compliance and a minus for noncompliance. The teacher used the classroom wallclock to time the interval for responding, which began at the end of the instruction and ended when the allotted time elapsed. For each student, the percentage of the 10 instructions followed was computed daily by dividing the total number of instructions followed by the total number of opportunities (10) and multiplying the dividend by 100.

Reliability

Reliability of measurement was determined by having the teacher's aide simultaneously and independently collect data on four occasions, twice for each student during each condition. Calculations of agreement were made by dividing the number of agreements by the total number of possible agreements and multiplying by 100. Agreement percentages during baseline and intervention were 85% and 95%, respectively.

Experimental Conditions

Two experimental conditions were arranged in a multiple-baseline design across students. The consequences for compliance and noncompliance were held constant across both conditions. Whenever an instruction was followed, the teacher promptly said, "Thank you." If an instruction was not followed, the teacher ignored the noncompliant behavior.

Baseline. During baseline, the teacher looked at the student, called the student's name, hesitated for 2 s, and gave an instruction. Although the teacher looked at the student until the instruction was completed, the student may or may not have made eye contact with the teacher at that time. Baseline conditions were in effect for 5 days for the first student and 10 days for the second student.

Demand eye contact. During this condition,

the teacher called the student's name and hesitated 2 s. If the student responded by making eye contact within 2 s, the teacher proceeded to give the student an instruction. If the student did not make eye contact within 2 s, however, the teacher demanded eye contact by saying, "(Name), look at me." The teacher attempted to use a moderately firm tone of voice to give instructions. Eye contact was required during the entire time instructions were given. When eye contact was broken by the student, the teacher again demanded eye contact, hesitated 2 s, and if eye contact was made, repeated the entire instruction. The demanded eye contact phase lasted 10 and 5 sessions for Nathan and Jessica, respectively. The occurrence of eye contact was based on a two-fold judgment by the teacher (i.e., that the student's face be oriented toward the teacher's face and that the student's line of vision be the same as the teacher's). Lines of vision were regarded as identical when the straightforward orientation of the student's and teacher's pupils and irises would permit a straight line to be drawn between them.

RESULTS

Figure 1 illustrates the effects of the antecedent, demanded eye contact on instruction-following. During the five days of baseline for Nathan, scores ranged from 20% to 40% with a mean of 30%. On the first day of demanded eye contact, compliance increased to 60% and ranged throughout the phase from 60% to 80%. The data stabilized at a mean level of 70%. Thus, demanded eye contact more than doubled the baseline level of compliance. For Jessica, baseline values ranged from 10% to 30% with a mean of 20%. During the demanded eye contact phase, instruction-following immediately rose to 60%. Intervention scores ranged from 50% to 70% and stabilized at a mean level of 60%, which was three times that of baseline.

REPLICATED EXPERIMENTS

Six replications of the previously described procedures were conducted over a period of 1 year.

Figure 1. Percentage of instructions to which Nathan and Jessica were compliant during baseline and demanded eye contact. During intervention, eye contact was demanded prior to each instruction.

The nine participants in the studies ranged in age from 2 to 21 years. The settings included the classroom, home, and an institution for mentally retarded people. The first author conducted role playing sessions prior to data collection with the teachers and parents participating in the studies to assure uniformity of responses. Roles of teacher (or parent) and subject were alternated to provide a thorough understanding of subject and experimenter behavior under both baseline intervention conditions. Practice in demanding eye contact was continued until all participants could obtain eye contact by the previously stated definition. Results of the six replications are presented in Table 1.

DISCUSSION

The results of the reported study as well as five of the six replications demonstrated that demanded eye contact is an effective antecedent for increasing compliance to instructions. Although the sufficiency of the procedure to achieve a socially valid level

Table 1
Results of Replication Studies

Study number	Participant number	Type of design	Base-line ₁ mean (%)	Intervention mean (%)	Base-line ₂ mean (%)	Mean reliability (%)
1	1	Reversal	20	50	6	98
2	2	Multiple baseline	28	71	—	87
	3	Multiple baseline	28	65	—	92
3	4	Reversal	44	83	80	90
4	5	Multiple baseline	57	73	—	85
	6	Multiple baseline	62	80	—	85
5	7	Multiple baseline	22	74	—	98
	8	Multiple baseline	38	87	—	95
6	9	AB	48	41	—	—

of change was not assessed, an indirect comparison of its effects with those of reinforcers such as token economies (e.g., Homme, deBaca, Devine, Steinhorst, & Rickert, 1963) suggests that demanded eye contact has a comparable effect on compliance. The appeal of eye contact as an intervention procedure was evident in the comments of teachers who generally considered this procedure to be more acceptable than reinforcement procedures. Using an antecedent intervention let teachers quickly and conveniently establish and maintain compliant behavior through verbal praise. In so doing, they eliminated the need to allocate teaching time and effort to dispensing and later thinning reinforcers such as tokens.

Our study suggests that earlier experiments incorporating demanded eye contact into treatment procedures without conducting component analysis may have overstated purported treatment effects. For example, in a study conducted by Nordquist and Wahler (1973), treatment effects for accelerating compliant behavior were attributed solely to contingent social approval, play time, and time-out. A close reading of the description of procedures used (see footnote, p. 82) indicates that prior to the instatement of contingencies, parents were

instructed in methods of teaching nonverbal behaviors which began with the command, "Watch me." Following closer approximations to compliance in making nonverbal imitations, the child was then socially reinforced. With the inclusion of demanded eye contact in instructional procedures, one might justifiably question the significance attributed to the contingencies alone.

To determine the extent to which the findings of the primary study could be generalized, six additional studies were conducted. Although demanded eye contact proved effective for eight out of nine participants, one parent reported a decrease in the level of compliance when eye contact was demanded of a two-year-old child (Participant 9). One might speculate that demanded eye contact is an inappropriate procedure for a 2-year-old child. Nevertheless, in a separate investigation, demanded eye contact was as effective with a 2-year-old participant as it was with older participants. Overall, the six studies that demonstrated the effectiveness of demanded eye contact also established its versatility across settings.

These experiments did not isolate the independent effects of eye contact and demands, leaving a component analysis of the individual contributions to future research. Based on student comments, however, one might tentatively consider either or both components to function as a mild negative reinforcer. Anecdotal recordings of student comments include, "Please don't say, 'look at me,' again today," and "You can stop this 'look at me stuff'; I already hung up my coat, and here's my homework." As a stimulus that may contain an aversive component, demanded eye contact, therefore, could negatively reinforce making eye contact. Although a negatively reinforcing component of demanded eye contact might initially account for compliance, an argument can be made that praising compliance, "Thank you for _____," accounted for increased compliance, or that the positive and negative aspects collectively controlled responding.

The preceding analysis suggests that demanded eye contact can ultimately be conditioned to function as a discriminative stimulus for reinforcement.

Two points should be stressed, however. First, a discriminative stimulus that depends on negative reinforcement for the first response in a chain should not be used without providing positive reinforcement after the chain is completed. Otherwise, undesirable side effects may occur and the responses of undemanded eye contact and compliant behavior may not come under the control of desirable social reinforcers such as praise. Second, teachers should not mistakenly interpret eye contact as attending. A common occurrence is the student who orients his or her head toward a textbook for 20 minutes and, yet, incorrectly answers questions later asked by the teacher. As was first noted by Skinner (1953), attention is defined by the relationship between a response and a discriminative stimulus. Therefore, the correct orientation of one's head does not indicate that the student is attending. Similarly, making eye contact should not be regarded as attending, but simply a response in a chain that, if highly correlated with the later response of instruction-following, can lead one to conclude that attending occurred.

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