

## **WILLING OR ABLE? THE MEANINGS OF SELF-EFFICACY**

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One hundred and twenty college students (97 women) completed measures of anticipated performance for a fear-based snake behavioral avoidance task (BAT) and a skill-based basket-shooting task. Half of the participants were instructed to identify the task steps they believed themselves able to do (standard self-efficacy instructions). The remaining participants were instructed to identify the task steps they would be willing to try. Prior to completing the anticipatory performance measures, half of the participants in each of the "able to do" or "willing to try" conditions received information, called disambiguation instructions, about Kirsch's (1982) hypothesis that people frequently use these terms interchangeably for fear-based tasks but not skill-based tasks. Results revealed that, for participants who did not receive the disambiguation instructions, participants endorsed a similar number of BAT steps regardless of questionnaire instructions. On the basket-shooting task, participants asked to identify steps they were willing to try endorsed a greater number of steps than participants asked to identify steps they were able to do. For participants who received the disambiguating instructions, participants asked to identify BAT steps they are able to do endorsed a significantly greater number of steps than participants asked to identify steps they would be willing to try. On the basket-shooting task, participants asked to identify steps they

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were willing to try endorsed a greater number of steps than participants asked to identify steps they were able to do. These results are consistent with Kirsch's hypothesis and challenge the construct validity of measures of self-efficacy for fear-based tasks. Implications for the assessment of self-efficacy in other behavioral domains are discussed.

Bandura (1977) defined self-efficacy expectancies and distinguished them from outcome expectancies in the following manner: "An outcome expectancy is defined as a person's estimate that a given behavior will lead to certain outcomes. An efficacy expectation is the conviction that one can successfully execute the behavior required to produce the outcomes" (p. 193). Within the field of phobic disorders, substantial research by Bandura (e.g., Bandura & Adams, 1977; Bandura, Adams, & Beyer, 1977) and others (e.g., Schoenberger, Kirsch, & Rosengard, 1991; Williams, Dooseman, & Kleifield, 1984; Williams, Turner, & Peer, 1985) have repeatedly found measures of self-efficacy to be highly predictive of behavioral performance. Moreover, self-efficacy retains its predictive relationship with avoidance behavior even when anticipated anxiety (an outcome expectancy) is statistically controlled, whereas anticipated anxiety typically loses its predictive relationship with phobic behavior when self-efficacy is statistically controlled (Williams, 1996).

Despite the demonstrated predictive validity, Kirsch (e.g., 1982, 1985, 1995) has raised questions about the construct validity of measures of self-efficacy, contending that what measures of self-efficacy assess (i.e., the meaning of self-efficacy) varies across tasks. Specifically, Kirsch has argued that measures of self-efficacy assess the theoretical construct of self-efficacy for some tasks, but not other tasks, the most notable example of the latter being the kind of behavioral approach task (BAT) that has been used in much self-efficacy research. Kirsch's analysis begins with the casual observation that most adults have within their behavioral repertoires the component skills required by a typical laboratory small animal BAT. For example, most people are able to walk toward a cage, place their hand on the cage, reach into the cage, etc. Despite this, highly phobic individuals will report on self-efficacy measures that they cannot perform these activities when the cage contains a phobic object, such as a snake or spider. According to Kirsch, fearful individuals who report they are "not able" to perform such tasks are not reporting their level of *ability*. Rather, Kirsch believes they are reporting that they are *not willing* to perform those tasks, despite their ability to do so. Theoretically, people's decisions about whether or not to perform a particular behavior within their repertoire are strongly influenced by the anticipation of the emotional consequences of those actions, such as experiencing

anxiety, which is a type of outcome expectancy. Kirsch (1982) further argues that equating "willingness" with "ability" for such aversively motivated tasks represents a relatively common linguistic habit.

Contrast this situation with performance on a skill-based task, in which the relevant behaviors may in fact be beyond a particular individual's ability. For example, a person who has never received education in Calculus literally would not be able to compute a derivative. As another example, contrast the BAT with a task that requires a degree of brute force (e.g., attempting to lift a heavy weight), which again may literally exceed a person's physical capacities. In both the Calculus and weight lifting examples, people who report that they cannot accomplish the target performance are providing estimates of their ability level (i.e., self-efficacy, as defined theoretically), and not simply their level of willingness to try the task.

In an initial test of his hypothesis, Kirsch (1982) asked a group of students who reported being afraid of snakes to rate their expected performance on two different activities. Neither task was actually undertaken. One task was a snake BAT. The other was a basket-shooting task, the goal of which was to toss a wadded piece of paper into a wastebasket from increasingly greater distances. After self-efficacy ratings were made for both tasks, participants were offered a range of hypothetical incentives for reports of increased performance on each task. Results indicated that participants were far more likely to increase estimates of their BAT performance as a result of the incentives than to increase the estimates of their basket-shooting performance. Based on the assumption that incentives should influence people's willingness to perform an action within their behavioral capacity, but not influence the assessment of their ability to perform the tasks, the pattern of results was interpreted as being consistent with Kirsch's hypothesis. Corcoran and Rutledge (1989) conducted a similar experiment in which smokers were provided with hypothetical incentives to refrain from smoking for increasingly longer durations and to improve their performance on a basket-shooting task. Results indicated that incentives increased self-efficacy ratings more so for smoking cessation than for shooting baskets.

The results from the studies by Kirsch (1982) and Corcoran and Rutledge (1989) show a pattern that may be termed a single dissociation. In a single dissociation, one independent variable, incentives in this case, has a strong effect on one measure, self-efficacy for the BAT or smoking abstinence, but little or no effect on a second measure, the basket-shooting task. Although a single dissociation may suggest the operation of two underlying psychological processes, such as different meanings of the phrase "indicate those items you are able to do," such evidence is not compelling. A weakness of the single dissociation is that the possibility remains the second measure would have responded to

the independent variable in question under a different set of test parameters. For example, perhaps even greater incentives than those used in these studies would have increased self-efficacy for the basket-shooting task. Alternatively, it is possible that the basket-shooting task would have been more influenced by the incentive manipulation had the steps been graded in smaller increments (e.g., inches instead of feet). Bandura (1995) offers a further discussion of the possible dependence of performance in these situations on the specific parameters used.

The issue of whether measures of self-efficacy assess willingness or ability for fear-based tasks remains an important theoretical and measurement issue to be resolved. If Kirsch's hypothesis is correct, then the self-efficacy theory of phobic behavior (e.g., Bandura, 1977, 1988; Williams, 1987, 1995, 1996) has no direct empirical basis because the measures used in these studies have not actually assessed self-efficacy as theoretically defined. Therefore, we have recently undertaken a program of research to further investigate this issue. In a pilot study, we (Cahill, Gallo, Lisman, & Weinstein, 1999) investigated the effect of altering the questionnaire instructions. Half the participants were given standard self-efficacy instructions to identify the steps of a task they believed themselves able to do. The remaining participants were instructed to identify the steps of the task they would be willing to try. Participants completed these anticipated performance scales for both a snake BAT and a basket-shooting task. We reasoned that if participants respond to self-efficacy questionnaires for the BAT by indicating the steps they would be willing to perform, then changing the instructions would have no effect. However, for the skill-based basket-shooting task, people should be willing to try even those steps (e.g., attempting to make a basket from 50 feet) they believe are outside of their ability to succeed, as long as there are no negative consequences for failure. The results were as predicted. Altering the questionnaire instructions had no effect on the number of BAT steps that participants endorsed. By contrast, participants endorsed a significantly greater number of steps on the basket-shooting task when asked about their willingness to than when asked about their ability to succeed.

The results of our pilot study illustrate a single dissociation similar to that reported by Kirsch (1982) and Corcoran and Rutledge (1989), and therefore suffers the same fundamental limitations. We cannot, for example, rule out the possibility that the change in questionnaire instructions would have been effective for the snake BAT under a different set of parameters. For example, it is possible that we would have seen the same effect on the snake BAT as for the basket-shooting task had the snake BAT been more carefully graded (see Bandura, 1995). We also cannot rule out the possibility that, when faced with a potentially unpleas-

ant task such as handling a snake, participants are willing to try only those steps they also feel able to successfully complete. Both of these alternative explanations could be ruled out if an additional manipulation were identified that would create a difference between participants in the “able to do” and “willing to try” condition on the BAT, but in the direction *opposite* that observed for the basket-shooting task. Specifically, the finding of a significant difference on the BAT between the “able to do” and “willing to try” conditions in either direction would rule out the possibility that the original finding was due a lack of sensitivity to detect an effect of the questionnaire instructions. Moreover, finding a difference on the BAT in the opposite direction of that observed for the basket-shooting task (greater levels of reported ability than willingness on the BAT) would indicate that the original finding was not due to a simple convergence of the participants’ levels of ratings of willingness and ability. Such a pattern of results may be termed a double dissociation, and provides strong support for presence of two independent processes, such as two distinct meanings of the phrase “able to do.”

We infer from Kirsch’s writing (e.g., 1982, 1985, 1995) that the hypothesized linguistic habit to equate the terms “willing” and “able” for aversively motivated tasks is neither absolute nor immutable. Otherwise, Kirsch himself would not have been able to formulate the hypothesis, much less communicate it to others, as everyone would be equally constrained by the same linguistic habit. Indeed, Kirsch’s writings serve to illustrate one potential way in which the effect of the hypothesized linguistic habit may be reduced: persuasive communication describing his hypothesis with vivid examples of situations when people are more or less likely to use the terms “willing” and “able” interchangeably. We adopted this strategy in the present experiment. Half the participants were provided written information, which we call *disambiguating instructions*, about the hypothesized linguistic habit of equating “willing” and “able” for some kinds of tasks (e.g., a fear-based task) but differentiating between the terms for other kinds of tasks (e.g., a skill-based or strength-based task). The remaining participants did not receive these disambiguating instructions. All participants then provided ratings of anticipated performance for a BAT and basket-shooting task. Half the participants in each disambiguating instructions condition identified those items they felt able to do (i.e., standard self-efficacy instructions) and the remaining participants identified items they would be willing to try.

Based on Kirsch’s analysis, we predicted that clarifying the distinction between the two terms through the disambiguating instructions would have little effect on performance related to the basket-shooting task: Ratings for willingness to try would remain significantly greater than ratings of ability. By contrast, clarifying this distinction was predicted to

produce the opposite pattern of results on the snake BAT: Ratings for ability to perform the BAT steps should be greater than ratings for willingness to try. However, if the failure to find an effect of the questionnaire instructions in our pilot study was due to the BAT being insensitive to the effects of the questionnaire instructions manipulation, or because people's ratings of their willingness and ability happen to converge when dealing with aversively motivated tasks, then providing them with the disambiguating instructions should have no effect.

## METHOD

### PARTICIPANTS

Participants were 120 (97 females) undergraduate students enrolled in introductory psychology courses at Binghamton University. All participants were recruited via a sign-up sheet to participate in small groups of up to 15 students per group (median of 5 participants per group). In return, participants received class credit toward their research option. All participants were run during the course of a single semester.

### MATERIALS

*Task Descriptions.* The description of the snake BAT was modeled after the BAT commonly used by Bandura and his colleagues (e.g., Bandura, Adams, & Beyer, 1977), and adopted by Kirsch (1982) and colleagues (Schoenberger, Kirsch, & Rosengard, 1991). Our description included several photographs of different people handling a non-poisonous king snake that measured approximately four feet in length. The description also included some basic facts about snakes that contradicted common myths about them (e.g., the fact that snakes are dry in comparison with the myth that they are slimy). The BAT consisted of 18 carefully graded steps, beginning with the participant looking at a snake in a glass cage from a distance (step 1). It then progressed to the participant approaching, touching, and then reaching into the cage, first with a gloved hand and later with a bare hand (steps 2 to 9), followed by the participant touching, lifting, and handling the snake (steps 10 to 17). The BAT description ended with the participant sitting in a chair while allowing the unrestrained snake to be placed on his or her lap (step 18).

The basket-shooting task was modeled after those used by Kirsch (1982) and Corcoran and Rutledge (1989). The task consisted of a description of a person throwing a wadded up piece of paper (8.5 in × 11 in) into a waste paper basket from increasingly greater distances. The basket-shooting task began at a distance of two feet (step 1). It then in-

creased to five feet (step 2); followed by increasingly greater distances incremented in units of five feet, up to a distance of 70 feet (steps 3 to 15). The remaining steps (steps 16 to 18) increased in increments of 10 feet, to a maximum distance of 100 feet. To help participants appreciate the distances involved, they were informed that, "The free throw line on a basketball court is located approximately 15 feet from the basket; mid-court is approximately 50 feet from the basket; and 100 feet is approximately the entire length of a basketball court."

*Anticipated Performance.* Separate measures of anticipated performance were constructed for the BAT and basket-shooting task, modeled after Bandura's (e.g., Bandura, Reese, & Adams, 1977) self-efficacy questionnaire. Participants were instructed to make two judgments about their anticipated performance for each of the 18 steps involved with increasingly greater contact with a snake and successfully tossing a wadded up piece of paper into a waste paper basket from increasingly greater distances. The manner in which the instructions for the two ratings were worded constituted the primary between-group independent variable, hereafter referred to as the questionnaire instructions manipulation. Standard instructions for assessing self-efficacy (e.g., Bandura, Reese, & Adams, 1977) were utilized for half of the participants. These individuals were asked to first indicate those steps they felt *able to do* by placing a check mark on a line next to the item. Participants then rated their confidence in their ability to perform each step they had initially checked. Confidence ratings were made on a 10-point scale that ranged from 10 to 100, incremented in units of 10 (i.e., 10, 20, . . . 90, 100). The scale was anchored with the descriptors "quite uncertain" and "certain," with higher scores reflecting greater confidence. Thus, the "able to do" version of the anticipated performance measure was identical to Bandura's self-efficacy measure. The remaining participants were instructed to indicate those steps they would be *willing to try* and then rate their confidence in their willingness to try each step on the same 10-point scale.

*Disambiguating Instructions.* The disambiguating instructions began with Bandura's definition of self-efficacy and then provided a description of Kirsch's hypothesis that self-efficacy questionnaires assess the construct of self-efficacy for some tasks, such as those requiring a high level of skill, but assesses willingness to perform the task for aversively motivated tasks. Following Kirsch's lead, the point was then vividly illustrated with two vignettes. One vignette was of a young man lifting weights with his friend. The friend initially loads several weights onto the barbell, to which the young man indicates that he "can't" lift that much weight although he agrees to try. Despite exerting his best effort and the encouragement and cajoling of his friend, the young man is unable to lift the bar. The amount of weight is then decreased and the

young man tries again. This process continues until they eventually find a weight load he is able to lift and execute eight successive repetitions of the exercise. This was used to illustrate the case in which a person accurately estimates that a task is literally beyond his or her capacity.

The second vignette was of the same young man experiencing loneliness during his first semester at college, which is the first time he has been away for an extended period of time from his friends and family. As a result, the young man seeks counseling for his depression at the student counseling center. In the course of a session, the counselor suggests the young man ask a female classmate for coffee, to which the young man indicates he “can’t” ask out the young woman. The vignette continues with clarification that, in fact, the young man has the ability to ask the classmate for coffee but experiences anxiety about the prospect of being rejected, which inhibits him from approaching the classmate. This was used to illustrate the case in which people may use the term “can’t” to describe a situation in which they are in fact able to perform the task but chose not to.

## PROCEDURE

Participants in each group were randomly assigned to complete one of four questionnaire packets created by crossing the questionnaire instruction conditions (“able to do” vs. “willing to try”) with the disambiguating instruction conditions (no additional instructions vs. disambiguating instructions provided). Because there was no evidence from our pilot study that order of presentation had an effect, all participants completed the questionnaires in the same order. Upon providing written informed consent, participants read the description of the snake BAT and completed the relevant anticipated performance form. Next, they read the description of the basket-shooting task and completed the relevant anticipated performance form. Participants in the disambiguating instructions condition read the relevant instructions prior to reading the description of the snake BAT. The dependent variable in this study was anticipated performance level, similar to Bandura’s self-efficacy level (e.g., Bandura & Adams, 1977; Bandura, Adams, & Beyer, 1977), defined as the number of items on each task endorsed with an “able to do” or “willing to try” confidence level of 20 or greater.

## RESULTS

Anticipated performance scores were submitted to a gender  $\times$  questionnaire instructions (“able to do” vs. “willing to try”)  $\times$  disambiguating instructions (no additional instructions vs. disambiguating instructions

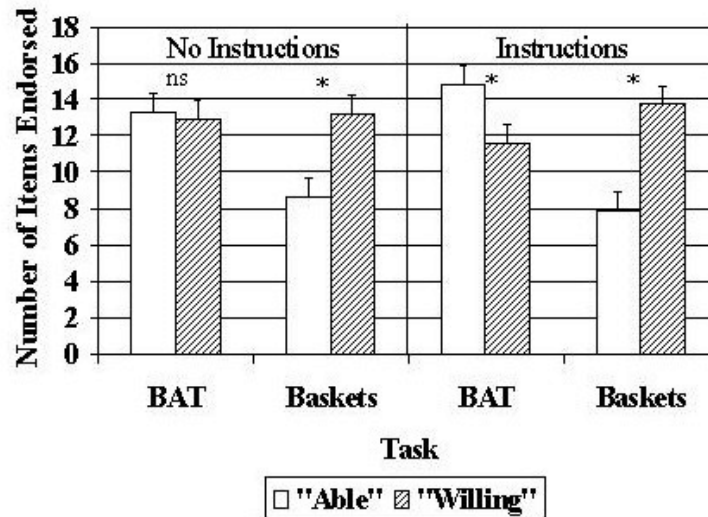


FIGURE 1. Mean anticipated performance levels for the snake BAT and basket-shooting task, plotted as a combined function of questionnaire instructions ("Able to Do" vs. "Willing to Try") and disambiguating instructions (no disambiguating instructions vs. disambiguating instructions provided) conditions. The letters "ns" indicate the adjoining bars are not significantly different from one another; an asterisk (\*) indicates the adjoining bars are significantly ( $p < .05$ ) different from one another. Brackets indicate standard errors.

provided)  $\times$  task (BAT vs. basket-shooting task) mixed factorial analysis of variance (ANOVA). Of central interest to the question addressed in this research is the three-way questionnaire instructions  $\times$  disambiguating instruction  $\times$  task interaction, which was found to be significant,  $F(1, 112) = 4.26, p < .05$ . Analysis of the simple main effect of the questionnaire instructions for each task at each level of disambiguating instructions was conducted with four single-factor ANOVAs. The relevant means are displayed in Figure 1.

Inspection of the two left-hand pairs of bars in the figure (no disambiguating instructions condition) suggests, and statistical analysis confirms, that the results of our pilot study were replicated. Although there was no significant difference between the two questionnaire instructions conditions for the BAT,  $F(1, 58) < 1, p > .76$ , anticipated performance for the basket-shooting task was significantly greater in the "willing to try" condition than the "able to do" condition,  $F(1, 58) = 14.54, p < .0001$ .

Inspection of the two right-hand pairs of bars (disambiguating instructions present condition) suggests, and statistical analysis confirms, that a different pattern of results was obtained. Although, anticipated performance levels for the basket-shooting task were again significantly higher in the "willing to try" condition than in the "able to do" condition,  $F(1, 58) = 24.25, p < .0001$ , the reverse (greater anticipated performance levels in the "able to do" condition than in the "willing to try" condition) was observed for the snake BAT,  $F(1, 58) = 5.62, p < .02$ . The three-way interaction was not further qualified by gender,  $F(1, 112) < 1.0, ns$ .

## DISCUSSION

The present study was designed to test Kirsch's (e.g., 1982, 1985, 1995) hypothesis that the meaning of measures of self-efficacy differs across tasks. Consistent with the theoretical definition of self-efficacy, measures of self-efficacy assess a person's estimate of their ability to perform a task when confronted with a skill-based task, as exemplified by the basket-shooting task. However, in contrast to the theoretical definition of self-efficacy, measures of self-efficacy assess a person's willingness to perform tasks that are within their repertoire when dealing with fear-motivated tasks, as exemplified by the BAT. If Kirsch's analysis is correct and measures that have been used to assess self-efficacy for fear-motivated tasks do not actually assess the theoretical construct of self-efficacy, then the self-efficacy analysis of phobic avoidance has no empirical basis. Moreover, to the extent that other areas of interest to self-efficacy researchers can be subjected to a similar analysis (e.g., condom use to reduce the transmissions of HIV, abstinence and drink refusal among recovering alcoholics), the empirical status of self-efficacy in these other areas is also in question. The limited research to date on this topic (e.g., Kirsch, 1982; Cahill et al., 1999; Corcoran & Rutledge, 1989) is broadly consistent with Kirsch's hypothesis. However, results from these three studies suffer from the methodological limitations associated with demonstrating a single dissociation.

Cahill et al. (1999) found that participants who were not provided with any information regarding Kirsch's hypothesis provided similar ratings of anticipated performance for the BAT whether they were asked to identify task steps they were able to do or were task steps they were willing to try. On the basket-shooting task, by contrast, participants endorsed a significantly greater number of items under the "willing to try" instructions compared to the "able to do" instructions. Although consistent with Kirsch's hypothesis, results of the pilot study represent a single dissociation and there are at least two alternative interpretations of these

findings. First, the lack of a difference on the BAT between the two questionnaire instruction conditions could be due to measurement procedures that were not sensitive enough to detect the effect. Second, it is possible that when dealing with potentially aversive tasks, participants are only willing to try those tasks they also believe themselves able to do.

The present study replicated our earlier findings and extended them by comparing the performance of participants not given any information about Kirsch's hypothesis with the performance of participants explicitly informed about Kirsch's hypothesis. When participants received the disambiguating information, participants continued to endorse greater levels of willingness to perform steps on the basket-shooting task than ability to try the task. However, the opposite pattern was observed for the BAT, with participants endorsing greater levels of ability than willingness. Thus, the results of the present study represent a double-dissociation pattern that allows us to reject both of the alternative hypotheses under consideration. First, we can reject the measurement insensitivity explanation because we were able to find a difference on the BAT between the able to do and willing to try conditions if participants were informed of Kirsch's hypothesis. Second, we can reject the hypothesis that people are only willing to try tasks with potentially aversive consequences if they also believe they are able to do them. This is again because we found a significant difference on the BAT between the two questionnaire instruction conditions when participants received the disambiguating instructions. Importantly, the difference was in the direction opposite that observed for the basket-shooting task: There was a greater level of endorsement under the able to do condition than under the willing to try condition.

The immediate implication of these data is that it calls into question the empirical basis for the self-efficacy theory of phobic behavior. Specifically, all research on the self-efficacy theory of phobic behavior has, to the best of our knowledge, directly used Bandura's snake self-efficacy measure or closely modeled it to accommodate a different specific feared animal (e.g., spiders) or situation (e.g., heights). Moreover, we have not found any evidence that standard use of such self-efficacy measures involves the kind of careful instruction in the distinction between "willingness" and "ability" when it comes to performing simple tasks but which produce anxiety. Thus, we cannot be sure that existing research studies actually measured self-efficacy. Indeed, our research would suggest that, consistent with Kirsch's hypothesis, these studies have inadvertently measured people's willingness to perform tasks that they in fact are able to do.

By logical extension, the present data and theoretical analysis have implications for self-efficacy theory more generally. Many of the be-

haviors that have been subjected to self-efficacy analyses (drug/tobacco/alcohol abstinence, condom use, weight loss, exercise) can be re-analyzed from Kirsch's perspective. Take condom use as an example. The skills needed to purchase and apply a condom are relatively simple and easily acquired by most men. Yet, many men choose not to use condoms during sexual activity despite being fully able to do so. Or consider the skills involved in maintaining abstinence from alcohol. One important behavior for those wanting to remain abstinent is to order or prepare non-alcoholic drinks when consuming liquid refreshments. Here, the skills involved in ordering or preparing an alcoholic or non-alcoholic drink are nearly identical: pouring a glass of orange juice requires little more in the way of behavioral skills than pouring a glass of whiskey. Similarly, asking a bartender for a glass of ginger ale requires little more from a person than does asking the same bartender for a beer. The issue is not one of whether or not the person in each of these scenarios can use a condom, prepare a glass of orange juice, or order a ginger ale. Rather, the issue is whether or not the person will engage in these behaviors. Granted, there are many motivational factors that influence whether or not a person will engage in the alternative behavior, and often people face strong influences to not engage in the alternative behavior. For example, many men may experience sex as more pleasurable without a condom. Thus, they must be willing to sacrifice a degree of pleasure for increased safety. Or consider someone trying to maintain abstinence from alcohol. They may experience resistance from other people in their environment to imbibe in non-alcoholic drinks. The actual behaviors involved in refusing to drink alcohol in most circumstances involve such things as saying "No," handing an alcoholic drink to another person, setting the drink down and not consuming it, pouring the drink out, or leaving the situation, all behaviors that are easily acquired by most adults. Again, the real issue is whether or not the person will engage in these behaviors.

To the extent that various behavioral problems subjected to a self-efficacy analysis (a) are similar to the examples given, in that they involve behaviors the person is already able to perform or are easily acquired, and (b) the measures of self-efficacy have been closely modeled after Bandura's example, the present results would also call into question the empirical basis for self-efficacy theory applied to these areas. Put more generally, studies of self-efficacy can only provide support for the theory to the extent that they actually measured self-efficacy as defined theoretically. Strong evidence for the predictive validity of a measure, which many current putative measures of self-efficacy have, should not be confused with evidence of construct validity. It is therefore recommended that investigation of the construct validity of measures of

self-efficacy become a research priority for self-efficacy theorists and that the current empirical status of self-efficacy theory be evaluated in light of the extent to which various measures of self-efficacy that have been used have demonstrable construct validity. To the extent that current measures of self-efficacy have not yet been shown to have construct validity, the present investigation may provide a possible paradigm for investigating whether the measure of interest is assessing willingness to engage in a response rather than the perceived ability to perform the response.

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