

THE EFFECT OF SYMBOLS AND INCLUSION ON PERFORMANCE

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A Thesis

Presented to

the Faculty of the College of Science and Technology

Morehead State University

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In Partial Fulfillment

of the Requirements for the Degree

Master of Science

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by

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June 22, 2011

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Accepted by the faculty of the College of Science and Technology, Morehead State University, in partial fulfillment of the requirements for the Master of Science degree.

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# THE EFFECT OF SYMBOLS AND INCLUSION ON PERFORMANCE

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Morehead State University, 2011

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People are frequently exposed to symbols of group membership (e.g., flags, emblems, and icons) and symbols may influence a range of responses including thoughts, feelings, and behavior. The current work seeks to replicate and expand upon previous work indicating that symbols of group membership have the potential to increase academic performance (e.g., Hamil & Butz, 2010), by exploring whether exposure to symbols promotes a sense of inclusion, which in turn boosts performance. Thus, in the current work I test the hypotheses that exposure to psychologically important symbols of group membership increases inclusion and performance, and the effect of symbols on performance is mediated by inclusion. For the experiment, participants completed initial measures in an anteroom and were then invited into the main lab room. Some participants were seated in a room in which a symbol had been placed on the desk at which they would be working, whereas participants in a control condition were seated at a desk containing no symbol. In the presence or absence of symbols of group membership, participants completed a scale to assess their perceptions of inclusion (state inclusion) and a word fragment completion task to assess the automatic activation of inclusion concepts. To assess performance, participants completed a series of math problems and a non-academic typing task in a

counterbalanced order. Overall, the results indicated that symbol exposure did not influence levels of inclusion or performance, which did not support the proposed mediating role of inclusion. However, additional analyses revealed that the influence of symbol exposure on perceptions of state inclusion varied as a function of whether individuals were wearing symbols of group membership upon reporting to the laboratory. Specifically, participants who were “symbol wearers” reported feeling less included when exposed to a symbol intended to promote exclusion (symbol of Eastern Kentucky University) than participants exposed to symbols designed to promote inclusion (i.e., the U.S. flag and a symbol of Morehead State University). These results suggest that symbols can have an effect on some people’s perceptions of inclusion and suggest the need to uncover psychological factors that moderate the influence of symbol exposure on inclusion and performance.

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### **The Effect of Symbols and Inclusion on Performance**

Everyone has an innate need to belong to social groups (Baumeister & Leary, 1995). The need to belong is specifically a need to both form and maintain a minimum amount of interpersonal relationships. In their influential theory, Baumeister and Leary (1995) proposed that group living in ancient humans may have helped to defend against threats and increase access to physical resources (see also Cohen, 2004; Leary & Cox, 2007). Moreover, group living may have afforded opportunities to select suitable mates, which may have increased the likelihood that one would successfully reproduce and pass on one's genes (e.g., Leary & Cox, 2007). Thus, from an evolutionary perspective, people who were living as part of a group may have experienced a greater quality of life, and perhaps an even longer life. As a result of the adaptive value of forging social connections, contemporary humans may continue to possess a strong need to belong. Indeed, consistent with this proposition, an increasing body of work indicates that humans invest a great deal of attention to their interpersonal relationships and are hesitant to break any of their social bonds (see also Leary & Cox, 2007; Pickett, Gardner, & Knowles 2004).

Although the idea that humans possess a fundamental need to belong was a central theme of Baumeister and Leary's work, the concept of individuals being motivated to belong was based, in part, upon Abraham Maslow's earlier work on motivation. For example, Maslow (1970) proposed that the satisfaction of rather basic physiological and safety needs leads individuals to subsequently seek to fulfill higher-order needs such as needs for belongingness and love. Specifically, Maslow argued



that when people feel an absence of friends and/or family they will “hunger for affectionate relationships” (Maslow, 1970, p. 43), suggesting that the perceived absence of relationships may function as a drive that propels people to engage in efforts to satisfy their strong belongingness needs. Maslow notes that the theme of unfulfilled belongingness can be found in publications such as novels, autobiographies, poems, and plays (1970). Even though scientific evidence of the implications of unfulfilled belongingness was lacking in Maslow’s time, these glimpses inside the culture showed that many individuals strive to replenish belongingness and thereby satisfy their strong need to belong.

An important implication of viewing belongingness as a fundamental human need is that many people will work hard and go to great lengths in order to satisfy their need to belong (Maslow, 1970). For example, the need to belong may lead people to seek opportunities to become part of social groups. Indeed, many people are members of a variety of different social groups, including student groups (e.g., clubs, organizations, and fraternities/sororities), sports teams, and church groups. Moreover, although less frequent, people may join civic, service, and professional organizations to meet belongingness needs (see Forsyth, 2010). Actively participating in these social groups may help people to forge social connections, which may in turn satisfy their belongingness needs (e.g., Bailey, 2005). Even though the type, number, and permanence of groups may vary across individuals, people of every society are inclined to become part of one or more groups (Baumeister & Leary, 1995).

In addition to joining and participating in social groups, people may employ other strategies to help fulfill belongingness needs. These alternative methods may be employed when the opportunity to form or maintain relationships is limited by external factors, such as graduating college, moving to a new city, or even getting a new job (Baumeister & Leary, 1995). One such alternative fulfillment method was suggested by, Gardner, Pickett, and Knowles (2005). They proposed that many people surround themselves with symbolic reminders of their group membership, which may serve to increase their sense of belonging when exposed to such symbols; this practice is referred to as “social snacking.” Thus, in the absence of opportunities to participate in social groups, which may serve to quell one’s “hunger” for belongingness, in some instances people may rely on symbolic representations of group membership (i.e., engage in “social snacking”) to partially fulfill belongingness needs. Although there may be a multitude of social symbols that serve to remind people of their social connections, some of the more prominent “social snacks” include photographs of loved ones or mementos (e.g., Gardner et al., 2005).

In support of the idea that individuals engage in the practice of social snacking, Wells (2000) found that 85% of adults have some kind of a memento of a loved one either at their desks or in their wallets (see also Elsbach, 2004). Moreover, Vinsel and colleagues (1980) examined a similar phenomenon by observing college freshmen and found that college students who decorated their dorm room with objects that tied them to their college community were less likely to withdraw than those who decorated with objects that tied them back to their community at home. Although

belongingness was not directly assessed in these studies, the aforementioned findings are consistent with the idea that symbols of group membership are psychologically important and may contribute to a person's sense of belonging.

### **Consequences of Satisfying the Need to Belong**

There may be considerable benefits to satisfying the need to belong. Indeed, Baumeister and Leary argued that among ancient humans, the need to belong might have been functional in the sense that establishing social bonds provided important survival benefits. Although today the benefits may take a different form, there is accumulating evidence of the tangible benefits of satisfying belongingness needs. People who are involved and connected are less likely to experience colds, heart attacks, or strokes, and may therefore live longer, healthier lives than those who are less socially connected (e.g., Putman, 2000; see also Egolf, Lasker, Wolf, & Potvin, 1992). Social connections may also improve the prognosis of those experiencing serious illnesses, as Spiegel and colleagues (1989) demonstrated that breast cancer patients who attended weekly group therapy sessions lived an average of eighteen months longer than cancer patients who did not engage in such social gatherings (e.g., Spiegel, Bloom, Kraemer, & Gottheil, 1989). Together, these studies provide support for a link between the satisfaction of belongingness needs and improved health.

Individuals may also experience psychological benefits as a result of satisfying belongingness needs. Indeed, in considering Spiegel and colleagues' findings for cancer patients, it is plausible that the improved health stemmed from the patient's increased sense of belongingness as a result of meeting as a group, which

suggests that the psychological sense of belongingness is an important factor contributing to physical outcomes. Achieving a sense of belongingness may also be associated with positive psychological responses. Supporting this possibility, Baumeister and Leary (1995) state that close personal relationships are strongly linked to overall happiness. Individuals who feel more included in social groups (and may therefore have satisfied their need to belong) also tend to report higher self-esteem (e.g., Leary, Tambor, Terdal, & Downs, 1995). Moreover, there is accumulating evidence that belongingness plays an important role in mental health outcomes such as anxiety and depression (e.g., Hagerty, Williams, Coyne, & Early, 1996) and may be a critical factor in suicidal desire (Hagerty et al., 1996; van Orden, Witte, Cukrowicz, Braithwaite, Selby, & Joiner, 2010). Together, these findings suggest that satisfying the need to belong may have a range of implications for improved psychological well-being.

Of particular interest in the current work is the possibility that satisfying the need to belong also has implications for other types of responses, such as performance and achievement. In support of this idea, Pearce and Randel (2004) examined the implications of Workplace Social Inclusion (WSI) (“the extent to which employees have informal social ties with others at work and feel as if they belong and are socially included by others in their workplace”) for employee performance and found that increased workplace social inclusion was associated with increased job performance ratings. These findings therefore suggest that increased social inclusion may lead to enhanced productivity and performance among employees.

Increased social inclusion may also have implications for enhancing academic performance. Indeed, students tend to be more academically engaged and motivated the more included they feel (Goodenow & Grady, 1993). Additionally, a child's educational achievement may be affected by moving as opposed to staying in one school district (Sackett, 1935), which suggests that children's sense of belongingness, and as a result their performance, may be impeded by entering new school districts where they do not have relationships with other students (see also Maslow, 1970).

To provide more direct evidence on the relation between belongingness and achievement, Walton and Cohen (2007) examined the implications of a belongingness intervention for minority students' academic performance. They proposed that even subtle events that signify a lack of connectedness can be detrimental for academic achievement. To try and counteract this effect, Walton and Cohen tested a treatment intervention that was designed to increase a student's sense of fit. The intervention was designed to "de-racialize objective adversity and the subjective doubts about belonging it instigates" (Walton & Cohen, 2007). In support of a link between belongingness and achievement, minority group member participants exposed to the intervention experienced an increase in achievement behavior (e.g., more time studying and more e-mails to professors) as well as actual grade point average compared to their grades prior to the intervention (Walton & Cohen, 2007).

Further supporting a link between inclusion and performance, Baumeister, Twenge, and Nuss (2002) proposed that the extent to which people feel included in

social groups may relate to their capacity for intellectual thought, and as a result, ability to perform on academic tasks. Although their work primarily addressed the question of whether social exclusion impairs intellectual thought and academic performance, they additionally proposed that the relationship between inclusion and performance may be linear in nature – that is, the more included people feel, the greater their capacity for intellectual thought and performance on a range of academic tasks. Supporting this idea, Ybarra, Burnstein, Winkielman, Keller, Manis, Chan, and Rodriguez (2010) demonstrated that people who were socially engaged for at least ten minutes displayed better cognitive performance than participants who had been engaging in “intellectual” activities, such as a reading comprehension task, crossword puzzle, and mental rotation task. Cognitive performance was measured with a “minimal exam” consisting of personal information questions (e.g. mother’s maiden name), current event questions, and a simple test of working memory (Ybarra et. al., 2010). Thus, this work provides support for the idea that strategies to increase belongingness may have implications for increasing capacity for intellectual thought and academic performance.

In considering the body of work on the implications of belongingness along with the argument that “social snacking” may provide a temporary boost to belongingness, it is possible that symbolic reminders of group membership influence people’s inclusion (i.e., extent to which they feel as if they belong), which may in turn have implications for outcomes such as academic performance. Indeed, in support of this argument, Saigh (1981, 1984) provided an intriguing demonstration

that exposure to religious symbols (e.g., a cross worn on an examiner's body) increased Christian students' performance on several widely used measures of academic performance drawn from subtests of the WISC-R, including arithmetic problems, Digit Span, picture completion, and block design relative to performance in the absence of religious symbols. Saigh (1979) argued that the presence of certain symbols might lead to an internal response of affiliation. More specifically, in subsequent work, Saigh (1984) argued that the performance increasing effect of symbol exposure (i.e., the crucifix) may have led the subjects in the study to believe the examiner was of the same faith. Although not specifically addressed in Saigh's work, one possibility is that exposure to the crucifix led participants to perceive themselves as similar to the examiner and as part of a common group. Reminding participants of a shared group membership may have promoted a sense of inclusion, and thereby improved their performance on the academic tasks.

Taken together, Saigh and colleagues' findings are consistent with the idea that exposure to symbols of group identity may influence a range of responses, including inclusion in social groups and performance. However, from Saigh's work, it is unclear whether it was exposure to the symbol itself or the affiliation implied by exposure to a person wearing the symbol that boosted the participants' performance. Thus, one goal of the present work is to clarify these findings by examining the role of mere exposure to symbols in promoting inclusion and improving academic performance. Further, despite this initial evidence that symbols have the potential to boost responses on academic tasks, the mechanism underlying this effect has not yet

been clearly articulated. Thus two important aims of the current work include examining the implications of mere exposure to symbols of group membership for inclusion and academic performance and establishing inclusion as a mediator of the effect of symbol exposure on performance.

In addition, the current work will extend prior research by examining the generalizability of these effects (i.e., whether the presence of any symbol of group membership promotes inclusion and boosts performance, or whether the effects are produced in response to particular symbols of group membership). As a preliminary investigation of whether Saigh and colleagues' effects generalize beyond the domain of religious symbols, Hamil and Butz (2010) recently examined the impact of exposure to the U.S. flag for academic performance (i.e., performance on arithmetic problems drawn from the SAT). Their work indicated that White/Caucasian participants experienced a performance boost in the presence versus the absence of the U.S. flag. In addition, they examined the extent to which participants felt included in U.S. politics and government (national inclusion) as a potential mediator of the effect of flag on performance. Although national inclusion was significantly associated with increased performance, flag exposure did not impact levels of national inclusion. These results, therefore, indicate that inclusion is associated with increased performance, however they do not support perceptions of inclusion in one's nation as a mediator of the influence of flag exposure on academic performance.

To extend this prior work, the current work will additionally employ a recently developed measure of inclusion that is not domain specific (i.e., assesses



general inclusion as opposed to national inclusion). To the extent that exposure to symbols of group membership heighten perceptions of inclusion in social groups, participants are expected to respond with increased self-reports of inclusion in the presence versus the absence of group-relevant symbols. Following Knowles and Gardner (2008), the current work will also employ a measure of inclusion that does not rely upon self-reported perceptions of the extent to which one is included. More specifically, the current work will include a word fragment completion task to assess the extent to which inclusion-relevant thoughts are automatically activated in participants. Because there is accumulating evidence that symbols may influence responses outside of conscious awareness (e.g., Butz, Plant, & Doerr, 2007; Ferguson & Hassin, 2007), this approach will allow for an examination of the extent to which thoughts and concepts related to inclusion are automatically brought to mind in the presence of symbols of group membership. I predict that participants will respond with more inclusion-relevant word completions when in the presence compared to the absence of symbols of group membership.

The present investigation will extend prior work on symbols and performance (i.e., Hamil & Butz, 2010; Saigh, 1979, 1984) by examining whether performance-enhancing effects of symbol exposure generalize to non-academic performance domains. Much of the prior work in this area has focused exclusively on the implications of symbols or inclusion for academic performance. However, Pearce and Randel's work, which established a link between inclusion in the workplace and enhanced employee job performance, included more general assessments of job

performance that presumably tap into effort and motivation in addition to more academic-relevant skills. Given Pearce and Randel's findings, I predict that exposure to symbols of group membership will increase inclusion, which will in turn increase academic and non-academic performance. To examine this possibility, the current work will examine both academic and non-academic performance in the presence versus absence of symbols of group membership.

Finally, because individuals may differ in their need to belong, the present work will include the Need to Belong Scale (Leary, Kelly, Cottrell, & Schreindorfer, 2005) to examine Need to Belong as a factor that moderates the influence of symbol exposure on inclusion and performance. Individuals high in the Need to Belong more strongly desire social acceptance and inclusion than their low Need to Belong counterparts. Drawing from findings indicating that individuals high in the Need to Belong are particularly attentive to cues that signify belongingness (e.g., Pickett et al., 2004), I predict that individuals high in the Need to Belong may be more attuned to symbols of group membership and therefore more likely to respond to such symbols with increased inclusion and performance than their low Need to Belong counterparts.

## **Method**

### **Participants and Design**

Eighty-seven participants were drawn from the Psychology department subject pool at Morehead State University and received credit toward completion of their introductory psychology course in exchange for their participation. Of these participants, 70.1% were women and 91.9% were Caucasian. Subjects were randomly

assigned to one of four symbol conditions: national symbol, school inclusion symbol, school exclusion symbol, or no symbol. Drawing from prior work (i.e., Butz, Plant, Doerr, 2007; Ferguson & Hassin, 2007; Hamil & Butz, 2010), the symbol used to remind participants of their national group membership was the U.S. flag. One's nation is one of the largest groups to which individuals can trace a sense of belonging (Worchel & Coutant, 1997). The U.S. flag is widely recognized and a prominent symbol of nationhood in the U.S., and is therefore likely to activate participants' sense of belonging in this group. Participants in the school inclusion symbol condition were exposed to a school symbol intended to remind them of their membership in a psychologically important non-national group. Toward this end, participants were exposed to a widely recognizable symbol of Morehead State University (i.e., MSU icon). To assess whether symbols of groups with which participants strongly identify have a differential effect on inclusion and performance than symbols with which participants do not strongly identify, the study additionally included a symbol of a well-known rival school, Eastern Kentucky University. I predicted that exposure to a symbol of a group for which participants do not trace a sense of belongingness would promote a sense of relative exclusion, which may in turn decrease performance relative to the other symbol conditions and the no symbol control condition.

The aforementioned symbols were pretested to ensure that they held the potential to promote inclusion or exclusion. While the current study was in the design stage, Morehead State University (MSU) was pursuing a rebranding campaign which

included the adoption of a new school icon and logo. Therefore, an additional goal of pretesting various symbols was to gain a better understanding of how the new symbol compared to the “old” symbol in terms of personal importance. Toward this aim, 16 participants completed an online survey in which they encountered national and school symbols and rated each symbol. Participants responded to the item “This symbol is personally important to me.” by providing a rating on a scale that ranged from 1 (very slightly or not at all) to 5 (extremely). Results indicated that the old MSU symbol was significantly more personally important,  $M = 3.92$ ,  $SD = 1.19$ , than the MSU symbol the school was transitioning to,  $M = 3.20$ ,  $SD = 1.42$ ,  $p < .05$ . Results also revealed that the traditional MSU symbol and the US Flag did not significantly differ in terms of personal importance,  $M = 5.00$ ,  $SD = .000$ ,  $p = .07$ . The symbol of Eastern Kentucky University (EKU) was significantly less personally important than both the old MSU symbol and the U.S. flag,  $ps < .01$ , which points to its potential to promote a sense of relative exclusion in participants.

### **Procedure**

Prior to their arrival at the laboratory each participant was randomly assigned to one of the four symbol conditions (U.S. flag, MSU symbol, ECU symbol, or no symbol). Each experimenter was instructed to wear plain clothing, void of any coincidental group symbols that may unwittingly influence participants’ state of inclusion and performance. When participants arrived at the laboratory, the experimenter recorded whether the participant had a group symbol on their person

(clothing and/or accessories), which could have primed their feelings of inclusion beyond any effects due to symbol exposure in the laboratory.

Upon arrival, each participant filled out a consent form (see Appendix A) and an initial questionnaire packet in an anteroom to the laboratory before entering the main lab room. The questionnaire packet contained basic demographics questions and the Need to Belong Scale (Leary, Kelly, Cottrell, & Schreindorfer, 2005; see Appendix B).

Participants in the symbol exposure conditions were exposed to a group symbol similar in method to Ferguson and Hassin (2007). Specifically, each symbol was placed on the cover of a three-ring binder and placed on a desk inside the main lab room. After being led into the main lab room, participants were seated at a desk where the three-ring binder had been placed in the left hand corner. This desk also had the computer the participant would need for the typing test. The symbol featured on the three-ring binder corresponded to the appropriate symbol condition (i.e., U.S. flag, MSU symbol, ECU symbol). For the no symbol condition, a plain binder was placed on the desk. The experimenter did not explicitly draw participants' attention to the binder placed on the desk.

Participants were first given 20 minutes to complete a word fragment completion task consisting of 20 word fragments, which were used to assess the automatic activation of inclusion-related concepts (see Appendix C). Participants next completed a questionnaire containing items assessing their current level of belongingness and inclusion (i.e., state inclusion, see Appendix D). Following

completion of this measure, participants were administered two performance assessments. The order of these assessments was counterbalanced across participants. To assess academic performance, participants were told that they would have 20 minutes to work through a series of math problems (Appendix E). Participants were instructed to try to solve as many problems as possible within the 20 minutes and told that they would be given verbal notification when 5 minutes remained. To assess non-academic performance, including speed and accuracy on a non-academic task, participants completed a typing test on the computer. They were instructed to read the text that appeared on screen and type the text into a box as quickly and accurately as possible. After completing the assessments of performance, participants were fully debriefed (see Appendix F), thanked for their participation, and excused.

### Measures

**Need to Belong.** Participants indicated their need to belong by responding to the 10-item Need to Belong Scale (Leary, Kelly, Cottrell, & Schreindorfer, 2005). Sample items include “I have a strong need to belong.” and “If other people don't seem to accept me, I don't let it bother me.” (Leary, Kelly, Cottrell, & Schreindorfer, 2005). Responses to these items were reverse coded where necessary and averaged to form an index of participants' need to belong such that higher scores reflect a stronger need to belong ( $\alpha = .76$ ).

**Activation of Inclusion-related Concepts.** To measure how readily available inclusion-related thoughts were to each participant, participants completed a word fragment completion task. Word fragment completion has been shown to be a

sensitive measure when it comes to measuring the accessibility of constructs, especially those that have been recently encountered (Gilbert & Hixon, 1991; Knowles & Gardner, 2008). Participants were given 12 word fragments that could be completed to form inclusion-relevant words (e.g., BE\_\_N\_ / BELONG). These critical word fragments were interspersed between six filler word fragments that could be completed to form words that were irrelevant to inclusion-related concepts (e.g., B\_\_K / BOOK). Following the approach of Knowles and Gardner (see also Troisi & Gabriel, 2011), the inclusion-relevant word completions were summed and used as a measure of the automatic activation of inclusion-relevant concepts.

**State Inclusion.** To assess participants' current state of inclusion and belongingness, participants responded to items adapted from Van Orden, Witte, Gordon, Bender, and Joiner's (2008) Interpersonal Needs Questionnaire. Sample items include "These days I feel like I belong." and "These days I feel disconnected from other people." Items were rated on a 1(not at all true for me) to 7(very true for me) scale. Scores on these items were reverse coded where necessary and averaged to form an index of state inclusion such that higher scores reflect greater inclusion. ( $\alpha = .86$ ).

**Academic Performance.** Participants were given 20 minutes to solve a series of 12 math problems (6 easy problems, 6 medium problems drawn from the SAT). The number of problems participants solved correctly was used as an index of academic performance. All math problems were taken from *Math Workbook for the*

*SAT*, where the difficulty for each problem was stated. A sample easy problem includes:

3. If  $.02p = 4$ , then  $4p =$   
(A) 0.2 (B) 2 (C) 8 (D) 40 (E) 80

A sample medium problem includes:

5. If  $x/y = 4/3$  and  $x/k = 1/2$ , then  $k/y =$   
(A)  $1/6$  (B)  $3/8$  (C)  $2/3$  (D)  $3/2$  (E)  $8/3$

Self-reported math ability was assessed by having participants respond to the items “Mathematics is very easy for me.” and “I get good grades in Mathematics.” These items were significantly correlated with each other,  $r = .53$ ,  $p < .001$ , and were averaged together to form an index of self-reported math ability with higher scores reflecting ratings of greater perceived math ability.

**Non-Academic Performance.** Participants attempted to type the following text as quickly and accurately as possible:

Do you ever send or receive e-mails? Are you on the Internet a lot? Do you go to chat rooms? Did you know there are rules of behavior for all of these? The rules are called Netiquette. (TypingMaster Typing Test)

Gross speed (words per minute) and accuracy in typing the text (computed as percent of the words typed correctly) were used as assessments of non-academic performance.



## Results

### Correlation Analyses

Using a series of correlation analyses, I examined the intercorrelations between the key continuous independent and dependent measures. As indicated in Table 1, Need to Belong scores were not significantly associated with the outcome measures (all  $r$ s < .12,  $p$ s > .29). However, participants' state belongingness scores were significantly associated with gross speed,  $r = .29, p < .01$ , such that increased belongingness was associated with greater speed on the typing test. State belongingness was not significantly associated with accuracy,  $r = -.03, p = .82$ . The number of math problems a person answered correctly was also correlated with gross speed,  $r = .23, p < .04$ , such that working faster on the typing test was associated with a higher number of correct responses on the math test. Contrary to prior work noting a speed/accuracy tradeoff (Baumeister et al., 2002; Zaal & Esther, 2005), in the current work gross speed and accuracy were significantly positively correlated,  $r = .22, p < .05$ , such that greater typing speed was associated with more accurate responses on the typing test.

### Effects of Symbol Condition

Because Hamil and Butz's (2010) findings suggested that performance-enhancing effects of U.S. flag exposure are limited to racial majority group members (White/Caucasians), preliminary analyses explored whether the effects of symbol exposure varied as a function of whether participants identified as White/Caucasian or as a racial minority group member. Specifically, a series of ANOVAs that included

the symbol condition variable and participant racial group membership (coded as majority/minority) were conducted on the key dependent measures. The results of these preliminary analyses revealed an interaction involving symbol condition and racial group status for the analysis of inclusion activation,  $F(2, 79) = 3.12, p = .05$ . To examine the nature of this interaction, I examined the influence of racial group status within each symbol condition separately. Although majority and minority group members completed a similar number of inclusion-relevant word fragments in the no symbol, MSU symbol and EKU symbol conditions, all  $F_s < 1.30, p_s > .29$ , the number of inclusion word completions for minority participants,  $M = 2.25, SD = 1.26$ , was lower than the number of inclusion word completions for majority group member participants in the U.S. flag condition,  $M = 4.11, SD = 1.57, p < .04$ . However, this difference should be interpreted with caution because there were no minority participants in the MSU symbol condition, which did not permit for a test of differences as a function of racial group status in that condition. Additionally, the number of minority and majority participants was unevenly distributed across the other experimental conditions. Additional preliminary analyses examined the possibility that factors such as participant gender and the order of the performance assessments influenced responses to the symbol conditions. There were no significant main effects or interactions involving order of the performance measures on performance scores, all  $F_s < 1.52, p_s > .21$ . There were also no significant effects of gender on the dependent measures, all  $F_s < 2.51, p_s > .06$ .

**Inclusion.** Counter to predictions, a univariate ANOVA on inclusion word completion scores did not reveal a significant effect of the symbol condition,  $F(3, 83) = 1.00, p = .40$  (see Table 2). Inspection of the data for outliers revealed that one participant was three or more standard deviations from the mean on state inclusion scores. Therefore, this participant was removed from the analysis of state inclusion. An ANOVA on state belongingness scores did not reveal a significant effect of the symbol condition,  $F(3, 82) = 1.32, p = .27$ . Thus, the activation of inclusion-relevant concepts and perceptions of inclusion did not significantly differ as a function of exposure to group symbols.

**Math Performance.** Overall, participants provided correct answers to only 37% of the math problems. As indicated in Table 2, a univariate ANOVA examining the relationship between symbol condition and the number of math problems answered correctly did not reveal a significant effect,  $F(3, 83) = .68, p = .57$ . The number of attempted math problems and the percent correct out of the number attempted was also investigated, however these analyses revealed no significant effects of symbol condition,  $F_s < 1, p_s > .59$ . Consistent with the approach used in prior work (e.g., Hamil & Butz, 2010,) I also conducted a similar analysis that included self-reported math ability as a covariate. The effect of the symbol condition remained unchanged upon including self-reported math ability as a covariate in the ANOVAs for math performance (i.e., total correct responses, number attempted, and percentage correct),  $F_s < .44, p_s > .72$ . Finally, because the current work included problems that varied in difficulty (easy and moderately difficult problems), I

examined the influence of symbol exposure on each type of problem separately. However, inspection of performance on the easy and medium difficulty problems separately revealed only the anticipated effect that participants were more successful on the easy problems,  $M = 2.54$ ,  $SD = 1.31$ , than the difficult problems,  $M = 1.86$ ,  $SD = 1.62$ ,  $p < .001$ . Participants' success on either type of problem did not vary as a function of exposure to the symbols, all  $F_s < .84$ ,  $p_s > .47$ .

**Typing Performance.** Preliminary analysis revealed three outliers that were three or more standard deviations from the mean (two in accuracy and one in gross speed). These outliers were removed for the analyses of typing performance. The analyses of typing performance yielded results similar to those reported for inclusion and math performance. Univariate ANOVAs on gross speed and accuracy revealed that neither were significantly affected by symbol condition,  $F(3, 80) = .34$ ,  $p = .80$  and  $F(3, 78) = .49$ ,  $p = .69$ , respectively (see Table 2).

### **Moderation Analyses**

Gardner and colleagues' theorizing suggests that individuals who are higher in the need to belong will be more responsive to cues of belongingness than those lower in the need to belong. To examine this possibility, I examined whether participants' need to belong scores moderated the effects of symbol condition on the dependent measures. Inspection of the data for outliers revealed that one participant was three or more standard deviations from the mean on Need to Belong Scores. Therefore, this participant was removed from analyses involving Need to Belong. Specifically, Need to Belong scores were dichotomized based upon a median split ( $Mdn = 3.10$ ) and

included as a factor along with the symbol condition variable in a series of ANOVAs on inclusion word completion scores, state belongingness scores, and the performance measures (math problem scores, and typing speed and accuracy). The results of these analyses revealed no significant interactions between Need to Belong and symbol condition for any of the dependent measures, all  $F_s < 1.40$ ,  $p_s > .25$ . Thus, these findings do not support the proposition that individuals higher in the need to belong are more responsive to symbols of group membership than their low need to belong counterparts.

### **Supplementary Analyses**

As previously mentioned, some participants reported to the laboratory wearing symbols of group membership on their apparel. Experimenters recorded this information and a dichotomous variable (symbol wearers vs. non-wearers) was created and entered as a factor in an ANOVA. This approach allowed for an examination of whether the responses to symbol exposure in the laboratory varied as a function of whether participants were naturally wearing symbols upon reporting to the laboratory. The results of this analysis revealed an effect of participant apparel on state belongingness scores,  $F(1, 78) = 8.66$ ,  $p < .01$  and a marginal effect of symbol condition on state belongingness,  $F(3, 78) = 2.18$ ,  $p = .10$ . However, these main effects were qualified by a marginal interaction between apparel and symbol condition,  $F(3, 78) = 2.50$ ,  $p = .07$ . Examining the effect of symbol exposure for symbol wearers and non-wearers revealed no significant effect for symbol non-wearers,  $F(3, 52) = .82$ ,  $p = .49$ . However, there was a marginally significant effect

of symbol exposure among participants who were wearing symbols,  $F(3, 26) = 2.55$ ,  $p = .08$ . Participants who were exposed to the EKU symbol condition,  $M = 4.89$ ,  $SD = 1.08$ , reported less belonging than participants in U.S. flag condition,  $M = 6.14$ ,  $SD = .63$ ,  $p < .02$ , and participants in the MSU symbol condition,  $M = 5.85$ ,  $SD = 1.02$ ,  $p = .05$ . Although in the same direction, participants in the EKU symbol condition did not report significantly lower levels of belonging than participants in the no symbol condition,  $M = 5.70$ ,  $SD = .89$ ,  $p = .11$ .

### Discussion

The primary goal of the present work was to replicate and expand upon prior work (e.g., Hamil & Butz, 2010; Saigh et al., 1979, 1981, 1984) by examining the implications of exposure to symbols of group membership for performance. I predicted that exposure to symbols of groups to which participants belonged (i.e., the US Flag and the MSU symbol) would automatically activate inclusion-relevant concepts and lead participants to perceive themselves as more included relative to the exclusion symbol (EKU symbol) and no symbol conditions. Additionally, I expected that the US flag and MSU symbol would increase academic and non-academic performance relative to the other condition and that the effect of symbols on performance would be mediated by belongingness.

To test these predictions, participants were either passively exposed to one of three symbols (US Flag, MSU or EKU symbol) or a no symbol control condition and completed a series of belongingness measures and performance tasks in the presence or absence of the symbols. The results of this study did not provide strong support for

the hypotheses, insofar as symbol exposure did not influence perceptions of inclusion, the automatic activation of inclusion-relevant concepts, or performance. Because it was possible that participants who were higher compared to lower in the Need to Belong would respond more strongly upon exposure to symbols of group membership, I additionally examined whether Need to Belong scores moderated the influence of symbol exposure on inclusion and performance. However, Need to Belong scores did not interact with the symbol condition to predict the outcome measures, indicating that participants high in the Need to Belong did not respond to the symbols differently than their low Need to Belong counterparts. Together, the results do not support the notion that mere exposure to group symbols influence cognitions or feelings of belongingness, nor do symbols appear to influence the types of performance assessed in the current work.

Given prior work supporting the idea that racial majority and minority group members may have differential reactions to symbols such as the U.S. flag, the racial group status of participants was treated as a factor in a series of initial analyses. Interestingly, the analysis of the activation of inclusion-relevant thoughts revealed that racial minority participants were responding with fewer inclusion-relevant completions in the U.S. flag condition than racial majority group members. Although such results must be interpreted with caution due to the uneven distribution of minority group members across the experimental conditions and the overall low number of racial minority participants, this finding is supported by prior work noting a large difference in the extent to which racial majority and minority group members

report feeling included in their nation, such that minority group members report lower levels of national inclusion than majority group members, and do not experience the same positive effects in the presence of national symbols as majority group members, including the boost in academic performance observed among White participants (e.g., Hamil & Butz, 2010). Considering this finding along with evidence that minority group members report feeling less identified with the United States than majority group members (e.g., Sidanius, Feshbach, Levin & Pratto, 1997), it stands to reason that symbols of the United States may be more closely associated with, and therefore likely to activate, inclusion among majority group members.

On an exploratory basis, supplementary analyses examined the possibility that responses to symbols of group membership depended upon whether participants were themselves wearing symbols when they reported to the laboratory. This analysis yielded an interaction between the “symbol wearing” factor and symbol exposure condition to predict state inclusion. Participants who had attire that contained some kind of symbol (MSU, Greek Life, or other schools) reported less inclusion than those who did not have symbols on their clothing when exposed to the ECU symbol in particular. It is important to note that reviewing the experimenter’s notes from these sessions revealed that none of these participants were wearing a symbol of ECU. Since these participants chose to wear clothing with symbols that were presumably important to them, it may suggest that personal characteristics such as the psychological importance of symbols of identity, or the motivation to display one’s



identity through symbols may be individual differences that determine responses in the presence of symbols of group membership.

Although the results obtained from this study did not provide strong support for inclusion as a mediator of the influence of symbols on performance, there was some evidence that state inclusion was related to speed of performance. Specifically, participants with higher state inclusion scores were typing faster than individuals lower in state inclusion. This result is consistent with prior work reporting a positive association between workplace social inclusion and supervisor-rated job performance (Pearce & Randel, 2004), although speed of performance is likely to be just one of several factors that the “job performance” construct includes. Additionally, speed of performance was not significantly negatively correlated with accuracy, suggesting that faster performance did not lead to a tradeoff in accuracy as has been documented in prior work (e.g., Zaal & Esther, 2005). It is important to consider, however, that the faster typists may also be more proficient in typing and have more practice and experience with these types of tasks, which may explain why increased speed did not significantly detract from accuracy on this task. Interestingly, other work examining the link between inclusion and performance also did not provide support for a speed-accuracy tradeoff, insofar as social exclusion decreased both speed and accuracy on a cognitive task (e.g., Baumeister et al., 2002). Thus, considering the current findings along with Baumeister and colleagues’ finding, to the extent that feeling included promotes faster responding on typing assessments, such increased speed may not necessitate decreased accuracy.

The present work did not provide strong evidence on the potential for symbol exposure to influence different types of performance, however it did indicate that exposure to symbols of group membership may influence inclusion for some individuals, particularly those who are naturally inclined to wear symbols of group membership. More generally, the findings suggesting that some individuals may respond with decreased inclusion in the presence of symbols that are not personally relevant to them is consistent with a growing body of work indicating that exposure to symbols of group membership may shape psychological and behavioral responses. Indeed, there is accumulating evidence that individuals may be influenced by exposure to symbols even outside of their conscious awareness (e.g., Butz et al., 2007; Ferguson & Hassin, 2007; Weisbuch, Mendes, Seery, & Blascovich, 2005). Moreover, this evidence suggests that not all exposure to symbols may result in positive responses. Ferguson and Hassin (2007), for example, showed that individuals who frequently watched the U.S. news and were subliminally primed with American cues (i.e., the U.S. flag) exhibited greater cognitive accessibility of aggression and war related thoughts, and judged ambiguous people more aggressively than those who were not primed with American cues. Participants exposed to these cues also acted more aggressive toward the experimenter following provocation compared to participants who were not exposed to cues. This evidence suggests that exposure to symbols associated with negative concepts may automatically activate these concepts and, in turn, facilitate relatively negative behavioral responses in some individuals.

Recent research also speaks to the potential for negative self-oriented consequences of exposure to group-relevant symbols. For example, Fryberg, Markus, Oyserman, and Stone (2008) showed that school symbols, such as mascots, can have a negative effect on a student's sense of personal worth. More specifically their research demonstrated that an American Indian mascot can have negative consequences on the self-esteem, community worth, and achievement-oriented possible selves (i.e., striving to earn good grades, find a job, or earn a degree) for American Indian students. Although inclusion and belongingness were not assessed in their work, the pattern of findings is consistent with the idea that exposure to American Indian mascots may promote a sense of relative exclusion among individuals caricatured by the symbol. The authors suggest that the American media does not provide many positive representations of American Indians, which may contribute to a host of negative psychological responses when members of these groups encounter symbols of their group membership. Thus, although the current work provides evidence that symbols of low personal relevance and related to groups to which people do not belong (such as a symbol of a rival school) can decrease one's sense of belonging, it is also possible that symbols highly representative of one's group membership may have similarly negative psychological effects.

Finally, there is evidence that the context in which symbols are presented may determine their implications for some types of performance. Weisbuch and colleagues (2005) examined the psychological impact of exposure to religious stimuli and found that exposure to Christian symbols in a negative context (e.g., images of satanic

worship and demons) caused participants who were speaking about their own death to respond with a cardiovascular pattern resembling a higher degree of threat than those who were exposed to positive Christian symbols (e.g., images of Christ ascending into heaven). Further research indicated that these symbols were only resulting in this effect for Christian participants. Together, these findings suggest that factors such as the context in which symbols appear and the personal importance of symbols may determine the nature and degree of response in the presence of the symbol and may therefore be important moderators to consider in future work.

### **Limitations and Future Directions**

Given the lack of support for the primary hypotheses, it is important to consider potential limitations of the design and procedure of the study. One limitation concerns the manner in which exposure to symbols was manipulated. Previous studies have shown that even subtle or unconscious exposure to symbols can have a strong effect on the perceivers of such symbols (e.g. Butz et al., 2007; Ferguson & Hassin, 2007; Weisbuch et. al., 2005), however the current work provided only limited support for that proposition. While in previous work the symbol exposure may have been subtle or even unconscious, symbols were still located in the direct visual path of the participant. In the current work the symbol was not only subtle but exposure most likely occurred as a result of participants noticing the symbol through their peripheral vision. For future work it may be crucial to locate symbols directly in participants' line of sight. This can be accomplished by either placing the symbol directly in front of the participant, such as in Butz et al., 2007, or by placing the

symbol on the computer screen for a computer based task. The effect of symbol exposure may also be enhanced by efforts to consciously draw participants' attention to the relevant symbol.

Also, as previously stated, the procedure employed in the current work exposed participants to symbols largely devoid of context in order to separate effects of mere exposure to symbols from the context in which they are presented. However, given Weisbuch and colleagues' assertion that the context in which symbols are presented may dramatically shape people's responses to these symbols, future work may examine the context in which symbols are presented as a potential factor that influences inclusion (and thereby performance). Perhaps future studies need to reexamine how participants are exposed to each symbol and potentially expose participants to a symbol within a particular context. For example, Saigh's consistent finding that religious symbols displayed on an individual enhance performance suggests that it may be key for the symbols to be attached to a person to promote a sense of inclusion and enhance performance. As the personal importance of symbols also influences the degree to which individuals respond to symbols, future work could examine the implications of symbols that are likely to be particularly important to participants, such as photos of family members or friends, or personally chosen symbols. The high psychological importance of such symbols may increase the degree to which exposure to these symbols promotes a sense of inclusion, and thereby enhance performance.

An additional issue with the study could be in the set of problems that were chosen for the academic performance section. Although I selected problems that were of varying levels of difficulty (both easy and moderately difficult), the only effect involving level of difficulty was the logical finding that participants were more successful on the easier compared to the moderately difficult problems. Symbol exposure did not significantly influence performance on either the easy or moderately difficult problems, suggesting that the difficulty of the problems participants attempted may not be the primary issue in explaining the lack of effect of symbol exposure. However, in this study, as in previous studies conducted in other areas of the country (i.e., Hamil & Butz, 2010), the math problems were drawn from the SAT. In the state of Kentucky students are tested with the ACT for college admission and not the SAT (Kentucky Home Education Association). Whether the two tests differ in terms of difficulty has not been clarified, however participants' relatively poor performance on the SAT problems in the current study, which may have led to a floor effect, may be attributable to lack of experience with this type of assessment. Thus, in future work it may be important to expose participants to types of problems for which they are likely to have previous experience solving, such as problems drawn from the ACT, as such problems may be more inclined to introduce variability in participants' responses and be sensitive to the symbol manipulation.

Because the current findings suggest that responses to symbols of group membership may depend upon factors such as whether people wear symbolic displays of their identity, future work should attempt to uncover the psychological factors

underlying such responses. In other words, future work may attempt to clarify the psychological factors that underlie whether individuals choose to display symbols of their symbolic identity. Beyond assessing such factors, future work should address whether individuals higher in this dimension respond more strongly upon exposure to a symbol of group identity. Future work may also examine such constructs and responses to symbols of group membership in younger adolescents and college freshmen (as opposed to a more heterogeneous sample of college-age participants), as displaying one's symbolic identity with the goal of "fitting in" with one's peers may be a particularly strong motivation among adolescents (e.g., Kernaleguen, 1980).

### **Practical Implications**

The current work adds to the growing literature on the consequences of exposure to symbols (e.g. Hamil & Butz, 2010; Ferguson & Hassin, 2007; Saigh, 1979, 1981; Weisbuch et al., 2005), the importance of which is underscored by the fact that people are constantly exposed to symbols on a daily basis. Environments in which people are likely to encounter symbols include companies, schools, and sporting events. However on a more individual level, it is also important to consider that many individuals choose to wear or display personally important symbols as they navigate their environments. The current work suggests that responses to symbols may vary across individuals, insofar as Whites may respond with more thoughts about inclusion and belongingness in the presence of the U.S. flag than minority group members, and individuals who wear symbolic displays of their identity may respond with less inclusion upon encountering a symbol of exclusion compared to

individuals who choose not to wear symbols of their identity. Thus, in deciding whether symbols should be displayed in an environment it is important to consider the possibility of variability in response to symbols and the possibility that some responses may be relatively negative, as illustrated by Fryberg et al.'s work. Indeed, recent controversy over displays of symbols such as the Confederate flag (e.g., Reksulak, Karahan, & Shughart, 2007; Schramm-Pate & Lussier, 2003) and the dramatically different meanings of this symbol speak to the issue of divergent responses to symbols and their potential divisiveness.

Given these possibilities, along with evidence that the context in which people are exposed to symbols influences their responses to them, it stands to reason that symbols should be used wisely and the context for their display should be carefully considered. Because achieving a sense of belongingness has a host of positive consequences, including increased psychological well-being (Leary et al., 1995; Hagerty et al., 1996; van Orden et al., 2010) and increased academic success (Walton & Cohen, 2007), it is important to identify symbols and corresponding contexts that promote a sense of inclusion in all individuals. For example, situations similar to Saigh's work where performance enhancements occurred after exposure to a person wearing a symbol of a common religious identity demonstrates the potential for symbols to promote a sense of inclusion among a majority, if not all, of the perceivers of such symbols.



### Conclusions

The present work demonstrates that exposure to symbols can influence the extent to which people are thinking about inclusion and the extent to which they are perceiving themselves as socially included, however not all individuals are influenced by symbols. Building upon prior findings, the current work provides additional evidence that racial majority and minority group members' responses to the U.S. flag diverge. The present work also provides initial evidence that responses to symbols of group membership may vary as a function of whether people are "symbol wearers," which may stem from psychological characteristics such as placing importance on symbolic displays of identity or the motivation to display or "advertise" one's affiliations. Additionally, the present work provides evidence for the potential benefits of inclusion, in that increased inclusion was associated with faster, but not less accurate performance on a typing test. Together, the present findings add to the growing literature on the psychological consequences of exposure to symbols of group membership, highlight the variability in responses to symbols of group membership, and provide direction for future research on symbols that promote inclusion in all individuals and may thereby have positive implications for increasing performance.

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Table 1

*Intercorrelations Between Measures*

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>
1. Need to Belong	-							
2. Inclusion Words	-.01	-						
3. State Belonging	-.04	.04	-					
4. Math Score	.08	-.02	-.05	-				
5. Problems Attempted	.11	.04	.08	-.01	-			
6. Percent Correct	.05	-.03	-.09	.98**	-.18	-		
7. Gross Speed	.12	-.19	.29*	.23*	.11	.20	-	
8. Accuracy	.02	.06	-.03	.12	-.00	.13	.31**	-

\*\*Correlation is significant at the 0.01 level.

\*Correlation is significant at the 0.05 level.



Table 2

*Means and Standard Deviations as a Function of Symbol Condition*

	<u>No Symbol</u>		<u>US Flag</u>		<u>MSU</u>		<u>EKU</u>		<i>F</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Need to Belong	3.21	.12	3.21	.12	3.18	.12	3.19	.12	.02	1.00
Inclusion Words	4.62	.35	3.77	.35	4.09	.35	4.23	.35	1.00	.40
State Belonging	6.19	.19	6.04	.19	6.08	.19	5.68	.19	1.32	.27
Math Score	4.43	.54	4.32	.52	4.96	.52	3.91	.52	.68	.57
Problems Attempted	11.76	.18	11.64	.18	11.68	.18	11.68	.18	.08	.97
Percent Correct	.38	.05	.37	.05	.43	.05	.34	.05	.63	.60
Gross Speed	42.80	2.76	42.81	2.69	40.14	2.63	40.05	2.69	.34	.80
Accuracy	91.43	1.37	92.71	1.37	93.38	1.37	93.58	1.44	.49	.69

Appendix A  
**Consent Form**

Department of Psychology  
Morehead State University  
Morehead, KY  
(606) 783-2981

**INFORMED CONSENT STATEMENT:**

“Mood and Performance”

This research is being conducted by David A. Butz and Kristi Hamil in the Psychology department at Morehead State University. You must be at least 18 years of age in order to participate. As part of this project, you will be asked to respond to various survey questions concerning your current feelings and overall mood. You will also be completing a few measures of different kinds of performance.

The time commitment today will be about one hour. You will receive one (1) credit toward your Introduction to Psychology class research requirement for today's participation.

Your participation is completely voluntary and you may stop participation at any time. You are free not to answer specific items or questions, or to complete any part of the process. If you decide to stop your participation today you will not be penalized. You may choose to do something else for credit in your psychology class in consultation with your instructor.

Your responses today will remain confidential to the extent allowed by law. Your name will not appear on any of the results. No individual responses will be reported. Only group findings will be reported. We are required by law to report to the proper authorities any information that a person under the age of 18 is being abused or neglected by a family member, and/or that physical abuse has occurred between married persons. Aside from those cases, only members of the research team will have access to your responses. Data will be kept in a locked filing cabinet in Reed Hall on the campus of Morehead State University

Participating in this research is not expected to pose more than minimal risk. This study has been reviewed to determine that it poses little or no threat to participants, and there appear to be minimal risks or discomfort associated with completing any part of the study. Your responses on the surveys and study instruments will be assigned a random identification number to ensure that your responses remain completely anonymous and cannot be tied back

to your name. Your instructor will be notified of your participation in order to assign course credit, however he/she will not have access to any of your responses from the study.

If you choose to continue with today's study you will be providing researchers with valuable knowledge about the factors that influence a person's performance.

You may contact Dr. David A. Butz, in the Psychology department (606) 783 – 2313 or Kristi Hamil, a research assistant, ([kjhamil@moreheadstate.edu](mailto:kjhamil@moreheadstate.edu)) if you have any questions about the project, either now or later. If you feel discomfort because of your participation in the study, you are encouraged to contact Dr. David Butz, the MSU Counseling and Health Services Center (112 Allie Young, 606-783-2123) or Pathways, Inc. in Morehead (606-784-4161).

-----  
I have read and understood the explanation of the study and agree to participate. I understand that by signing and dating this form I have given my consent to participate in the study.

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

Appendix B  
Initial Questionnaire Packet  
(Demographics, Need to Belong scale)

Race: White/Caucasian African American Hispanic Asian American

Other: \_\_\_\_\_

Sex: Male Female

Age: \_\_\_\_\_

Classification: Freshman Sophomore Junior Senior

**Instructions:** For each of the statements below, indicate the degree to which you agree or disagree with the statement by writing a number in the space beside the question using the scale below:

- 1 = Strongly disagree
- 2 = Moderately disagree
- 3 = Neither agree nor disagree
- 4 = Moderately agree
- 5 = Strongly agree

- \_\_\_\_\_ 1. If other people don't seem to accept me, I don't let it bother me.
- \_\_\_\_\_ 2. I try hard not to do things that will make other people avoid or reject me.
- \_\_\_\_\_ 3. I seldom worry about whether other people care about me.
- \_\_\_\_\_ 4. I need to feel that there are people I can turn to in times of need.
- \_\_\_\_\_ 5. I want other people to accept me.
- \_\_\_\_\_ 6. I do not like being alone.
- \_\_\_\_\_ 7. Being apart from my friends for long periods of time does not bother me.
- \_\_\_\_\_ 8. I have a strong need to belong.
- \_\_\_\_\_ 9. It bothers me a great deal when I am not included in other people's plans.
- \_\_\_\_\_ 10. My feelings are easily hurt when I feel that others do not accept me.

Appendix C  
Word Fragment Completion Task

- \*1. BE \_\_ N \_ (belong, begins, beyond)
  2. \_ OO \_ (book, foot, root)
  - \*3. CON \_\_\_ TED (connected, convicted, conducted)
  4. D \_\_ K (dark, deck, dock)
  - \*5. G \_ OU \_ (group, grout, ghoul)
  6. AL \_\_\_ (alone, allow)
  7. STA \_\_\_ (staples, stares, stamps)
  - \*8. \_ OIN (join, coin, loin)
  - \*9. IN \_ L \_\_ ED (included, inflamed, inflated)
  - \*10. AT \_ AC \_\_ D (attached, attacked, attained)
  11. EX \_\_ U \_\_ (exclude, execute, exhaust)
  12. CLO \_\_ (clock, clown, close)
  13. WIN \_\_\_ (winter, winner)
  - \*14. CO \_\_ E \_ T \_\_ E (collective, congestive, conjecture, corrective)
  - \*15. CL \_ B (club, clot)
  16. PA \_\_\_ (panic, party)
  - \*17. \_\_\_ LY (family, merely)
  - \*18. ME \_\_\_ (member, mental)
  - \*19. TE \_\_ (team, tent)
  - \*20. \_\_ ION (onion, union)
- \* Denotes inclusion relevant word.

Appendix D  
Interpersonal Needs Questionnaire

The following questions ask you to think about yourself and other people. Please respond to each question by using your own current beliefs and experiences, NOT what you think is true in general, or what might be true for other people. Please base your responses on how you've been feeling recently. Use the rating scale to find the number that best matches how you feel and circle that number. There are no right or wrong answers: we are interested in what *you* think and feel.

- | 1                            | 2   | 3   | 4                       | 5 | 6 | 7                   |  |
|------------------------------|-----|---|-------------------------|---|---|---------------------|--|
| Not at all<br>true for<br>me |     |   | Somewhat<br>true for me |   |   | Very True<br>for me |  |
| _____                        | 1.  | These days the people in my life would be better off if I were gone.        |                         |   |   |                     |  |
| _____                        | 2.  | These days the people in my life would be happier without me.               |                         |   |   |                     |  |
| _____                        | 3.  | These days I think I have failed the people in my life.                     |                         |   |   |                     |  |
| _____                        | 4.  | These days I think I am a burden on society.                                |                         |   |   |                     |  |
| _____                        | 5.  | These days I think I contribute to the well-being of the people in my life. |                         |   |   |                     |  |
| _____                        | 6.  | These days I feel like a burden on the people in my life.                   |                         |   |   |                     |  |
| _____                        | 7.  | These days I think the people in my life wish they could be rid of me.      |                         |   |   |                     |  |
| _____                        | 8.  | These days I think I make things worse for the people in my life.           |                         |   |   |                     |  |
| _____                        | 9.  | These days I think I matter to the people in my life.                       |                         |   |   |                     |  |
| _____                        | 10. | These days, other people care about me. *                                   |                         |   |   |                     |  |
| _____                        | 11. | These days, I feel like I belong.*  |                         |   |   |                     |  |
| _____                        | 12. | These days, I rarely interact with people who care about me. *              |                         |   |   |                     |  |
| _____                        | 13. | These days, I am fortunate to have many caring and supportive friends. *    |                         |   |   |                     |  |
| _____                        | 14. | These days, I feel disconnected from other people. *                        |                         |   |   |                     |  |
| _____                        | 15. | These days, I often feel like an outsider in social gatherings. *           |                         |   |   |                     |  |
| _____                        | 16. | These days, I feel that there are people I can turn to in times of need. *  |                         |   |   |                     |  |
| _____                        | 17. | These days, I am close to other people. *                                   |                         |   |   |                     |  |
| _____                        | 18. | These days, I have at least one satisfying interaction every day. *         |                         |   |   |                     |  |

\* Denotes item on belongingness subscale

Appendix E  
Math problems

1. If  $x^2 + 5x + 6/x + 2 = 12$ , then  $x =$   
(A) -2 (B) 2 (C) 3 (D) 6 (E) 9
2. Boris ate  $1/2$  a pizza on Monday and  $2/3$  of the remainder on Tuesday. What fractional part of the pizza was left?  
(A)  $3/5$  (B)  $1/3$  (C)  $1/4$  (D)  $1/6$  (E)  $1/12$
3. If  $.02p = 4$ , then  $4p =$   
(A) 0.2 (B) 2 (C) 8 (D) 40 (E) 80
4. If  $(3x)^2 = 81$ , then  $x =$   
(A) 2 (B) 3 (C) 6 (D) 9 (E) 12
5. If  $x/y = 4/3$  and  $x/k = 1/2$ , then  $k/y =$   
(A)  $1/6$  (B)  $3/8$  (C)  $2/3$  (D)  $3/2$  (E)  $8/3$
6. A certain list contains 11 consecutive multiples of 3. The first number is 21, what is the middle number?  
(A) 26 (B) 27 (C) 36 (D) 39 (E) 51
7. If  $x$  is a positive integer greater than 1, and  $x(x+4)$  is odd, then  $x$  must be  
(A) even (B) odd (C) prime (D) a factor of 8 (E) divisible by 8
8. If  $3x/5 = x + 2/3$ , what is the value of  $x$ ?  
(A)  $1/2$  (B) 1 (C) 2 (D)  $2\frac{1}{2}$  (E) 3
9. If  $5/x = y/10$  and  $x - y = y$ , then  $y + x =$   
(A) 5 (B) 10 (C) 15 (D) 25 (E) 50
10. The average of 3 numbers is 22, and the smallest of these numbers is 2. If the other two numbers are equal, each of them is  
(A) 22 (B) 30 (C) 32 (D) 40 (E) 64
11. Mathias looks up at a certain time of day and sees that the sun is at an angle of 32 degrees with the horizon. If Mathias is approximately 6 feet tall, how long is his shadow?  
(A) 3.2 feet (B) 3.7 feet (C) 5.1 feet (D) 9.6 feet (E) 12.0 feet
12. Dan, Laura, and Jane went grocery shopping. Dan spent three times as much as Laura and half as much as Jane. If they spent a total of \$50 on groceries, how much did Jane spend?  
(A) \$15 (B) \$20 (C) \$25 (D) \$30 (E) \$45

## Appendix F Debriefing Form

Many studies have demonstrated a connection between symbol exposure and performance. Additionally, there is increasing evidence that a heightened sense of inclusion can lead to increases in performance on a variety of tasks. The main goal of this study is to integrate these prior findings and investigate whether the effects of symbols on performance are due to symbols influencing people's feelings of inclusion in groups. We believe that when you are exposed to a symbol of a group to which you belong to it will promote feelings of inclusion and thus increase performance. Therefore, some participants were either exposed to a group symbol such as the U.S. flag or a school symbol, such as a prominent symbol of MSU. Participants in a control condition were not exposed to any symbol. During the session, you responded to a questionnaire that assessed your self-reported feelings of inclusion. We were also interested in the possibility that exposure to symbols of group membership would unconsciously activate feelings of inclusion and concepts related to group membership. The word fragment completion task you filled out contained several word fragments that could be completed with words related to group membership and belongingness. By examining the frequency of group and belongingness-relevant word completions, we will be able to assess the extent to which symbols increase the activation of thoughts related to groups and belongingness. After completing these assessments, we had you complete a variety of performance tasks, including a series of math problems and a typing test. After the study has concluded, we will be examining whether participants in the symbol conditions performed better than those in the no symbol condition, and importantly, whether the performance boost was related to feelings of inclusion in the presence of the symbols.

I would like to ask you to not say anything about this study to anyone else. If you discuss this study with others, then their responses in the study would be influenced by what you told them. I hope you can see why it is important that you don't tell anyone about this study. If anyone asks you about the experiment, we ask you tell them that it was a study involving performance and that you were asked not to discuss it further.

We greatly appreciate your participation in this study. You may contact Dr. David A. Butz, in the Psychology department (606) 783 – 2313 or Kristi Hamil, a research assistant, ([kjhamil@moreheadstate.edu](mailto:kjhamil@moreheadstate.edu)) if you have any questions about the project, either now or later. If you feel discomfort because of your participation in the study, you are encouraged to contact Dr. David Butz, the MSU Counseling and Health Services Center (112 Allie Young, 606-783-2123) or Pathways, Inc. in Morehead (606-784-4161).



To learn more about previous work on the effect of inclusion and symbols on performance, you may consult the following literature, which are available in the Camden-Carroll Library.

Baumeister, R.F., & Leary, M.R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, 117, 497-529.

Gardner, W. L., Pickett, C. L., Knowles, M. (2005). Social snacking and shielding: Using social symbols, selves, and surrogates in the service of belonging needs. In K.D. Williams, J.P. Forgas, & W. von Hippel (Eds.), *The social outcast: Ostracism, social exclusion, rejection, and bullying. Sydney Symposium of Social Psychology series* (pp. 227-241). New York: Psychology Press.