

## COMBINING OBSERVATIONAL AND SURVEY METHODS TO INVESTIGATE COALITIONAL PSYCHOLOGY: REQUEST COMPLIANCE AND TEAM LOYALTY

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### ABSTRACT

*Ingroup loyalty and inter-group competition are important aspects of behavior in humans and other social species. This study investigates the influence of ingroup/outgroup affiliation on compliance with small requests from strangers as well as conceptions of group loyalty as unilateral within a set of competitors. The study context is a prominent rivalry between two American football teams at flagship public universities in neighbouring states, with settings in the home territory of one university and a metropolitan area where loyalties are divided between the two teams. The observational component of the study (N = 513) demonstrated that pedestrians in the home city of one team were more likely to participate in a survey when the soliciting confederate was wearing apparel from the home university than when wearing apparel from the rival university. In the area where team loyalties were evenly divided, there was no difference in survey participation by university apparel condition and participation rates were higher overall. The survey component (N = 158) revealed that participants' loyalties to these rival teams were inversely related, and few participants expressed a high degree of loyalty to both teams. On the other hand, a larger proportion of participants than expected believed that someone could support both teams in a rivalry. The most popular reason given for dual affiliation was having family members who attended each school, consistent with previous results indicating that kinship may be more important than group loyalty. Other responses indicated both appropriate and inappropriate reasons for mixed loyalty. These results were inconsistent with the participants' own expressions of team loyalty, which supported the notion of team loyalty as unilateral within a set of rivals.*

**Keywords:** Coalitional Psychology, Compliance, Survey, Loyalty, Behavioral observation

## INTRODUCTION

This study investigates how group affiliation and territorial setting affects compliance with requests for participation in a brief survey. The methods combine observational and survey methods to explore coalitional psychology and related behavior in the context of a university sports team rivalry. Previous research demonstrated that survey requests from unconventional social outgroups have lower rates of compliance (Glick, Demorest, and Hotze, 1988). Male undergraduates participating in a psychology experiment were more likely to offer help to a (confederate) jogger who fell when the jogger was wearing the jersey of their favored team than when wearing the jersey of the rival team or a generic jersey (Levine, Prosser, Evans, and Reicher, 2005). Study participants have endorsed the notion that true team loyalty is unilateral within a set of competitors and an individual's degrees of loyalty to two rival teams are inversely related (Kruger, 2019; Kruger et al., 2019). The current study combines aspects of these previous studies to advance understanding of coalitional dynamics.

Ingroup loyalty and intergroup competition are prominent behavioral themes across social species (van der Dennen, 2002). In our close relatives, the common chimpanzees, small coalitions of related males cooperate for social dominance over other male coalitions within communities (Mitani, Merriwether, and Zhang, 2000). At a larger scale, community groups hold territories that they protect from rival groups. Male coalitions engage in territorial boundary patrols and intergroup raiding, and engage in aggressive displays when encountering outgroup members, which they may even kill if they have a numerical advantage (Goodall, 1990; Mitani and Watts, 2001). Our own ancestors achieved ecological dominance over other species, after which competition with other hominid groups may have been the greatest selection pressure (Alexander, 1979).

Humans are likely to possess coalition-detection mechanisms that are sensitive to indicators of alliances (Kurzban and Leary, 2001). Social psychologists have extensively documented features of our evolved coalitional psychology, including using superficial categorization criteria to differentiate of individuals into groups (Sherif, 1966; Wetherell, 1982), deep emotional attachments to recently created ingroups (Brewer, 1979; Ostrom and Sedikides, 1992; Tajfel and Turner, 1979), and coalitional biases favoring ingroups and disfavoring outgroups (see Ruffle and Sosis, 2006). Competitions which exhibit characteristics relevant to warfare, such as visual symbols of group identification and benefits following success, may encourage individuals to ally with a particular group or team (Winegard and Deaner, 2010).

### ***Team sports affiliation and coalitional psychology***

Contemporary team sports and sports fandom exhibit many features of intergroup competition and ingroup loyalty related to our evolved coalitional psychology (Kruger, Wang, and Wilke, 2007; van der Dennen, 2002; Winegard and Deaner, 2010). Team sport activities resemble those of territorial raiding (Scalise Sugiyama, Mendoza, and White, 2016; Winegard and Deaner, 2010), and the motor skills involved in actual forager warfare are utilized in team games played by men in contemporary foraging tribes (Scalise Sugiyama et al., 2016). Adaptations related to forming and maintaining coalitions for small-scale warfare may also account for interest in following sports teams

(Winegard and Deaner, 2010). Sports fans may receive psychological benefits from the outcomes of contests even when they do not materially benefit (Deaner, Balish, and Lombardo, 2016). One benefit is feelings of social connectedness, especially when one's favored team wins (Wann, 2006). After a team win, fans are more likely to wear team branded apparel (Cialdini et al., 1976). Clothing and other paraphernalia displaying team names and logos communicate team affiliation (End, Dietz-Uhler, Harrick, and Jacquemotte, 2002). These team identifiers may activate coalitional psychology, both for the wearer and observers (Kurzban and Leary, 2001; Schaller, Park, and Faulkner, 2003). Thus, dynamics related to team sports affiliations is a suitable domain to investigate coalitional psychology and behavior.

### ***Social similarity and compliance***

As mentioned above, there is considerable documentation of coalitional biases favoring ingroups and disfavoring outgroups (see Ruffle and Sosis, 2006). Thus, individuals may be more likely to comply with a request from a perceived ingroup member than from a perceived outgroup member. In Petty and Cacioppo's (1986) Elaboration Likelihood Model, a very popular framework for understanding social influence, shared group membership with a source is considered an automatic heuristic cue that increases the persuasiveness of a message. In previous field research, community members were more likely to comply with a request to take a brief survey when a female confederate was dressed in conventional clothing than when she was dressed in "punk rock" clothing, makeup, and jewelry (Glick, Demorest, and Hotze, 1988). Independent raters judged the "punk rock" confederate to be less similar to the local population than the conventionally dressed confederate, and also less trustworthy, more threatening, and more likely to commit violent crimes. Participants' self-reported anxiety was higher for the "punk rock" confederate than for the conventionally dressed confederate, and higher anxiety was associated with lower compliance (Glick, Demorest, and Hotze, 1988).

Another field study found that well-dressed confederates were more likely to successfully request a dime (equivalent to 29 US cents in 2020) to make a phone call compared to poorly dressed confederates at an airport, however poorly dressed confederates were more successful than well-dressed confederates at a bus station (Hensley, 1981). These results indicate that confederates wearing attire suggesting social similarity may be more effective in obtaining compliance to small requests. In these studies, the manipulation was framed as utilizing confederates resembling ingroup and outgroup members, however it is not known the extent to which these appearances reflect coherent groups, especially groups which are in competition with each other. Other studies on persuasion have classified other individuals as ingroup or outgroup members based on similar (e.g., road safety should be improved) or dissimilar (e.g., the sale and consumption of alcohol should be prohibited) beliefs (e.g., McGarty, Haslam, Hutchinson, and Turner, 1994). Thus, it would be valuable to examine persuasion and compliance with clearly defined and highly salient ingroups and outgroups, such as supporters of one of two teams in a fierce regional sport rivalry.

Affiliation with one team in a fierce regional sport rivalry has previously been examined in relation to bystander helping (Levine, Prosser, Evans, and Reicher, 2005). Male undergraduates participating in a Psychology Department experiment encountered a jogger who fell over and shouted in presumed pain. All participants were pre-selected

as fans of a prominent English European football team and their identities as fans was made salient by completing a survey on the topic in the first part of the study. Participants were more likely to spontaneously offer help when the confederate was wearing the jersey of their favored team, versus the jersey of the rival team or a generic jersey (Levine et al., 2005). In a second study, participants showed equivalent helping rates for confederates wearing the jersey of either rival team, and had higher rates of helping compared to when the confederate was wearing a generic jersey, when a broader identity of being a football fan was made salient during the first part of the study.

### ***Current Study***

In order to properly examine evolved coalitional psychology and behavior related to intergroup competition, it is important to utilize members or affiliates of groups that are clearly in competition with each other. Competing sports teams, and especially teams with an established rivalry, may be particularly useful for examining coalitional effects. The current study was conducted in the context of the University of Michigan – Ohio State University’s National Collegiate Athletic Association Division 1 football rivalry, which was ranked the greatest North American sports rivalry by the Entertainment and Sports Programming Network (ESPN). “The Game,” as many fans know the annual match between these schools, is held at the end of the regular Big Ten Conference season. This match takes place on the weekend of the American Thanksgiving holiday, facilitating a large broadcast audience. Concordance in team affiliation is expected to influence the persuasiveness of a small request.

Sports team loyalties often have a territorial component (Richardson and O’Dwyer, 2003), consistent with ancestral between-group competitions (Winegard and Deaner, 2010). Michigan and Ohio are neighboring states which had a historical territorial dispute over the Toledo area that was the largest U.S. inter-state conflict prior to the Civil War. Both Ohio State University and the University of Michigan are the flagship public universities of their respective states and are each other’s primary athletic rivals. Although in Ohio, Toledo is geographically closer to Ann Arbor, MI (home of the University of Michigan), than to Columbus, OH (home of the Ohio State University). Conventional wisdom holds that team loyalties are divided among local residents, sometimes even within the same household. Merchandise featuring each school is widely available in the Toledo area and stores typically display Ohio State and Michigan items adjacently. Recent observational studies found similar proportions of community members wearing Ohio State University and University of Michigan branded merchandise (Falbo et al., 2018; Kruger and Kruger, 2015). Thus, a confederate is expected to be equally likely to elicit compliance when wearing merchandise from either of these teams in the Toledo area. In contrast, a confederate is expected to be more effective in eliciting compliance when wearing University of Michigan branded merchandise than Ohio State University branded merchandise when in Ann Arbor, MI, the home of the University of Michigan.

The observational component of this study was complemented by a survey component, designed to replicate and extend previous findings examining the notion that group or team loyalty is unilateral within a set of competitions. A previous observational study found that a confederate provoked more attention and reactions from others in a naturalistic public setting in Toledo when simultaneously wearing

apparel featuring both universities than when wearing equivalent apparel featuring only one of the universities (Kruger et al., 2019). Separate survey studies found general explicit agreement with the notion that group or team loyalty is unilateral within a set of competitions. Survey participants viewing an image of a confederate wearing apparel featuring both universities had similar levels of anger and disgust as those viewing an image of the same confederate wearing consistent rival branded merchandise, as well as substantially higher levels of confusion (Kruger, 2019; Kruger et al., 2019). Reactions to a commercial advertisement on social media suggesting mixed team loyalty further bolstered evidence for conceptions of team loyalty as unilateral (Kruger et al., 2019).

### ***Hypotheses***

The term “subjects” refers to all individuals solicited by the confederate, whether or not they agreed to take the survey. The term “participants” refers to all individuals who agreed to take the survey, whether they completed the survey or not. Our central hypothesis is that congruent team affiliation between confederate and target will be associated with higher rates of compliance with survey participation.

1. Subjects will be more likely to agree to participate in the survey when they are wearing university related apparel with the same university on apparel worn by the confederate, compared to subjects not wearing this apparel.
2. Subjects will be less likely to agree to participate in the survey when they are wearing apparel for the rival university of the university on apparel worn by the confederate, compared to subjects not wearing this apparel.
3. Subjects observed in the home state of the university on apparel worn by the confederate will be more likely to agree to participate in the survey, even when not displaying any university apparel.
4. The distribution of survey participant responses to the university loyalty items (survey items 6 and 7) will vary. When participants are assigned into quadrants based on scale values (low loyalty: 0-40% and high loyalty: 50%-100%), the mutual high loyalty (50%-100% UM and 50%-100% OSU) quadrant will contain fewer participants than either the 50%-100% UM/0-40% OSU or 50%-100% OSU/0-40% quadrants. For participants who rate loyalty to one university as high, there will be a 4:1 or greater ratio of those who rate loyalty to the other university as low to those who rate loyalty to the other university as high.
5. Survey participant responses to the university loyalty items will be inversely associated, higher loyalty scores for one university will predict lower loyalty scores for the other university.
6. Survey participants will tend to (80% or more) believe that someone cannot be loyal to both the University of Michigan and Ohio State University.

## METHODS

### *Participants*

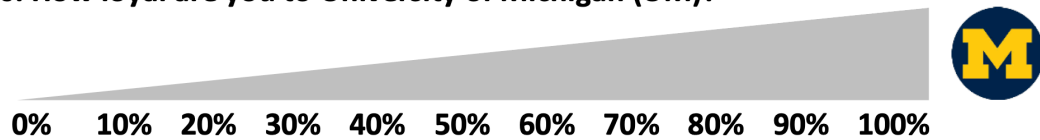
This study combines observational and survey methods to investigate dynamics related to coalitional psychology in the context of a university sport team rivalry. The study hypotheses, methods, and analyses were pre-registered with the Open Science Framework [<https://osf.io/t5h3q/>]. The research team conducted 28 survey solicitation observations during the Fall 2018 and Fall 2019 National Collegiate Athletic Association's football seasons, when team affiliations may be most salient. There were 14 observation sessions conducted in 2018, from 12 October to 3 November, between 10:00 AM and 5:30 PM. Six observations were in Ann Arbor, Michigan and eight were in the Toledo, Ohio Metropolitan Statistical Area. There were 14 observation sessions conducted in 2019, from 27 September to 1 November, between 9:00 AM and 5:30 PM. Three observations were in Michigan and 11 were in the Toledo MSA. Most observations were conducted on Fridays, before a football game played by either or both teams on the following Saturday.

The research team went to public places where pedestrians were expected, in downtown business district areas with a high density of shops and restaurants. No observations were conducted on university campuses. An undergraduate male research team member (confederate) wore clothing displaying the names and/or logos of the University of Michigan or Ohio State University. Conditions and order were randomly assigned with a coin toss, with observations in at least two locations (Ann Arbor, MI; Toledo, OH; Bowling Green, OH) each day. Order of locations was rotated across times of the day. The confederate had a one-page survey on a clipboard and asked approaching adults, "Hello, would you mind taking a quick survey?" The other research team members (observers) recorded subject demographics and relevant study information but did not initiate interactions with subjects. Observers documented subject gender, approximate age (18-25, 26-64, 65+), any university or sports team related apparel worn by subject, whether or not subject reacts to confederate attire, the content of these reactions, subject's response to the confederate (agrees to take survey; refuses to take survey; does not respond), and any additional observer notes relevant to the study. Observers were not informed on experimental hypotheses. In 2018, this information was recorded on paper notepads. In 2019 this information was recorded via a smartphone application in the Qualtrics survey platform.

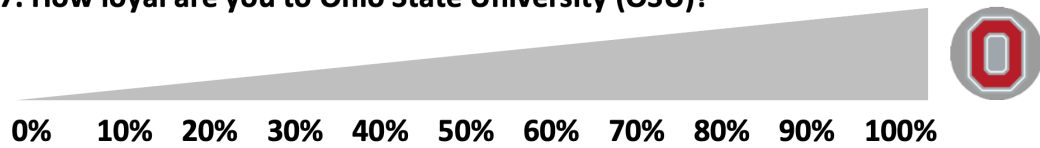
The participant survey contained items on one side of one page. Items included: 1. What is your age in years?; 2. What is your gender?; 3. What ZIP Code do you live in now?; 4. What ZIP Codes have you lived in before?; 5. How often do you watch college sports games? (response options: Never, Rarely, Sometimes, Fairly Often, Very Often); 6. How loyal are you to Ohio State University (OSU)? (response options: 0%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100%). These items featured triangles reflecting the numerical proportions for each response option (See Figure 1); 7. How loyal are you to University of Michigan (UM)?; 8. Can someone be loyal to both UM and OSU? (response options: No, Yes, Don't Know); 9. Why or why not? Items 6 and 7 included a circular icon with the university logos ("Block M" Michigan, "Buckeye O") in traditional font and colors as a scale anchor after the 100% response option. University (UM and OSU) item order was counterbalanced across survey forms. An item was added after

these items in the 2019 survey, “You can only support one side (at the most) in a rivalry.” (response options: Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree).

**6. How loyal are you to University of Michigan (UM)?**



**7. How loyal are you to Ohio State University (OSU)?**



**Figure 1:** Survey items assessing loyalty to rival universities.

**Analysis**

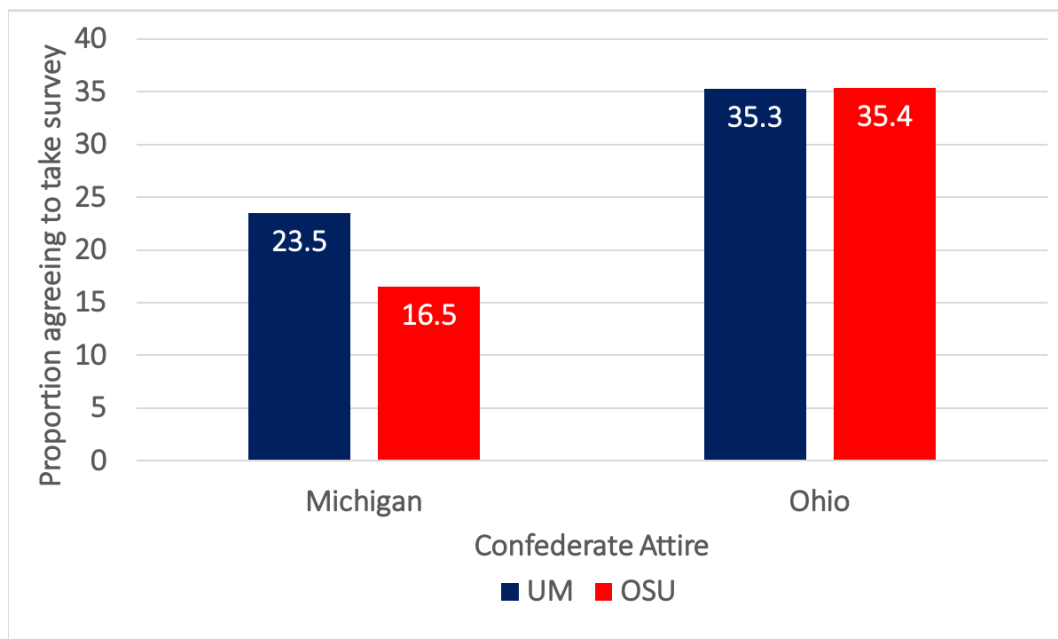
Chi-square tests examined whether there was a difference in the likelihood of participation for those who matched the confederate in university apparel (H1), whether there was a difference in the likelihood of participation for those who wore the rival university apparel to that of the confederate (H2), and whether those observed in the home state of the university on apparel worn by the confederate, when not displaying any university on apparel, were more likely to participate in the survey (H3). Log-linear analyses tested whether the proportion of participants expressing high loyalty to both teams was smaller than the proportions of participants expressing high loyalty to one team and low loyalty to the other team (H4). A Pearson correlation of responses to loyalty survey items (6 and 7, Figure 1) tested whether loyalty ratings for the rival universities were inversely related (H5). Descriptive statistics examined whether 80% or more of participants believed that someone cannot be loyal to both the University of Michigan and Ohio State University (H6).

Additional post-hoc analyses included an examination of subjects' reactions to the confederate's attire by location, content analysis of verbal reactions, predictions of responses to the unilateral loyalty items by team loyalty and frequency of watching college sports games, and geographical comparisons. Initial discussions of research design included observations in Columbus, OH, the site of Ohio State University, and the possibility of examining results based on a geographical gradient between Ann Arbor, MI and Columbus, OH. The research team did not conduct these observations due to research team time constraints, and a trip to Columbus would require a minimum of 7 hours driving time and additional time for observations and meals.

## RESULTS

There were 513 individuals (subjects) approached by the confederate and coded by observers; 51% women, 49% men; 25% appeared 18-25 years of age, 63% appeared 26-64 years of age, and 12% appeared 65+ years of age; 44% were observed in Michigan (Ann Arbor) and 56% were observed in the Toledo, Ohio, metropolitan area (34% in Toledo, 22% in Bowling Green). The confederate was wearing Ohio State University apparel for 54% of subject observations and University of Michigan apparel for 46% of subject observations.

Overall, 5% of subjects were wearing University of Michigan apparel, 1% of subjects were wearing Ohio State University apparel, and 5.1% were wearing apparel from another university or team. In Michigan, 7% of subjects were wearing University of Michigan apparel and one subject was wearing Ohio State University apparel. In the Toledo MSA, 2% were wearing apparel from each university. A total of 158 individuals agreed to participate in the survey (31% of subjects). Survey participants were 54% women, 46% men; 44 years of age on average ( $SD = 18$ ); 32% were in Michigan (Ann Arbor) and 68% were in the Toledo, Ohio, metropolitan area (44% in Toledo, 24% in Bowling Green).

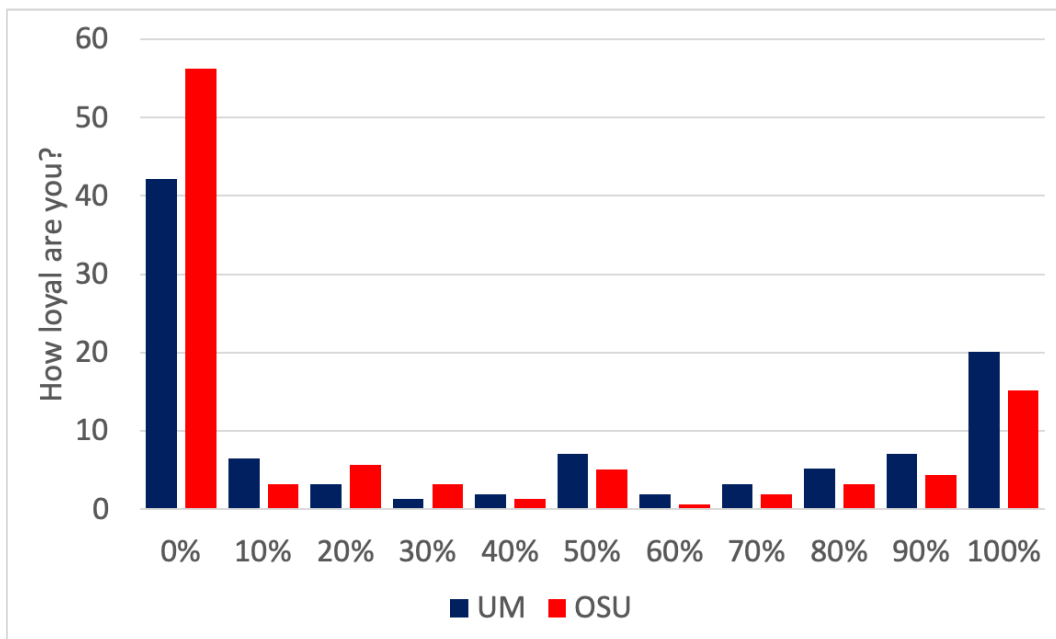


**Figure 2:** Interaction of location and participant attire on agreement to participate in survey.

H1 was not supported; there was no difference in the likelihood of participation for those who matched the confederate in university apparel,  $\chi^2_{(1)} = 0.28, p = .596$ . There were only 21 subjects who wore matching apparel. H2 was not supported; there was no difference in the likelihood of participation for those who wore the rival university apparel to that of the confederate,  $\chi^2_{(1)} = 1.08, p = .300$ . There were only 12 subjects who



wore apparel from the rival team. H3 was supported; subjects in Michigan were more likely to participate in the survey when the confederate was wearing University of Michigan apparel, there was no difference in participation rates based on confederate attire in the Toledo, Ohio, metropolitan area (See Figure 2). This was confirmed both for subjects who were not displaying any university apparel,  $G^2_{(4)} = 20.13$ ,  $p < .001$ , and all subjects,  $G^2_{(4)} = 21.15$ ,  $p < .001$ . H4 was supported; for those who indicated high loyalty to one university, there were 93 participants who rated low loyalty to the rival university and 22 participants who rated high loyalty to the rival university. Overall, 60% (95% CI: 53-68%) had high loyalty to one school and low loyalty to the rival school, 7% (95% CI: 3-11%) had high loyalty to both schools, and 32% (95% CI: 25-40%) had low loyalty to both schools. H5 was supported; loyalty ratings for the rival universities were inversely related,  $r(154) = -.367$ ,  $p < .001$ . Loyalty distributions were bimodal for both schools (See Figure 3). H6 was not supported; 52.5% thought that someone could be loyal to both UM and OSU (95% CI: 45-60%), 40.5% did not think that someone could be loyal to both UM and OSU (95% CI: 33-48%), and 7.0% did not know (95% CI: 3-11%).



**Figure 3:** Bimodal distribution of loyalty of survey participants to rival universities.

There was a distribution of responses to the more general loyalty item, “You can only support one side (at the most) in a rivalry,” with 25% Strongly Agree, 20% Agree, 6% Neutral, 33% Disagree, and 16% Strongly Disagree. Classification of open-ended responses among those who thought that someone could be loyal to both UM and OSU identified several common themes. The largest number of participants (21) suggested that someone could have family members who attended each school; 8 suggested that someone could have attended or worked at both schools; 6 stated that someone could root for each team separately but not when they played each other; 5 mentioned that Michigan was geographically close or that both schools were in the same region; 4

suggested that one could root for “Big Ten” conference teams, especially when they play a team from another conference, 3 suggested that someone could support individuals on each team (who are sometimes recruited from the rival state). Others expressed a lack of interest in sports (5) or made remarks inconsistent with their responses to the previous question, e.g., “You have to pick one or the other,” or suggesting that someone could have loyalty to both teams but there would be something psychologically wrong with that person.

Additional results from post-hoc analyses complemented the predictions. Overall, 6% of subjects reacted to the confederate’s attire. There was a location by condition interaction in the likelihood of these reactions,  $G^2_{(4)} = 21.15, p < .001$ . Subjects in the Toledo MSA were not significantly more likely to react to UM attire (4%) than OSU attire (2%),  $\chi^2_{(1)} = 1.62, p = .204$ . Subjects in Michigan were more likely to react to OSU attire (17%) than to UM attire (2%),  $\chi^2_{(1)} = 19.75, p < .001$ . Most of these reactions were verbal, e.g., “your wearing the wrong shirt,” “Don’t get killed,” “You can’t wear that sweatshirt,” and “You realize you’re in Michigan, right?” A few others pointed at, stared at, or gave a dirty look to the confederate. Several subjects explicitly refused to take the survey because of the confederate’s attire. Observers noted a young child asking, “Why is he wearing that? We’re in Michigan.” One passerby remarked “social experiment.” No subjects interacted with, or seemed to notice, observers in any of the sessions.

Survey participant responses to the university loyalty items (6 and 7) predicted responses to “You can only support one side (at the most) in a rivalry,” for both OSU loyalty,  $r(49) = .286, p = .046$ , and UM loyalty,  $r(49) = .364, p = .014$ . OSU loyalty,  $t(145) = 0.75, p = .454$ , and UM loyalty,  $t(141) = 1.21, p = .228$ , did not predict Yes/No responses to the item asking if someone could be loyal to both UM and OSU. Those who watched college sport games more often reported higher loyalty to OSU,  $r(158) = .262, p < .001$ , higher loyalty to UM,  $r(154) = .288, p < .001$ , had higher agreement that someone can only support one side in a rivalry,  $r(49) = .550, p < .001$ , and were more likely to think that someone could not be loyal to both UM and OSU,  $t(145) = 3.05, p < .003$ .

Bowling Green, OH was included as an observation location based on the original study conception of examining results along a geographical gradient. Although Bowling Green is part of the Toledo, Ohio Metropolitan Statistical Area, it is home to Bowling Green State University which may enroll students from a broader geographical area. Ohio residents outside of the Toledo MSA are expected to be less favorable to the University of Michigan and more favorable to Ohio State University. One-way ANOVAs with Tukey B post-hoc comparisons examined team loyalty by observation location. Participants in Ann Arbor expressed higher team loyalty to the University of Michigan than in the other two locations,  $F(2,155) = 24.25, p < .001, d = 1.18$ , however participants in Bowling Green and Toledo did not differ ( $d = .23$ ) in loyalty to the University of Michigan. Participants in Ohio expressed higher team loyalty to Ohio State University than those in Ann Arbor,  $F(2,155) = 15.18, p < .001, d = 0.93$ , however participants in Bowling Green and Toledo did not differ ( $d = .13$ ) in loyalty to Ohio State University. This supported the decision to combine data from Bowling Green and Toledo into the Toledo MSA location condition.

## DISCUSSION

The results provide moderate support for an ingroup/outgroup influence on compliance with a survey participation request from a stranger as well as conceptions of group loyalty as unilateral within a set of competitors. Subjects were equally likely to participate in the survey in Ohio State University and University of Michigan apparel conditions in the Toledo area, where levels of support for these teams are similar. In fact, an identical proportion of subjects were observed wearing apparel or merchandise from each of these schools. Responses from survey participants indicated equivalent levels of loyalty to these teams as well. Subjects were more likely to participate in the survey in Ann Arbor when the confederate was wearing apparel from the home university than when wearing apparel from the rival university. As expected, survey participants' average reported levels of loyalty to the University of Michigan were considerably higher in Ann Arbor than in the Toledo area.

Participation agreement rates were generally lower in Ann Arbor than in the Toledo area. Ann Arbor is an affluent and gentrified college town with a highly pedestrianized downtown area. Those living in or visiting Ann Arbor see many other pedestrians and are frequently solicited by people asking for money (whether for some charitable cause or personal use) or marketing some type of business or service. Thus, pedestrians in Ann Arbor may be more likely to "tune out" solicitations from strangers on the street due to saturation with such requests. The pedestrian density was lower in Ohio, especially in Toledo. Twice as many observation sessions were needed in Ohio to generate an adequate sample of observational subjects. Despite a total of 28 survey solicitation observations, the sample sizes of individuals wearing apparel from either university were likely too small for adequate tests of H1 and H2. The proportion of individuals observed wearing university branded apparel would likely be higher on the university campus.

It is also possible that compliance was higher in the Toledo area because of the community divide in loyalty to the rival teams. This area resembles a territory that is contested between supporters of each team, and thus team affiliation is more salient than in the home territory of one team, where team support is generally assumed. Compiling with a survey request may be interpreted as aiding an ingroup member. In a previous observational study, pedestrians wearing University of Michigan branded merchandise responded more enthusiastically to confederate expressions of allegiance to the team in the Toledo area than in Ann Arbor (Kruger et al., 2018).

Survey results extended support for the notion of group team allegiance as unilateral within a set of competitors. Data from the new survey items indicated that loyalties to rival teams are inversely related. The distribution of team loyalty followed a bimodal pattern for both teams, where 0% loyalty was the most common response and 100% loyalty was the second most common response. There may be a third minor peak at 50% loyalty, where the number of responses was higher than the next two adjacent values in either direction. Participants selecting this option may have been expressing indifference, similar to the neutral center option in a rating scale.

Responses to the agreement unilateral loyalty items did not follow the predicted patterns. This result was puzzling, especially as it was inconsistent with the participants own self-reported loyalty levels. The unilateral loyalty items were framed in the third and second person, "Can someone be loyal to both UM and OSU?," and "You can only

support one side (at the most) in a rivalry,” whereas the individual team loyalty items were framed in the first person. Participants open ended responses indicated both appropriate and inappropriate (from the perspective of the participant) reasons why someone could have mixed loyalty. The most common explanation was someone who had family members who attended each school, consistent with previous results indicating that kinship may outweigh group loyalty (Kruger et al., 2019). The second most popular explanation was that someone could have attended or worked at both schools, differentiating the reality of academic and career trajectories from athletic team rivalries. Several other responses noted the proximity of both schools (especially for the Toledo area), thus both could loosely be considered “home” teams. Other responses made reference to competition with other teams, suggesting that someone could support each of the teams when playing against other competitors. Some participants remarked that someone could support both teams, but this would indicate that something was wrong with that person. Results were also inconsistent with previous research (Kruger et al., 2019), though the question was framed differently, “When there are two competing groups or teams, you can be loyal to only one of the teams.”

Overall, these results provided moderate support for the notion that team loyalty is unilateral within a set of competitors and affiliations with rival teams are inversely related. The methods more directly implement ingroup and outgroup contexts where the groups are clearly defined and in opposition to each other than in previous research on survey participation requests. Building on previous research on observational studies of team affiliation effects on helping, the current study provides higher experimental realism and ecological validity than previous research conducting with undergraduates in the context of a psychology experiment, as it utilizes a naturalistic sample of adults encountered as pedestrians in business districts.

### ***Limitations***

Several factors limited the strength of evidence in the current study. As mentioned above, the sample sizes of subjects wearing rival university apparel were inadequate for testing H1 and H2. The likelihood of compliance by confederate apparel condition and location followed the expected pattern, though ideally the study would also have included observations in Columbus, Ohio, home of the Ohio State University. This would have required a two-day trip, which was not feasible for the research team. Most observations were conducted on Fridays, which was largely due to research team availability, but may have made team affiliation more salient as it was the day before games were held. However, this limited recruitment in Toledo as the University of Toledo does not hold classes on Fridays, on other weekdays there is a greater abundance of pedestrians.

### ***Conclusions***

This study provides moderate support for ingroup favoritism in compliance with requests for small favors. The combination of survey data with behavioral observations provided convergent evidence in support of hypotheses and study assumptions. The study also demonstrates the utility of contemporary sports team rivalries to test hypotheses regarding evolved coalitional psychology and behavior.

## ETHICAL STATEMENT

These studies were approved by for Health Sciences and Behavioral Sciences at the University of Michigan [HUM00138194].

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