TACIT COORDINATION: THE PROFILE OF A COORDINATOR

by

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Abstract

Tacit coordination requires people to coordinate their decisions without communicating with one another. Existing research has explored the strategies of coordination, indicating how people make decisions in these scenarios; however, little research links individual differences to coordination success (de Kwaadsteniet & van Dijk, 2012). This research seeks to identify the demographic and personality variables that predict tacit coordination ability.

These three studies serve as an exploration into multiple factors that were suspected to influence coordination success. Demographic variables including gender, age, and romantic relationship status, as well as personality components including rational explanatory style, and social value orientation were measured in conjunction with coordination performance (Pacini & Epstein, 1999; van Lange, Otten, de Bruin, & Joireman, 1997).

Participants were given a series of 20 coordination questions. They were told that they would be randomly paired with another participant upon the conclusion of the study and that successful coordination with their partners would be rewarded.

Study 1 was conducted with undergraduate students who completed the study online, Study 2 with participants recruited from Amazon’s MTurk who participated online, and Study 3 with students who participated in the laboratory.

Results of Study 1 indicate that women (M = 34.19, SD = 4.55) performed better on the coordination task than men (M = 31.20, SD = 5.60); t(78) = 2.55, p = .013. Results of Study 2 indicate that age (r = .297, p < .01) and rational explanatory style (r = .263, p < .01) are positively correlated to coordination success. These results reveal individual difference factors that may predict tacit coordination success; however, further research is needed to confirm these findings.
Tacit Coordination: The Profile of a Coordinator

Every day, people are faced with decisions in which they are also dependent upon the decisions of others (Thibaut & Kelley, 1959). Tacit coordination falls within this realm of interdependent decision making as it involves getting people to coordinate their decisions without communicating with one another. This involves getting people to predict the behavior of one or more other people and responding in either the same or a different way (Abele & Stasser, 2008).

People face tacit coordination scenarios in their everyday lives. Oftentimes, two or more people need to arrive at the same decision. Where should two people meet up in a large city, and at what time? In this situation, coordination requires both people to make the exact same decisions as one another and necessitates matching for success. Sometimes, tacit coordination scenarios require that two people select different options. If two people are living together, who should feed the dog, and who should take out the trash? In this case, it is not necessary or possible for both people to feed the dog or to take out the trash, so successful mismatching becomes critical (Abele & Stasser, 2008).

The tacit coordination scenarios can be open ended in which there are nearly an unlimited number of options for one to select from. When selecting a restaurant to meet a partner for a date, there are likely a variety of establishments to choose from and coordination becomes more difficult as the probability of randomly coordinating successfully decreases. Tacit coordination scenarios can also be forced choice in which there are given options that one must select between. For example, “should I take the highway or backroads if trying to avoid traffic and arrive at my destination quickly?” In this case, there are only two routes that one must decide between.
Worth noting is that, tacit coordination has interpersonal consequences, in addition to the consequences that stem from successful matching or mismatching in real world scenarios. Abele and Stasser (2008) found that successful coordination in dyads was linked to a more positive perception of coordination partners. In this study, better performance on a coordination task meant that participants rated their partners as being more similar to themselves, as being smarter, and as being more pleasant. They also reported a greater overall liking for their partner. These findings show just how critical successful coordination can be in people’s lives (Abele & Stasser, 2008).

Thomas Schelling spearheaded tacit coordination research via his proposal of what he termed “tacit bargaining” in his 1960 book about game theory entitled The Strategy of Conflict. He details this concept as any situation in which communication is incomplete or impossible in which individuals must anticipate the actions of others and respond either competitively or cooperatively. Schelling discusses limited war as those situations in which people do not have common interests and are competing with one another with each fighting for an advantage. He discusses tacit coordination, on the other hand, as those situations in which people have common interests and must identify appropriate actions depending on shared knowledge of the situation and the other individuals. Schelling gives many anecdotal examples of coordination scenarios including a husband and wife who become separated in a department store and must meet back up without any method of contacting each other as well as two military parachutists who have been dropped apart from each other and must meet up to ensure a successful rescue.

Because people in tacit coordination scenarios cannot simply determine the best course of action by discussing possible outcomes with one another, the goal is to eliminate ambiguity so that all involved will maximize their potential benefit. Successful coordination is possible so as
long as everyone involved is confident that the others are also trying to coordinate action.

Schelling notes that tacit coordination requires more than simply “predicting” what others will do, but that it involves predicting what the other person will predict (and so on). In the quest to eliminate ambiguity, those in tacit coordination scenarios utilize focal points to aid them in their decision making processes. Focal points must be unique, as uniqueness conveys prominence. When these prominent choices are selected, coordination success becomes far more likely.

Schelling tested his ideas about tacit bargaining by asking his dinner party guests to provide answers to the coordination scenarios he had come up with. He found that people’s responses to these casual experiments provided support for his theories; however they had never been tested empirically.

The emerging question was the extent to which Schelling’s observations were representative of people’s general ability to successfully coordinate with others. This led to Mehta, Starmer, and Sugden’s (1994) efforts to scientifically test Schelling’s ideas. Their goals were to find empirical evidence for tacit coordination as well as to explain why people are able to coordinate their decisions with those of others. In other words, the researchers wanted to find that the use of focal points help ensure successful coordination. They had also identified primary salience, secondary salience, and Schelling salience as the methods people use for finding these focal points.

First of all, in coordination dilemmas, salience refers to the things that are more cognitively available and are therefore the most prominent options. People using primary salience in coordination scenarios would simply select options in alignment with their own personal preferences. When asked coordination questions, primary salience is utilized when one
provides an answer that is personally salient, but may not be salient for one’s partner(s). For example, when asked to name any year, one may give his or her birth year.

Those using secondary salience in the same situations would select options that they believe would be primarily salient for the other party. When asked coordination questions, secondary salience is utilized when one provides an answer that they feel is salient for one’s partners. When asked to name a year, one may give the other person’s birth year, for example.

Schelling salience is an extension of secondary salience and suggests that, in coordination scenarios there is a “rule of selection” which suggests that in given coordination scenarios, there is often an option that stands out above the rest as being a reliable solution. Essential to Schelling salience is the knowledge that one is participating in a coordination dilemma. These “winning” items become salient because people are aware that coordination is the end goal. For example, Schelling says that, when asked to give any number, a wide variety of responses will be given. However, in a coordination task, the number one becomes salient as it is the least ambiguous, and therefore the easiest consensus for the group to arrive upon.

To test these ideas of coordination, Mehta, Starmer, and Sugden had participants play coordination games in two different conditions: one with instructions of coordination who were told that their reward was dependent upon their ability to match an unknown partner, and the other with instructions to respond however they wished. Items on the coordination task ranged from open-ended questions such as “Name any flower.” and “Complete the sentence. A coin was tossed. It came down ________.” to a series of abstract drawings of arrays of shapes on a grid with participants asked to pair various circles with two different squares on the grid, to a final series of circles divided by various lines with participants asked to divide each circle by retracing one of the given lines. Coordination performance for each condition was indicated
using a coordination index, a count of the frequency of each response for each of the twenty questions in the task. Results of the study indicate that, as hypothesized, the group instructed to coordinate had a higher coordination index for every single question than the group that was told to respond however they wished. This study provided essential empirical support to Schelling’s early ideas of tacit coordination.

In addition to the different levels of salience that contribute to varying levels of coordination success, research on tacit coordination was also focused on how people use available social information to help them make coordination decisions. Abele, Stasser, and Chartier (2014) found that, in coordination scenarios, people search for focal points that stand out above other options when making their coordination decisions. They found that knowledge of similarity with a partner in coordination tasks facilitates successful matching, meaning that when people are aware of the things they have in common, they use this social knowledge to create focal points to rely upon. This finding also extends to mismatching coordination tasks; the researchers found that when people are aware of dissimilarity with a partner, this helps to facilitate successful mismatching (Abele, Stasser, & Chartier, 2014).

Extending this research on the use of similarity in tacit coordination scenarios, Chartier and Abele (2015) studied coordination in dyads of romantic partners versus strangers. In this study, half of the participants were paired with their significant others to complete a 25-item coordination task requiring both matching and mismatching, while the other half of participants were paired with a stranger (although both members of the stranger pairing were in a romantic relationship) to complete the same task. They found that the dyads of romantic couples performed better on the matching items than did the dyads of strangers. They found no
difference between the two groups in terms of mismatching performance (Chartier & Abele, 2015).

Despite these results, no research has compared the coordination success of singles versus those in romantic relationships, as all of the participants in Chartier and Abele’s study were currently in a relationship. With this being said, the present research examines relationship status as an individual difference measure as a variable influencing tacit coordination success. It is suspected that those in romantic relationships will perform better than single people as they are naturally more accustomed to coordination scenarios that arise from being part of a romantic couple.

Existing tacit coordination research emphasizes which coordination strategies (employing secondary and Schelling salience, or searching for focal points, for example) people should employ in order to maximize their coordination success. This research proposes theories and methods for aiding all people in their collective coordination performance, getting them to perform better than chance in various coordination tasks as an entire sample (de Kwaadsteniet & van Dijk, 2012). Research on these successful coordination strategies takes the perspective of the many as opposed to the perspective of the individual.

It is worth noting, however, that some people may be naturally better at coordination tasks than others. They may possess certain traits or characteristics that allow them to implement coordination strategies more easily than others. Virtually no research has been conducted on what differentiates “strong coordinators” from “weak coordinators”. By gaining insight into the personality or demographic variables responsible for this gap in performance, it is possible to create a “profile” of a coordinator: an overview of the specific individual characteristics that make people naturally better coordinators than others. The present studies explore these various
individual difference factors, personality and demographic, in relation to success in tacit coordination tasks.

As an exploratory study, several personality measures have been chosen to evaluate in comparison to coordination performance with the goal being that certain traits would stand out in relation to tacit coordination success, thus indicating that some people may be inherently better at these types of tasks than others. Several demographic variables were considered in this regard as well.

The Big Five personality traits (openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism) were the first selected for exploration in the context of tacit coordination as they are personality measures widely studied in the field of psychology (Rammstedt & John, 2007). Of particular importance are conscientiousness and agreeableness. With conscientiousness, it is hypothesized that those high in conscientiousness would also score highly in coordination tasks as those who are self-disciplined and highly motivated to complete tasks thoroughly and as successfully as possible will naturally select items that coordinate with a majority of others. In other words, those with a strong conscientious personality trait are expected to resort to secondary and Schelling salience as an intentional coordination strategy.

With agreeableness, it is hypothesized that those high in agreeableness will show a greater coordination performance as they are naturally inclined to act cooperatively and in the best interests of others. Those testing highly for the trait are expected to excel in using secondary salience to accurately predict how others will respond to tacit coordination scenarios.

Next, locus of control was selected to measure in relation to tacit coordination performance (Kovaleva, 2012). The prediction for this personality measure is that those with an internal locus of control will perform better on tacit coordination tasks than those with an
external locus of control. Those with an internal locus of control will be driven to take personal responsibility for ensuring success in tacit coordination tasks, and will therefore intentionally and diligently make coordination decisions. Those with an external locus of control, on the other hand, may feel that they have little control over their success due to the impossibility of predicting with one hundred percent certainty how one will respond to given coordination items, therefore leading them to exert less time and effort on tacit coordination tasks.

The next trait selected to analyze alongside tacit coordination performance was empathy. Research has found that, especially in close relationships, people are motivated to understand the thoughts and feelings of others. This motivation creates empathic accuracy and allows people in these close relationships to more consistently identify what the other person is thinking and feeling (Ickes, 1993). Extending this idea of empathic accuracy into the realm of tacit coordination where communication becomes limited or removed altogether, it is hypothesized that those scoring highly in empathic abilities will also perform well on given coordination tasks as they possess an inherent capacity to understand the needs of others. This will allow them to more easily find success in using secondary salience as they are more prone to be aware of how others may think or behave.

The final personality measure selected for study in comparison to coordination performance is explanatory style, in particular, rationality. The Rational-Experiential Inventory is used to determine this as it reliably and accurately tests people’s tendencies to process information both rationally and experientially, in addition to the ease they have in adopting either of these two styles and their frequency in doing so (Pacini & Epstein, 1999).

Rational explanatory style has been shown to predict people’s coping and adjustment abilities, meaning that, when faced with these scenarios, those who think more rationally, show
better coping and adjustment skills (Pacini & Epstein, 1999). It is expected that those testing highly in the area of rational explanatory style will perform better on tacit coordination tasks as opposed to those testing at lower levels for this style. This is hypothesized with the expectation that those who think and act rationally by default will be immediately inclined to select options in tacit coordination scenarios that logically maximize their opportunities for success. In other words, their rational personality traits may lead them to ask themselves logical questions to aid in their decision making such as, “What type of flower would the average person select?”, or “Do more people prefer the beach or the pool?”

The demographic questions selected for use in this research are basic, however, they may provide some relevant insight into the question of whether a true profile of one who excels in tacit coordination tasks can be developed. Of the demographic factors surveyed, it is predicted that age, birth order status, and romantic relationship status will be significant predictors of success in tacit coordination scenarios. It is expected that older people have encountered more instances requiring the use of coordination in their lifetimes than have younger people because they are more likely to have used tacit coordination in the workplace or in various relationships over the years.

In families, younger siblings may have familiarity with anticipating the preferences of their older brothers or sisters during childhood, giving them more experience with coordination early on in their lives. Romantic relationships offer many opportunities for couples to coordinate their decisions, (for example planning date nights and managing household responsibilities for cohabitating couples) which may indicate that people in relationships may be more familiar with coordination dilemmas than people who are single. In short, it is hypothesized that older people, middle or youngest children, and people in romantic relationships have more experience with
real world tacit coordination scenarios than do people who do not identify with these respective groups. This previous experience with coordination is hypothesized to reflect tacit coordination success in the laboratory setting.

Study1
Method

Participants

Participants were 80 undergraduate students from a Midwestern university enrolled in introductory psychology classes completing the study for course credit. 26 were male and 54 were female. The average age was 18.58 with a standard deviation of .74. Fifty-four participants were freshmen, 20 were sophomores, and 6 were juniors. Five participants indicated that they were only children, 33 indicated that they were the oldest child in their families, 19 indicated that they were middle children, and 23 indicated that they were youngest children. Forty-one participants indicated their romantic relationship status as single, 6 indicated that they were dating casually, and 33 indicated that they were dating exclusively.

Materials

To measure tacit coordination performance, participants completed a tacit coordination exercise (see Appendix A) consisting of twenty items from Chartier and Abele’s (2015) study of tacit coordination in dyads. Thirteen of the items were open ended questions in which participants could respond to the questions in any way they wished. Some examples of open-ended questions include “name any flower,” “name any music genre,” and “name any car manufacturer.” The other seven items were forced choice matching questions in which participants had to choose between two given options. Some examples of forced choice
questions include “choose one: eating a home-cooked meal or eating in a restaurant”, choose one: motorcycle or convertible”, and “a coin was flipped, choose one: heads or tails”.

Participants completed a series of personality measures. First was the BFI-10, a short form version of the Big Five Personality Inventory (see Appendix B). This measure is a ten item questionnaire with a five degree Likert scale with two questions for each Big Five trait (Rammstedt & John, 2007). Next was the IE-4, a short form measure of locus of control (see Appendix C). This assessment consists of four questions on a five degree Likert scale to indicate an internal or external locus of control (Kovaleva, 2012). Next was the cognitive subscale from the BES-A, the Empathy Scale in Adults (see Appendix D). The BES-A is a twenty item questionnaire on a five degree Likert scale and is broken down into the eleven item affective empathy subscale and the nine item cognitive empathy subscale (Carré, Stefaniak, D'Ambrosio, Bensalah & Besche-Richard, 2013). Finally was the rational ability subscale from the REI, the Rational-Experiential Inventory (see Appendix E). The REI is a forty item questionnaire on a five degree Likert scale with the following ten item subscales: rational ability, rational engagement, experiential ability, and experiential engagement (Pacini & Epstein, 1999).

Procedure

Participants completed the experiment as an online survey (via SurveyMonkey), outside of the lab setting and on their own time. After providing consent, they completed the coordination task outlined above. They were told that they would be randomly paired with another participant in the study and were instructed that they would earn one entry into a lottery for a $20 gift card for every question on which both members of the pair provided the same answer. The gift card lottery served the purpose of making sure participants took the task seriously.
Next, participants completed a brief demographic questionnaire (see Appendix G), providing information on gender, age, birth order, romantic relationship status, year in college, and major. Participants then answered the personality measures outlined above. There were a total of 33 questions from the four measures selected and they were randomized for each participant. Because all four measures used similar 1-5 Likert scales, integration of the questions from the various assessments was seamless as not to alert participants to any sorts of themes in the content of the questionnaires. After completing the personality inventories, participants consented to enrollment in the gift card lottery and were subsequently debriefed. The lottery was completed upon the collection of data and students were granted course credit for their participation.

**Results**

Coordination success was measured and evaluated using a coordination score: a value calculated from the total number of other participants in the study who provided the exact same answer for each item on the coordination task (for example, if 25 people provided the same answer to the first question, each of them would receive 24 points for their answer). Higher scores indicated more frequently provided answers. A final coordination score was calculated by totaling each participant’s score for each of the twenty coordination items given. Scores were then divided by the highest possible coordination score (the number of other participants multiplied by the number of coordination items) to give a percentage to be used as an indicator of average coordination performance and as a predictive measure of coordination success. The average coordination percentage for Study 1 was 33.22.

In this sample, analysis of the results indicate a significant gender effect on coordination performance. An independent samples t-test revealed that females ($M = 34.19$, $SD = 4.55$)
performed better on the given coordination task than males ($M = 31.20, SD = 5.60$); $t(78) = 2.55, p = .01$.

The results from this sample of university students indicate that one’s age has no relation to one’s coordination performance. The Pearson correlation conducted between age and coordination performance was found to be insignificant ($r = .16, p = .15$).

The romantic relationship status provided by participants was coded into two categories: “single” and “in a relationship.” An independent samples t-test indicated that those who were in a romantic relationship ($M = 34.04, SD = 5.11$) did not perform better on the coordination task than those who were single ($M = 32.43, SD = 4.99$), as the difference between the two groups was insignificant; $t(78) = 1.42, p = .16$.

The indication of birth order provided by participants was coded into two categories: “those with older siblings” (in other words, middle and youngest children) and “those without older siblings” (only and oldest children). Contrary to the initial hypothesis, an independent samples t-test indicated that those without older siblings ($M = 33.82, SD = 5.05$) did not perform better on the coordination task than those with older siblings ($M = 32.67, SD = 5.10$), as the difference between the two groups was insignificant; $t(78) = 1.01, p = .31$.

A series of Pearson correlations was conducted for each of the Big Five personality components and coordination performance. All five were found to be insignificant: openness ($r = .08, p = .49$), conscientiousness ($r = .08, p = .48$), extraversion ($r = .13, p = .26$), agreeableness ($r = .06, p = .62$), and neuroticism ($r = .00, p = .98$). This result suggests that none of these five traits can be related to coordination success as originally hypothesized.
The results suggest that locus of control is not related to coordination performance as originally hypothesized. The Pearson correlation conducted between Locus of Control scores and coordination performance was found to be insignificant ($r = .17, p = .13$).

The results suggest that empathy is not related to coordination performance as originally hypothesized. The Pearson correlation conducted between BES-A score and coordination performance was found to be insignificant ($r = .15, p = .19$).

The results from this sample of university students suggest that rational explanatory styles are not related to coordination performance as originally hypothesized. The Pearson correlation conducted between REI score and coordination performance was found to be insignificant ($r = .11, p = .34$).

A Bonferroni correction was applied to the results of Study 1, moving alpha to .004. While the gender effect was significant at the .05 level, it becomes insignificant when the correction is applied. While it is worth noting that this correction is extremely conservative, it does provide cause for caution in drawing conclusions from these exploratory findings. A subsequent study with a larger sample size will be necessary to confirm the validity of this result.

**Study 2**

Because Study 1 was the first in this series of exploratory studies, it is necessary to further investigate the effects that appeared to be significant after the initial exploration. Because many of the personality measures studied previously were not found to predict tacit coordination success, all except for REI were discarded for further study in Study 2.

In addition, social value orientation (SVO) will be evaluated in relation to coordination performance. SVO is determined using a task that classifies people as either competitive, individualistic, or prosocial by assessing their responses to a task requiring them to select a
reward for themselves and for a hypothetical other. By categorizing people into these three groups depending upon their answers to questions on the SVO task, it is possible to predict how they will behave across a wide variety of social dilemmas. A meta-analysis on 82 SVO studies including prisoner’s dilemmas, public goods dilemmas, and commons dilemmas indicates that SVO is a consistent and reliable predictor of future cooperation in these studies (Balliet, Parks, & Joireman, 2009).

Research indicates that prosocial individuals continually act in ways that benefit others because they look to adhere to norms of social responsibility and reciprocity. For these reasons, they seek options in social dilemmas that promote the maximum reward for fellow participants as well as in the group (de Cremer & van Lange, 2001). Bringing these findings to the realm of tacit coordination, it is predicted that those identifying as prosocial will perform better on the coordination task than those identifying as either competitive or individualistic. Those who act prosocially in the SVO task are inclined to think about the benefit of others, even though the task is only hypothetical in nature. This prosocial tendency is expected to lend itself to the successful use of secondary salience in the coordination task.

Additionally, Study 2 will be conducted using a participant pool that provides more diversity than a traditional undergraduate student sample. For this reason, participants will be recruited from Amazon’s Mechanical Turk (MTurk), an online crowdsourcing platform frequently used by social scientists. Research on MTurk has found that this platform is a reliable setting for quality scientific research, indicating that MTurk offers more demographic diversity than a traditional university student sample, without compromising the authenticity of the laboratory setting (Buhrmester, Kwang, & Gosling, 2011). It is predicted that the MTurk sample
will provide more variation in the sample for Study 2 in comparison to the sample for Study 1, which may be evident in the results.

Method

Participants

The participant pool consisted of 203 participants recruited from MTurk. One-hundred and twenty were male and 81 were female, with 2 participants not identifying their genders. The average age was 34.31 with a standard deviation of 10.81. Participants represented a variety of states in the United States. Forty-five participants indicated that they were only children, 62 indicated that they were the oldest child in their families, 41 indicated that they were middle children, 52 indicated that they were youngest children, with 3 participants not identifying their birth order. Seventy-nine participants indicated their romantic relationship status as single, 7 indicated that they were dating casually, 40 indicated that they were dating exclusively, 8 indicated that they were engaged, and 66 indicated that they were married, with 3 participants not identifying their relationship status.

Materials

The same tacit coordination task from Study 1 was used in this study. In addition, the Rational Experiential Inventory used in Study 1 was used in the present study as it produced a marginal, yet insignificant result and is still hypothesized to be a reliable predictor of coordination performance in a larger and more diverse sample.

In this study, an SVO measure (see Appendix F) will be used to classify participants as either competitive, individualistic, or prosocial. The exercise consists of nine hypothetical scenarios in which three options, A, B, and C, indicate payout values for the participant and for the supposed partner. The competitive response involves the participant minimizing their own
reward to subtract from the reward of the “other”. The individualistic response involves participants receiving a greater reward than the “other”. The prosocial response involves participants and the “other” receiving the same reward value. Responses are coded by response type and participants are classified as one of the three orientations (competitive, individualistic, or prosocial) if they make six out of nine consistent responses. If a total of six consistent responses is not met, participants are considered unclassified (van Lange, Otten, de Bruin, & Joireman, 1997).

Procedure

The procedure used in this experiment was largely similar to the one used in Study 1. In Study 2, participants were routed to the online SurveyMonkey study via Amazon Mechanical Turk. In addition to a 50¢ payment they received for participating, they were told that they would receive a 1¢ bonus for every coordination item on which they matched their partners. Participants were given instructions and then completed the coordination task. Next, they completed the SVO task, followed by the REI measure. Finally, they provided demographic information and were debriefed.

Results

As in Study 1, coordination scores were converted into percentages in order to assess coordination performance. For Study 2, the average coordination percentage was 44.29.

In this sample, the independent samples t-test conducted for gender on coordination performance indicated that this relationship is not significant, in contrast with the findings of Study 1. Females ($M = 44.43, SD = 6.95$) did not perform better than males ($M = 44.12, SD = 7.57$), as the difference between the two groups was insignificant; $t(199) = .31, p = .76$. In other words, the gender effect discovered in Study 1 failed to replicate in the present sample. Given
the relatively weak nature of this effect found in Study 1 and the lack of effect in the larger sample in Study 2, it is difficult to be confident that there does exist a gender difference in tacit coordination performance.

A Pearson correlation conducted for this study indicates that there was a significant correlation between age and coordination performance ($r = .30, p < .001$). In other words, the results of this study suggest that older individuals perform better at coordination tasks. Worth noting, is that this result was not found previously in Study 1.

In this study, romantic relationship status was once again coded into two categories: “single” and “in a relationship.” An independent samples t-test conducted for relationship status revealed that those in a relationship ($M = 44.36, SD = 7.41$) did not perform significantly better on the coordination task than those who were single ($M = 44.07, SD = 7.25$); $t(198) = .27, p = .79$.

In this study, birth order was once again coded into two categories: “those with older siblings” and “those without older siblings.” The independent samples t-test conducted between birth order and coordination performance indicate that those with older siblings ($M = 44.48, SD = 7.43$) did not perform better than those without older siblings ($M = 43.77, SD = 7.22$), as the difference between the two groups was insignificant; $t(198) = .68, p = .50$.

In this study, a high rational style score on the Rational Experiential Inventory had a significant effect on coordination performance ($r = .263, p < .001$). In other words, this study suggests that people who identify themselves as rational in their experiential style perform better at coordination tasks. This finding is in alignment with the original hypothesis, but was not found in Study 1.
Each participant’s social value orientation was determined by analyzing their responses to the SVO task. For those whose orientation could be indicated (at least six consistent responses), they were determined to be prosocial, individualistic, or competitive. The prosocial group consisted of 126 participants and had an average coordination performance of 44.46. The individualistic group consisted of 62 participants and had an average coordination performance of 45.79. The competitive group only consisted of 4 participants and had an average coordination performance of 38.82. A one-way ANOVA was conducted between social value orientation and coordination performance and the results suggest that this relationship is insignificant; \( F(2, 201) = 2.35, p = .10 \).

A Bonferroni correction was applied to the results of Study 2, moving alpha to .008. Even with this adjustment, the findings from both age and rational explanatory style remain significant, indicating the strength of the results.

**Study 3**

This study serves as a “third look” at the individual differences that influence success in tacit coordination scenarios. With the inconsistent findings between Study 1 and Study 2, the present study seeks to shed light upon which personality and demographic variables do, in fact, lend to successful coordination. Because the size of the MTurk sample was so large in Study 2, Study 3 will use undergraduate students once again, but this time in the traditional laboratory setting. This third look is designed to lend insight into the differences in the results across studies. To do this, the same personality and demographic measures used in Study 2 will be used in Study 3.

**Method**

**Participants**
Participants were 50 undergraduate students from a Midwestern university enrolled in introductory psychology classes completing the study for course credit. Sixteen were male and 34 were female. The mean age was 19.4 with a standard deviation of 1.18. Thirty-four participants were freshmen, 6 were sophomores, 7 were juniors, and 3 were seniors. Three participants indicated that they were only children, 16 indicated that they were the oldest child in their families, 11 indicated that they were middle children, and 20 indicated that they were youngest children. Twenty-four participants indicated their romantic relationship status as single, 3 indicated that they were dating casually, 20 indicated that they were dating exclusively, 2 indicated that they were engaged, and 1 indicated that they were married.

Materials

The same tacit coordination task from Study 1 and Study 2 was used in this study. In addition, the same SVO and REI items from Study 2 and from Study 1 and Study 2, respectively, were used in the present study.

Procedure

The procedure for this study is largely similar to the procedures of the previous studies, with the major difference being that participants completed the task live in the psychology lab. Participants provided informed consent, and were told that they would be randomly paired with another participant in the study and were instructed that they would earn one entry into a lottery for a $20 gift card for every question on which both members of the pair provided the same answer. Upon completion of the coordination task, participants completed the SVO task and the REI measure. After this participants completed a demographic questionnaire and were then debriefed.

Results
As in Study 1 and Study 2, tacit coordination performance was assessed by converting coordination scores into a percentage for each participant. In Study 3, the average coordination percentage was 37.09.

An independent samples t-test conducted between gender and coordination performance indicates that females \((M = 37.38, SD = 4.87)\) did not perform better on the coordination task than males \((M = 36.47, SD = 5.60)\), as the difference between the two groups was insignificant; \(t(48) = .59, p = .63\). This finding is in alignment with the results on gender from Study 2.

In this study, age was not found to be related to coordination success as it was in Study 2. The Pearson correlation indicates this relationship to be insignificant \((r = .05, p = .73)\). The finding for this sample is consistent with the sample in Study 1, but is inconsistent with the sample in Study 2.

As in Study 1 and Study 2, romantic relationship status was once again coded into “single” and “in a relationship.” An independent samples t-test was conducted between relationship status and coordination performance found that those who were in a relationship \((M = 37.86, SD = 5.02)\) did not perform better than those who were single \((M = 36.25, SD = 5.09)\), as the difference between the two groups was insignificant; \(t(48) = 1.12, p = .62\).

As in Study 1 and Study 2, birth order was coded into two categories: “those with older siblings” and “those without older siblings.” An independent samples t-test conducted between birth order and coordination performance indicates that those without older siblings \((M = 37.64, SD = 4.91)\) did not perform better than those with older siblings \((M = 36.75, SD = 5.22)\), as the difference between the two groups was insignificant; \(t(48) = .61, p = .55\).

In this study, rational explanatory style was not found to be related to coordination success as it was in Study 2. The Pearson correlation indicates this relationship to be
insignificant \((r = .18, p = .21)\). The finding for this sample is consistent with the sample in Study 1, but is inconsistent with the sample in Study 2.

As in Study 2, social value orientation was determined, if able, for each participant. The prosocial group consisted of 23 participants and had an average coordination performance of 37.99. The individualistic group consisted of 9 participants and had an average coordination performance of 36.87. The competitive group also consisted of 9 participants and had an average coordination performance of 36.26. A one-way ANOVA was conducted between social value orientation and coordination performance and the results suggest that this relationship is insignificant; \(F(2, 38) = .38, p = .69\).

**Discussion**

The results of Study 1, Study 2, and Study 3 indicate completely different sets of individual difference measures that appear to be predictors of coordination success. So naturally, the questions emerge, “which sample can be trusted?”, and “which measures are actually significant when they are not replicated?”. Study 1 suggests that gender has an effect on coordination performance, however, these results were not found in either Study 2 or Study 3. Study 2 suggests that both age and rational explanatory style are positively correlated with coordination success, however, the samples from Study 1 and Study 3 do not show either of these effects. Study 3, an attempt to confirm either the results of Study 1 or Study 2, failed to replicate any of the previous findings.

Worth noting is that, overall, participants in Study 1 had an average coordination score of around 33%, while Study 2 participants averaged around 44%, an increase of 11 percentage points. Study 3 participants averaged around 37%, down 7 percentage points from Study 2, yet up 4 percentage points in comparison to Study 1. Regardless of individual difference measures,
clearly participants in Study 2 performed at a much higher rate than participants in either Study 1 or Study 3. In terms of sample, the MTurk sample outperformed both of the undergraduate student samples.

This information provides valuable insight into the questions that emerge from this array of results, particularly about age and rational explanatory style, the significant results from Study 2. The sample in Study 2 reflects more diversity in both age and rational explanatory style than do either of the samples in Study 1 or Study 3, a population that is quite uniform; a majority of participants being first year college students.

In Study 1, the average age of participants was 18.575 with a standard deviation of .74, in Study 2, the average age was 34.308 with a standard deviation of 10.81, and in Study 3 the average age was 19.4 with a standard deviation of 1.18. In explaining why age was a significant finding of Study 2, but not in Study 1 or Study 3, the greater age diversity in the MTurk may allow age to be detected as having an effect on coordination performance whereas it was undetected in the samples with a restriction of range in regards to age. In addition to being more age diverse, in general, the sample in Study 2 was around 15 years older than both the samples in Study 1 and Study 3. To put it simply, the older sample performed markedly better than the younger samples, providing further support for the age effect.

This finding on age is in alignment with the initial hypothesis: that those who are older perform better on coordination tasks than those who are younger. If age is to be considered a reliable predictor of coordination success, it may be because older individuals have more practice with real world tacit coordination scenarios and are able to use these experiences to help them implement effective coordination strategies.
Another explanation for the age effect is egocentrism. Younger people are more prone to think about life from their own perspectives and have more difficulty in adopting the perspectives of others. To extend this idea into the domain of tacit coordination, it is possible that younger participants are more inclined to use primary salience on coordination tasks and select options in alignment with their own preferences instead of adopting secondary salience in order to attempt to actually coordinate with others. Younger people may be less likely to utilize Schelling salience and search for the “best” options to maximize coordination success.

Rational explanatory style also appeared to be significant in Study 2. As with age, REI score varied more in the more diverse MTurk sample than it did in the more uniform undergraduate student sample. In Study 1, the average REI score was 36.68 with a standard deviation of 6.46. In Study 2, the average score was 38.44 with a standard deviation of 8.39. In Study 3, the average score was 37.40 with a standard deviation of 5.61. This variance, again, may explain why rational explanatory style appeared to be significant in Study 2, but not in Study 1 or Study 3. This finding suggests that the tendency to think more logically and analytically can serve as a predictor of coordination success. It may be the case that those who tend to think more rationally may have an easier time using Schelling salience to search for prominent focal points to select in coordination tasks.

One finding worth addressing is from Study 1 on gender. While the gender effect was not replicated in either Study 2 or Study 3, Study 1 suggests that females perform better than males in coordination tasks. Although the gender effect was found in one undergraduate sample (Study 1), but not in the MTurk sample in Study 2, it may be the case that gender is a relevant predictor of coordination success for younger participants, and is critical to the undergraduate
sample, but becomes unnecessary as participants grow older and the two genders even out in terms of differences in performance. As a direction for future research, further exploration of the gender effect is needed in both types of samples.

One limitation of this research is that the size of the sample in Study 3 was smaller than either of the samples in Study 1 and Study 2. In Study 3, none of the individual difference measures tested were determined to be significant predictors of coordination success, which may be explained by the sample size of 50 in comparison to the samples of 80 and 203 in Study 1 and Study 2 respectively. It may be possible that, with more participants, the results of Study 3 may become significant, however, it is likely that the findings will be similar to those of Study 1 as both samples consisted of undergraduate students: a population that is fairly uniform in age as well as in other aspects.

Because many of the personality measures used in Study 1 were not found to be significantly related to coordination performance, they were ruled out and were therefore not assessed in Study 2 or Study 3. The one exception to this was rational explanatory style which was still hypothesized to be a predictor of coordination success, despite the findings from Study 1. The demographic variables were held constant between Study 1, Study 2, and Study 3.

In Study 2, age and rational explanatory style were found to affect coordination performance even though they were not highlighted as being significant in Study 1. Had rational explanatory style been ruled out upon the conclusion of Study 1 and the REI not been used in the subsequent studies, this effect would not have been discovered due to assumptions that the undergraduate sample would be comparable to the MTurk sample and would be representative of the general population.
In the more diverse MTurk sample, the previously dismissed personality components (the Big Five, Locus of Control, and empathy) may stand out as being successful predictors of coordination success. Because these measures were not included in Study 2 or Study 3, it is difficult to claim that they do not affect coordination performance when they have not been assessed outside of the undergraduate student population. This limitation presents a critical avenue for further research on the role individual differences play in tacit coordination performance.

As another limitation, it is also possible that there are confounding variables in these studies, meaning that there may be other individual difference measures that are actually responsible for increased performance on coordination tasks but manifest themselves in the presently tested measures. Even though most of the significant results come from demographic variables as opposed to personality components, rational explanatory in particular may be a subject of further research. While it may be tempting to claim that those who think rationally and analytically tend to do better at coordination tasks than those who score lower on the REI, there may be something else at play that better explains this finding, a different variable that is responsible for both coordination success and for higher REI scores. This is not to say that demographic information is not subject to confounding variables, but it is most likely that results from personality measures are more prone to having them.

Important to note is that tacit coordination involves successful mismatching in addition to successful matching as situations require it. These studies focus solely on matching coordination, neglecting mismatching altogether. It is possible that the individual difference measures tested in these studies may significantly predict mismatching ability while many were insignificant in predicting performance on matching tasks. Measuring the personality
components and demographic variables used in these studies within the context of mismatching coordination is an essential direction for further study and may contribute to a more complex coordinator profile.

The findings from these three exploratory studies have important implications that extend the results into the real world context. With findings suggesting that age and rational explanatory style both contribute to success in hypothetical coordination tasks, it is possible to confidently maintain that those who are older and those who tend to think rationally and analytically will be able to more easily coordinate with the friends, family members, coworkers, and even strangers in their lives when they encounter real world coordination scenarios. These findings indicate that older couples who have been married for many years may do better at making plans for dates and managing household chores than younger couples who have only started dating relatively recently. Older employees may be better able to predict expectations from their bosses than younger employees. Those who think more rationally may find it easier to meet up with a friend for lunch that those who think more emotionally. A more rational roommate may have an easier time anticipating which groceries he or she may need to purchase than a less rational roommate. When applied, knowledge of these findings on age and rational explanatory style can be used to help people improve their coordination abilities in the coordination scenarios they regularly encounter.

While further research is still needed before we can confidently provide an accurate coordinator profile, age and rational explanatory style appear to be promising predictors of coordination success. Because of its exploratory nature, the present research provides several opportunities for continued study.
References


Appendix A

Tacit Coordination Task: used in Studies 1, 2, and 3

1. Name any year, past, present, or future: ____________________
2. Name any flower: ____________________
3. Name any car manufacturer: ____________________
4. Name any U.S. town or city: ____________________
5. Name any positive number: ____________________
6. Name any color: ____________________
7. Name any boy’s name: ____________________
8. Name any girl’s name: ____________________
9. Name any music genre: ____________________
10. Name a Friday night activity: ____________________
11. Name a location for a date: ____________________
12. Name a place to exercise: ____________________
13. Name a sport: ____________________
14. A coin was tossed. Choose one: heads or tails: ____________________
15. Choose one: eating in a restaurant or eating a home-cooked meal: ____________________
16. Choose one: water or soda: ____________________
17. Choose one: action movie or comedy movie: ____________________
18. Choose one: convertible or motorcycle: ____________________
19. Choose one: beach or pool: ____________________
20. Choose one: dog or cat: ____________________
Appendix B

Big Five Personality Inventory (BFI-10): used in Study 1

1: Disagree strongly  2: Disagree a little  3: Neither agree nor disagree
4: Agree a little     5: Agree strongly

I see myself as someone who:

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>is reserved.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2.</td>
<td>is generally trusting.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3.</td>
<td>tends to be lazy.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4.</td>
<td>is relaxed, handles stress well.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5.</td>
<td>has few artistic interests.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6.</td>
<td>is outgoing, sociable.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7.</td>
<td>tends to find fault with others.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8.</td>
<td>does a thorough job.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>9.</td>
<td>gets nervous easily.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>10.</td>
<td>has an active imagination.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
Appendix C

Locus of Control Inventory (IE-4): used in Study 1

1: Disagree strongly  2: Disagree a little  3: Neither agree nor disagree
4: Agree a little  5: Agree strongly

1. If I work hard, I will succeed.
   1 2 3 4 5

2. I’m my own boss.
   1 2 3 4 5

3. Whether at work or in my private life: what I do is mainly determined by others.
   1 2 3 4 5

4. Fate often gets in the way of my plans.
   1 2 3 4 5
Appendix D

Empathy Scale for Adults (BES-A): used in Study 1

1: Disagree strongly  2: Disagree a little  3: Neither agree nor disagree
4: Agree a little  5: Agree strongly

1. I can understand my friend’s happiness when she/he does well at something.
   1  2  3  4  5

2. I find it hard to know when my friends are frightened.
   1  2  3  4  5

3. When someone is feeling ‘down’ I can usually understand how they feel.
   1  2  3  4  5

4. I can usually work out when my friends are scared.
   1  2  3  4  5

5. I can often understand how people are feeling even before they tell me.
   1  2  3  4  5

6. I can usually work out when people are cheerful.
   1  2  3  4  5

7. I can usually realize quickly when a friend is angry.
   1  2  3  4  5

8. I am not usually aware of my friends’ feelings.
   1  2  3  4  5

9. I have trouble figuring out when my friends are happy.
   1  2  3  4  5
Appendix E

Rational-Experiential Inventory (REI): Used in Studies 1, 2, and 3

1: Disagree strongly  2: Disagree a little  3: Neither agree nor disagree  
4: Agree a little     5: Agree strongly

1. I’m not that good at figuring out complicated problems.
   1  2  3  4  5

2. I am not very good in solving problems that require careful logical analysis.
   1  2  3  4  5

3. I am not a very analytical thinker.
   1  2  3  4  5

4. Reasoning things out carefully is not one of my strong points.
   1  2  3  4  5

5. I don’t reason well under pressure.
   1  2  3  4  5

6. I am much better at figuring things out logically than most people.
   1  2  3  4  5

7. I have a logical mind.
   1  2  3  4  5

8. I have no problem in thinking things through carefully.
   1  2  3  4  5

9. Using logic usually works well for me in figuring out problems in my life.
   1  2  3  4  5

10. I usually have clear, explainable reasons for my decisions.
    1  2  3  4  5
Appendix F

Social Value Orientation (SVO): used in Studies 2, and 3

In this task we ask you to imagine that you have been randomly paired with another person, whom we will refer to simply as the "Other." This other person is someone you do not know and that you will not knowingly meet in the future. Both you and the "Other" person will be making choices by circling either the letter A, B, or C. Your own choices will produce points for both yourself and the "Other" person. Likewise, the other's choice will produce points for him/her and for you. Every point has value: the more points you receive, the better for you, and the more points the "Other" receives, the better for him/her. For each of the nine choice situations, circle A, B, or C, depending on which column you prefer most:

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) You get</td>
<td>480</td>
<td>540</td>
<td>480</td>
<td>(6) You get</td>
<td>500</td>
<td>500</td>
<td>570</td>
</tr>
<tr>
<td>Other gets</td>
<td>80</td>
<td>280</td>
<td>480</td>
<td>Other gets</td>
<td>500</td>
<td>100</td>
<td>300</td>
</tr>
<tr>
<td>(2) You get</td>
<td>560</td>
<td>500</td>
<td>500</td>
<td>(7) You get</td>
<td>510</td>
<td>560</td>
<td>510</td>
</tr>
<tr>
<td>Other gets</td>
<td>300</td>
<td>500</td>
<td>100</td>
<td>Other gets</td>
<td>510</td>
<td>300</td>
<td>110</td>
</tr>
<tr>
<td>(3) You get</td>
<td>520</td>
<td>520</td>
<td>580</td>
<td>(8) You get</td>
<td>550</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>Other gets</td>
<td>520</td>
<td>120</td>
<td>320</td>
<td>Other gets</td>
<td>300</td>
<td>100</td>
<td>500</td>
</tr>
<tr>
<td>(4) You get</td>
<td>500</td>
<td>560</td>
<td>490</td>
<td>(9) You get</td>
<td>480</td>
<td>490</td>
<td>540</td>
</tr>
<tr>
<td>Other gets</td>
<td>100</td>
<td>300</td>
<td>490</td>
<td>Other gets</td>
<td>100</td>
<td>490</td>
<td>300</td>
</tr>
<tr>
<td></td>
<td>A</td>
<td>B</td>
<td>C</td>
<td></td>
<td></td>
<td></td>
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<td>----</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>You get</td>
<td>560</td>
<td>500</td>
<td>490</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other gets</td>
<td>300</td>
<td>500</td>
<td>90</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix G

Demographic Questionnaire: used in Study 1 and Study 3

We want to know a little about you. Please answer the following questions.

Select your gender:

<table>
<thead>
<tr>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
</table>

How old are you?: ____________________

Select your birth order status:

<table>
<thead>
<tr>
<th>Only Child</th>
<th>Oldest Child</th>
<th>Middle Child</th>
<th>Youngest Child</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other: ____________________</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Select your romantic relationship status:

<table>
<thead>
<tr>
<th>Single</th>
<th>Dating Casually</th>
<th>Dating Exclusively</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engaged</td>
<td>Married</td>
<td></td>
</tr>
</tbody>
</table>

What is your major?: ____________________

Select your academic year:

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Sophomore</th>
<th>Junior</th>
<th>Senior</th>
</tr>
</thead>
</table>
Appendix H

Demographic Questionnaire: used in Study 2

We want to know a little about you. Please answer the following questions.

Select your gender:

Male  Female

How old are you?: ____________________

Select your birth order status:

Only Child  Oldest Child  Middle Child  Youngest Child

Other: ____________________

Select your romantic relationship status:

Single  Dating Casually  Dating Exclusively

Engaged  Married

What state do you live in?: ____________________
Appendix I

TO: Emily Shrider and Dr. Chris Chartier
FROM: Chris Chartier, HSRB Chair
DATE: September 15, 2015
SUBJECT: Human Subjects Review Board Approval
PROJECT TITLE: Tacit Coordination: The Profile of a Coordinator
HSRB APPROVAL CODE: 09-09-15-#012

The Human Subjects Review Board has approved your research study. You may proceed with the study as you have outlined in your proposal. The approval is granted for one calendar year. Research participant interaction and/or data collection is to cease at this time, unless application for extension has been submitted and approval for continuance is obtained.

The primary role of the HSRB is to ensure the protection of human research participants. As a result of this mandate, we ask that you adhere to the ethical principles of autonomy, justice, and beneficence. We would also like to remind you of your responsibility to report any violation to participant protections immediately upon discovery. Likewise, we would like to remind you that any alteration to the research proposal as it was approved cannot move forward. Any amendment to the application must be submitted for approval before the project can resume.

We wish you success in your discoveries,

[Signature]
Doctor Chris Chartier
Ashland University
Chair Human Subjects Review Board
TO: Emily Shriver and Dr. Chris Chartier
FROM: Chris Chartier, HSRB Chair
DATE: November 3, 2015
SUBJECT: Human Subjects Review Board Approval
PROJECT TITLE: Tactic Coordination: The Profile of a Coordinator
HSRB APPROVAL CODE: 11-02-15-#044

The Human Subjects Review Board has approved your research study. You may proceed with the study as you have outlined in your proposal. The approval is granted for one calendar year. Research participant interaction and/or data collection is to cease at this time, unless application for extension has been submitted and approval for continuance is obtained.

The primary role of the HSRB is to ensure the protection of human research participants. As a result of this mandate, we ask that you adhere to the ethical principles of autonomy, justice, and beneficence. We would also like to remind you of your responsibility to report any violation to participant protections immediately upon discovery. Likewise, we would like to remind you that any alteration to the research proposal as it was approved cannot move forward. Any amendment to the application must be submitted for approval before the project can resume.

We wish you success in your discoveries,

[Signature]

Doctor Chris Chartier
Ashland University
Chair Human Subjects Review Board
TO: Emily Shrider and Dr. Chris Chartier
FROM: Chris Chartier, HSRB Chair
DATE: January 28th, 2015
SUBJECT: Human Subjects Review Board Approval
PROJECT TITLE: Tactic Coordination: The Profile of a Coordinator
HSRB APPROVAL CODE: 1-19-16-#061 (11-02-15-#044)

The Human Subjects Review Board has approved your research study. You may proceed with the study as you have outlined in your proposal. The approval is granted for one calendar year. Research participant interaction and/or data collection is to cease at this time, unless application for extension has been submitted and approval for continuance is obtained.

The primary role of the HSRB is to ensure the protection of human research participants. As a result of this mandate, we ask that you adhere to the ethical principles of autonomy, justice, and beneficence. We would also like to remind you of your responsibility to report any violation to participant protections immediately upon discovery. Likewise, we would like to remind you that any alteration to the research proposal as it was approved cannot move forward. Any amendment to the application must be submitted for approval before the project can resume.

We wish you success in your discoveries,

[Signature]

Doctor Chris Chartier
Ashland University
Chair Human Subjects Review Board
Appendix L

Author’s Biography

Emily Shrider is a native of Hilliard, Ohio, graduating from Hilliard Darby High School in 2012. At Ashland University, Emily is majoring in psychology and minoring in Religion, Child and Family Studies, and Business Administration. She is a member of Psi Chi, the national honorary for Psychology and Theta Alpha Kappa, the national honorary for Religious Studies. She has made the Dean’s List every semester she has attended Ashland University.

Emily is a member of the Honors Program where she has served as a coordinator for the Peer Mentor Program. For three years, she has been a research assistant for the psychology department and a peer tutor for the Center for Academic Support. She has also served as a leader for The Well, a Christian ministry on campus, and for the university’s Habitat for Humanity chapter.

Upon graduation, Emily will pursue her doctoral degree in Clinical Psychology at Wright State University in Dayton, Ohio.