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## **The Relationship between Punctuality, Optimism, and Time Perception**

Madison Vander Wielen<sup>11</sup>

This study looked at both the relationship between a persons' punctuality and their perception of time passing and the correlation between a persons' punctuality and their optimism level. Punctuality was measured in two different ways: when the participant arrived to the scheduled study slot and then again when they took a punctuality survey. I measured the participants' perception of time by having them estimate when two minutes had passed while completing a Sudoku puzzle. The point of time when they thought 2 min had passed was compared to the actual amount of time that passed. The puzzle assured that the participants were not keeping track of time in their heads but rather rely on their own perception of time. Optimism was measured by the Revised Life Orientation Test by Scheier, Carver, and Bridges (1994). It was predicted that people who are more punctual will underestimate the amount of time that has passed whereas those who are not punctual will overestimate the amount of time that has passed. I ran a chi-square analysis and found no significant relationship between punctuality and time perception. Based on natural groups of punctuality, participants were grouped by whether they were punctual (i.e., early or on-time) versus unpunctual (i.e., late). It was expected that those in the unpunctual group will be more optimistic but my results showed no significance in optimism and punctuality.

Harrison and Prince define being unpunctual or late as arriving after the time of a scheduled event (as cited in Werner, Geisler, & Randler, 2014). When someone arrives late to an arranged meeting time, it is easy to assume this person is inconsiderate, lazy, and unorganized.

The opposite of late would be punctual, or the act of arriving before or just at the arranged

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scheduled time. We attribute punctuality as a controllable, behavioral trait. But what if a person's punctuality is in reality an uncontrollable trait, a biological trait, that stems from a person's perception of time and internal clock? Le Poidevin (2015) described the perception of time as perceiving changes or events in time. Is it fair to put controllable blame on someone who psychologically perceives time passing at a slower rate than others?

One of the main aspects of the study I conducted looked at a person's perception of time. I was interested in seeing if the accuracy with which a person perceives time is a predictor of punctuality. The perception of time is hard to define. As explained by St. Augustine, our perception of time passing is merely just us remembering a memory (as cited in Le Poidevin, 2015). Few studies in the past have focused on time perception and punctuality. Levine, West, and Reis (1980) took participants from Brazil and the United States and compared their perception of time. They looked at many things, including the accuracy with which the different cultures kept time, the rate at which the cultures were late to appointments, and the participants' opinions about another person's punctuality. One of the things that Levine et al. (1980) found was that Brazilians were more often late (less punctual) to arranged meeting times than Americans were. Interestingly, they also found that Brazilians rated people who are constantly late as being more likeable and happier. Brazilians perceived a person's lateness is externally caused (Levine et al., 1980). The research study stated that participants from the United States

attributed unpunctuality to be controlled by people. My idea is that punctuality is not controllable, but in actuality, it is something that is linked with our perception of time.

Hill, Block, and Buggie (2000) wanted to look at the idea of time in comparison to different cultural and racial groups. They collected data from White Americans, Black Americans, and Black Africans. The groups were from separate areas and each participant fit into one of the three racial categories. After passing out the questionnaires, the researchers concluded that all three racial groups shared similar ideas about time. If different beliefs about time were influenced mostly by culture, then the researchers predicted that they would see similar results from the White American and Black American participant results. Similarly, the researchers thought that if the ideas about time were mainly influenced from biological, race-related aspects of people then the results from the Black Americans and the Black Africans would be more similar. Surprisingly, the results showed that all of the groups were pretty similar in their results with Black Americans being the most different. Hill et al. (2000) stated that their results supported the hypothesis that culture and genetics can be the main factor of a person's time beliefs is not entirely right.

Kanekar and Vaz (2001) looked at the difference in gender and views on punctuality. The researchers wrote out different scenarios of subjects arriving late to an interview and the participants in the study had to rate the subjects' behavior. The ratings that the participants

completed included the likelihood that the subject would be late again in a similar circumstance and how likely they would recommend the subject to stop being late in similar circumstances.

Results stated that female participants' recommendations were stronger when the subject in the scenario was male. There was not a significant relationship between the two rating questions (Kanekar & Vaz, 2001). This means that the participants' expectations about punctuality were different from their recommendations about punctuality.

There have also been studies that focused on perceptions of people based on punctuality. Leach, Rogelberg, Warr, and Burnfield (2009) looked at the different characteristics of meetings in relation to the overall opinions about effectiveness from the attendees. Specifically focusing on the punctuality results, the researchers found that the punctuality of the meeting (did it start and end on time?) was a considerable predictor of effectiveness for meetings. The researchers discussed ways to give a more effective meeting and one of their suggestions was to be more aware of the punctuality of meeting times. These results tie in with the idea that there is negative judgment placed on people based upon their punctuality.

There are potential negative consequences that come along with being unpunctual. There has been some research conducted by Koslowsky, Sagie, Krausz, and Singer (1997) that found job loss, criticism from other employees, and low job commitment as possible outcomes for people who are less punctual. Punctuality has been researched in the past as a negative predictor

of bad behaviors. These researchers focused their meta-analysis study on the connection between an employee's lateness behavior and their withdrawal from work. Withdrawal from work includes low performance and social loafing. The data used for their research analysis came from previous studies that targeted lateness as a variable. The information was analyzed and the results showed that there was a correlation between lateness and withdrawal from work. Dishon-Berkovits and Koslowsky (2002) went on to create a new study to look at employee punctuality and the characteristics that go along with it. The researchers sent out a questionnaire to a company in Israel. The sample size was 158 participants and focused on time urgency, organizational commitment, and the age of the employee's oldest child. Research in the past have found results on certain factors that could be an indicator for punctuality, so then why are people still showing up late?

If what I am thinking is true, that punctuality is uncontrollable; could punctuality be defined as a personality trait rather than a behavioral trait? Richard and Slane (2001) wanted to investigate whether peoples' punctuality styles are consistent overtime. In their study, the participants' punctuality was measured in four different ways; a self-reported punctuality style, reported arrival time, actual arrival time, and a stopwatch task. The results showed that the participant's style of punctuality was consistent across the different measures. My implication that punctuality is a personality trait rather than a behavioral trait is stronger with the support of

these results. Not much research has declared what could be the cause of a person's punctuality style but researchers in the past have investigated the relationship between punctuality and personality traits.

The terms punctual and unpunctual are not the only personality trait terms associated with time. Anthropologists believe that people can be either monochronic or polychronic. These two terms describe different ways that people organize their time. Kaufman-Scarborough (2003) explained that monochronic time is compared to money; it is saved and budgeted similarly to money. A person who is monochronic would prefer to do one thing at a time and always follow through with the plan. In contrast, polychronic people can multitask and are known to be more flexible when it comes to changing activities or plans. These labels (monochronic and polychronic) enhance my research by allowing me to better understand the different ways that people organize and perceive time.

A study conducted by Furnham and Bramwell (2006) looked at personality traits from the five factor model or Big 5 as predictors for absenteeism in the workplace. The personality traits in the five factor model include openness to experience, conscientiousness, extroversion, agreeableness, and neuroticism. Fifty-four workers at a company in the United Kingdom completed the NEO Five-Factor Inventory. The participants' degree of absence was retrieved

from the company's records. The results supported the researchers' hypothesis that extraversion is a positive predictor of absence (Furnham & Bramwell, 2006).

I have chosen the personality trait optimism as a variable in for the study at hand. I have always wondered if people who are late are just more susceptible to believing that they can fit a numerous number of tasks into a small time period. In the end, they are not able to and as a result they are late to their scheduled plans. But what is optimism? Is it different from the concept of hope? Researchers Bryant and Cvengros (2004) conducted a research study to answer this question. They created self-report questionnaires and handed them out to 351 undergraduate students. One of the measures used was the Life Orientation Test which is the same scale used in the present research study to measure the participants' optimism levels. After comparing the results from the questionnaires, Bryant and Cvengros (2004) defined hope as the focus on direct personal attainment of specific goals and optimism as the focus on broad qualities of future outcomes. The study at hand is focused on optimism, a more broad focus about the future, and how it relates to a person's punctuality.

Another group of researchers looked at different personality traits in comparison to punctuality. Back, Schmukle, and Egloff (2006) also looked at personality in comparison to traits from the five factor model. The researchers had participants complete a personality questionnaire on their free time and then had them meet for a psychological group experiment a few days later.



The whole point of the psychological group experiment was to measure the participants' punctuality to the arranged time. The results showed that individual personality traits from the five factor model were related to individual aspects of punctuality. Back et al. (2006) found that there was a significant relationship between agreeable people and people who arrived early or on time. They also found that conscientiousness was related not only to people who arrive early but also to people who arrive on time and late. Another group of researchers looked at personality and punctuality. James and Fleck compared punctuality with extraversion and found that extraversion was inversely related to punctuality meaning that if a person was unpunctual they were more likely to be extraverted (as cited in Werner et al., 2014). Another five factor model term, conscientiousness, was also looked at by a few research teams. Both Werner et al. (2014) and Back et al.'s (as cited in Werner et al., 2014) research results showed that conscientiousness was related to punctuality in a positive way: people who were punctual were seen as being conscientious. The studies just mentioned found results that would suggest that people who are more punctual are also introverted, agreeable, and conscientious. One could assume then that if a person was unpunctual then they would also be extroverted, stubborn, and careless.

Previous research conducted by Werner et al. (2014) argued that punctuality is its own personality trait that depends on situational factors. The researchers looked at the personality trait of morningness in relation to punctuality. Werner et al. (2014) define morningness-eveningness

(M/E) as the personal time of day preference for sleep times and activities. The researcher expected to see a relationship between students who arrive early to class and the preference of morningness. The Composite Scale of Morningness was used to assess M/E. The participant's punctuality was assessed by self-report and by observation when they arrived to the scheduled class time. The results suggested that there is a relationship between morningness and punctuality. Specifically, morning oriented students were more likely to arrive early to class.

Since the researchers were able to state that morningness was a predictor to a person's punctuality, what else affects a person's punctuality? A recent study looked at the association between diagnostic sleep disorders and punctuality (Spiegelhalder et al., 2012). The researchers took 148 participants diagnosed with primary insomnia and 487 participants diagnosed with other sleep-related disorders and compared their punctuality to the appointment at the sleep center. Primary insomnia is described by Spiegelhalder et al. (2012) as a diagnosis of poor sleep that is not caused by medical or substance factors. The researchers hypothesized that participants with insomnia would be more likely to arrive earlier than the participants with other sleep related diagnoses. What they found was that there were too many confounding variables in the study. The results of their study showed that certain demographic characteristics predicted a participant's punctuality but not the sleep related diagnoses. The participants who were older, had a lower level of education, were female, and had an appointment scheduled later in the day

were more likely to be more punctual (Spiegelhalder et al., 2012). There was no relationship between punctuality rates and people who are diagnosed with sleep disorders.

I wanted to measure the participant's perception of time by having them complete a task (Sudoku puzzle) and rely on their time perception to estimate when 2 min has passed. I found a previous study that looked at the differences in puzzle types and the perceived duration of time to make sure that the Sudoku puzzle was not be a third variable in a correlation. Choe (2013) had participants of a variety of age groups complete different levels of challenging tangram puzzles and then answer a list of questions that applied to the puzzles (i.e. how interesting was the puzzle, how difficult was the puzzle to complete, how focused the participant was on the puzzle, and how long it took to complete the puzzle). The results showed that the more interesting puzzles were perceived to have taken a longer duration of time to complete.

My research study could add to these previous research ideas by studying not only the relationship between punctuality and the perception of time but also the relationship between punctuality and optimism. I hypothesize that a person's degree of punctuality is related to his/her perception of the duration of time that has passed and that it is also related to the person's level of optimism. Specifically, I predict that people who are more punctual tend to underestimate the amount of time that has passed whereas those who are often less punctual have a tendency to overestimate the amount of time that has passed. I am focused on the connection between

punctuality and the personality trait of optimism and I hypothesize that if a person is punctual they will measure low on the optimism scale.

## **Method**

### **Participants**

There were a total of 32 participants for my research study. There were 17 males and 15 females who took part in the study. Participants were recruited from the Lindenwood Participant Pool (LPP), Facebook, and from fliers (see Appendix A) located around Lindenwood University's campus. The LPP allows students in certain classes to sign up online for research studies put on at Lindenwood University. These participants were compensated with extra credit in a specific qualifying class. The age range for the participants was 18-64 years old. There were no participants with visual impairments that disabled them from completing the Sudoku puzzle.

### **Materials**

Research was conducted both in the psychology lab at Lindenwood University and at the St Charles County Library, the O'Fallon location. The participants completed a survey packet consisting of a demographic survey (see Appendix B), a Revised Life Orientation Test (see Appendix C), and a Punctuality survey (see Appendix D). The participants attempted to complete a Sudoku puzzle (see Appendix E). I chose a beginner level puzzle to make sure that the puzzle was neutral and would likely not be too mundane or overly interesting for some

participants and not others. Instructions for the Sudoku puzzle was provided for all of the participants (see Appendix F) along with written instructions for the study (see Appendix G). All of my electronic calculations will be stored in a password-encrypted file on my personal laptop.

### **Procedure**

Participants were recruited from the Lindenwood Participant Pool (LPP), fliers posted and given out around Lindenwood University, and posts made on Facebook. First, the participant's punctuality to the pre-determined meeting time for the study was recorded. Then, each participant filled out two informed consent forms (see Appendix H): one for the participant to keep and one was for my possession. The participants were given the chance to read over instructions for a Sudoku puzzle before attempting to complete the puzzle. Next, I verbally explained that the participants will have to tell me to stop my watch when they think 2 min have passed while they are working on the Sudoku puzzle, regardless of whether they are able to finish the Sudoku puzzle or not. About halfway through the study, I decided to print up the instructions for the participants so that way they could visually read what I want them to do instead of only relying on verbal instructions. I then notified the participants to let me know when they were ready to begin and started my stopwatch when they were ready. When the participants felt that 2 min had passed and they stopped working on the puzzle, I stopped my stopwatch and recorded the actual amount of time on my data sheet. After the timed puzzle

portion of the study was completed, the participants completed a survey packet that includes the Life Orientation Test scale, the punctuality test, and the demographic survey. The study ended with each participant receiving a feedback letter (see Appendix I) and signing a second consent form (see Appendix J). The second consent form was required in order to use the participants' punctuality that was recorded before the participants agreed to take part in the study.

All of the surveys and data collected from this survey are anonymous and stored in my personal locked file cabinet. All electronic statistics and data are being kept on my personal laptop in a locked folder. There was no reason for any of the participants to write their name on any of the surveys or scales in the study. All documents affiliated with the participant were assigned a number for organization.

## **Results**

Based on natural groups of punctuality, participants were grouped by whether they are punctual (i.e., early or on-time) versus unpunctual (i.e., late). I conducted a chi-square analysis to see if there was a correlation between the participant's punctuality observed when they arrived and their time perception. I hypothesized that people who arrived on time or early would underestimate the amount of time that has passed whereas those who were not punctual would overestimate the amount of time that has passed. There was no significant relation between the

two variables,  $X^2(2, N = 32) = 0.68, p > .05$ . The percentage of participants that were punctual did not differ based on their time perception.

I also ran a correlation between the punctuality survey scores and the participants' time perception. I had the same hypothesis as stated before that people who scored higher on the punctuality survey would underestimate the amount of time that has passed whereas those who scored lower on the punctuality survey would overestimate the amount of time that has passed. There was no significant relationship between punctuality and time perception,  $r(30) = .22, p > .05$ .

I also conducted a correlation to determine if there was a relationship between punctuality and the participant's optimism level. There was no significant relationship between the variables,  $r(30) = -.0062, p > .05$ .

### **Discussion**

There were limitations that may have had an effect on the results of this study. The data collected for punctuality and optimism was self-report data. The participants could have been answering the surveys in ways that would present them as being more punctual and optimistic since society deems these characteristics as more positive for a person to have. Going forward, it would be more reliable to measure optimism differently such as having a friend measure the participant's optimism levels or observing the participants in a way to gauge their optimism.

Punctuality was measured two different ways: observed when the participants arrived and self-report through the punctuality survey that the participants filled out. I realized that the data was skewed when punctuality was measured when the participants arrived because of external variables. All of the participants who were recruited from the LPP were punctual and all of the unpunctual participants were recruited from my personal Facebook page which required them to meet me at a local library. The LPP requires participants to be on time to the studies whereas the participants from Facebook were not required to be punctual. I also had some of the participants mention that they were punctual because a class got let out early. This takes away the participants' control on their punctuality.

The other limitation I ran into was my sample size. With only 32 participants, my results were not a good representation of the population. In the future if I were to replicate the study, I would collect participants over a larger time period to potentially get more participants to better represent the population.

The results suggest that there is no relationship between optimism and time perception. Future research could correlate different personality traits to punctuality and time perception. Since Levine et al. (1980) found that Brazilian participants rated unpunctual people as being more likeable and happier; it would be interesting to correlate a person's overall happiness with his or her punctuality to see if it matches with the Brazilians' opinions.



Since there was an insignificant, weak positive correlation between time perception and punctuality, a new hypothesis could be proposed with new data to see why. The results suggest that the participants who were punctual were more likely to overestimate the time. A new hypothesis to consider could question if a person's perception of how long it takes to do certain tasks is related to their punctuality? More research on this subject could answer the following question; is the concept of time and time perception something we are genetically ,biologically programmed to know, or is it something we culturally or socially learn (Hill et al., 2000)?

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Appendix A

# Participants Needed!



Come take part in a research study focused on the relationship between one's time perception, optimism, and punctuality. The study takes less than 20 minutes to complete and includes surveys and a Sudoku puzzle. The results are anonymous. All participants will be compensated with Hostess snack cakes!

Contact Madison Vander Wielen:  
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Appendix B  
**Punctuality, Optimism, and Time Perception**  
**Demographic Questionnaire**

- 1) What is your gender? (circle one)    **MALE**        **FEMALE**    **OTHER**
  
- 2) Age: \_\_\_\_\_ Years old.
  
- 3) Compared to your friends, are you more or less likely to arrive on time to a set date?  
(Circle one)  
  
   More likely    Just as Likely    Less likely

## Appendix C

### Revised Life Orientation Test (LOT-R)

#### Instructions:

Please answer the following questions about yourself by indicating the extent of your agreement using the following scale:

(0) = strongly disagree

(1) = disagree

(2) = neutral

(3) = agree

(4) = strongly agree

Be as honest as you can throughout, and try not to let your responses to one question influence your response to other questions. There are no right or wrong answers.

\_\_\_ 1. In uncertain times, I usually expect the best.

\_\_\_ 2. It's easy for me to relax.

\_\_\_ 3. If something can go wrong for me, it will.

\_\_\_ 4. I'm always optimistic about my future.

\_\_\_ 5. I enjoy my friends a lot.

\_\_\_ 6. It's important for me to keep busy.

\_\_\_ 7. I hardly ever expect things to go my way.

\_\_\_ 8. I get upset too easily.

\_\_\_ 9. I rarely count on good things happening to me.

\_\_\_ 10. Overall, I expect more good things to happen to me than bad.

**Scoring:**

1. Reverse code items 3, 7, and 9 prior to scoring (0=4) (1=3) (2=2) (3=1) (4=0)
2. Sum items 1, 3, 4, 7, 9, and 10 to obtain an overall score.

*Note:* Items 2, 5, 6, and 8 are filler items only. They are not scored as part of the revised scale.

**Reference:**

Scheier, M. F., Carver, C.S., and Bridges, M.W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A re-evaluation of the Life Orientation Test. *Journal of Personality and Social Psychology*, 67, 1063-1078



## Appendix D

### **Punctuality Survey:**

Created by Madison Vander Wielen

Be as honest as you can throughout, and try not to let your responses to one question influence your response to other questions. There are no right or wrong answers.

1. Rate your reputation for timeliness:

1	2	3
Always Punctual	Sometimes Punctual	Never Punctual

2. Thinking about classes or meetings, you normally arrive:

1	2	3
Early	On-time	Late

3. Thinking about a date, do you normally arrive:

1	2	3
Early	On-time	Late

4. When you have a definite appointment with a doctor or dentist, you usually arrive at the office:

1	2	3
Early	On-time	Late

5. When do you usually return borrowed/rented things like books and movies?

1	2	3
---	---	---

Early	On-time	Late
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6. You normally start work/class at 9:00am, but today you are giving a presentation at work/class at 8:30am. You arrive...

1	2	3
---	---	---

Early	On-time	Late
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7. When mapping out a direction, I usually round up the estimated time of arrival (i.e. from 27 minutes to 30 minutes)?

1	2	3	4
---	---	---	---

Strongly Agree	Agree	Disagree	Strongly Disagree
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8. It is important for me to be on-time to work or class:

1	2	3	4
---	---	---	---

Strongly Agree	Agree	Disagree	Strongly Disagree
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9. I find it acceptable to be 5 minutes late to work or a class:

1	2	3	4
---	---	---	---

Strongly Agree	Agree	Disagree	Strongly Disagree
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10. It aggravates me when I am late to work or class:

1	2	3	4
---	---	---	---

Strongly Agree	Agree	Disagree	Strongly Disagree
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11. Occasional tardiness to work or class is acceptable:

1	2	3	4
---	---	---	---

Strongly Agree	Agree	Disagree	Strongly Disagree
----------------	-------	----------	-------------------

12. I feel guilty when I am late to work or class.

1	2	3	4
Strongly Agree	Agree	Disagree	Strongly Disagree

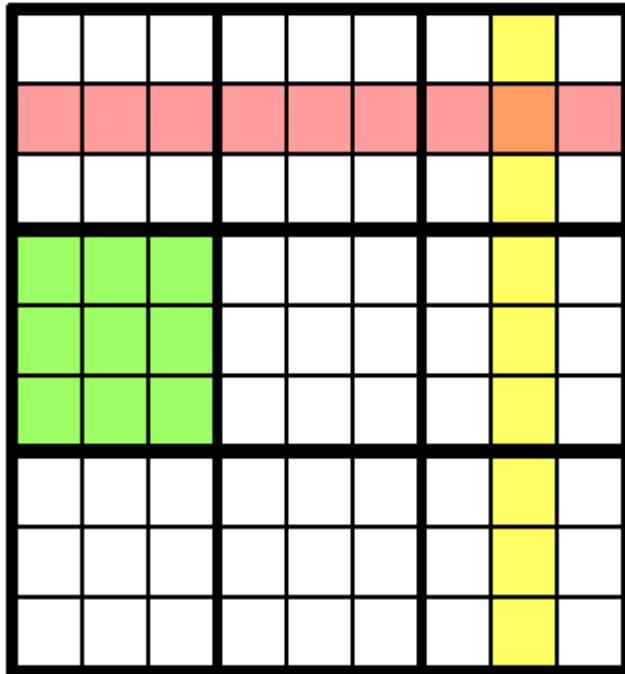
**Scoring key:**

3. Reverse code items 9 and 11 prior to scoring (1=4) (2=3) (3=2) (4=1)
4. Sum items 1-12 to obtain an overall score.

Appendix E

				4			7	8
		2	7	8		1		4
4		8			1	6		
7				6	2	9		1
		5	1		4		8	
8	2	1	9	7		4	3	
1			3		9			7
2					7	3		
	4	7	6	5	8	2	1	9

## Appendix F

**Sudoku Instructions/Rules:**

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The objective of Sudoku is to enter a digit from 1 through 9 in each cell, in such a way that:

1. Each horizontal **row** (shown in pink) contains each digit exactly **once**
2. Each vertical **column** (shown in yellow) contains each digit exactly **once**
3. Each subgrid or **region** (shown in green) contains each digit exactly **once**

- Solving a Sudoku puzzle does **not** require knowledge of mathematics; simple logic suffices. (Instead of digits, other symbols can be used, e.g. letters, as long as there are nine **different** symbols.)
- The puzzler's job is to fill the remainder of the grid with digits – respecting, of course, the three constraints mentioned earlier.

## Appendix G

### Punctuality, Optimism, and Time Perception: Part I Instructions

**For this part of the study, the goal is not to finish the Sudoku puzzle but to think about how long you have been working on it.**

When you are ready to begin working on the Sudoku puzzle, I am going to start my stopwatch.

While you are working on the puzzle, think about how much time has passed. When you think 2 minutes has passed, let me know and I will stop my stopwatch. Your goal is to get as close to 2 minutes as you can. Please put any cell phone or watches away.

## Appendix H

**Informed Consent**

I \_\_\_\_\_ (print name), understand that I will be participating in a research project that requires me to partake in a Sudoku puzzle and complete a packet of surveys that includes an optimistic/pessimistic scale, a punctuality scale, and a demographic survey. I understand that I should be able to complete the entire study within 20 minutes. I understand that I am allowed to skip any question that makes me feel uncomfortable answering. I understand that my participation in this study is voluntary, and I can withdraw from the research at any time without penalty. I understand that the information obtained from my responses will be analyzed only as part of cumulative data, and that identifying information will be absent from the data in order to ensure anonymity. I understand that my responses will be kept confidential and that the data collected from this study will be available for research and educational purposes. I verify that I do not have a visual impairment that could restrict me from participating in a Sudoku puzzle and a survey. Lastly, I verify that I am at least 18 years of age and am legally able to consent or that I am under the age of 18 but have completed parental consent form that allows me to give consent as a minor.

\_\_\_\_\_ Date: \_\_\_\_\_  
 (Signature of participant)

\_\_\_\_\_ Date: \_\_\_\_\_  
 (Signature of researcher obtaining consent)

Researcher:  
 Madison Vander Wielen  
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## Appendix I

**Feedback letter**

Thank you for participating in my research study. The study was conducted in order to determine whether perception of time reflects a person's punctuality and optimism level. There was a packet of survey questions that measured your optimism level, punctuality level, and recorded your demographics. The perception of time was measured by timing you while completing the Sudoku puzzle and comparing the actual time lapsed to the time after which you thought 2 min had passed.

Levine, West, and Reis (1980) conducted a study that wanted to look at the United States and Brazil and the perception of time and punctuality in the two countries. Levine et al. (1980) found that the participants in Brazil were less punctual than participants in the United States. Brazilians felt that people who are less punctual are friendlier and happier compared to people who are punctual. These same participants who rated themselves as not punctual were also more likely to estimate the wrong time when asked what time it was (Levine et al., 1980). I hypothesize that a person's degree of punctuality is related to his/her perception of the duration of time that had passed and that it is also related to the person's level of optimism. Specifically, I predict that people who are more punctual tend to underestimate the amount of time that has passed whereas those who are often less punctual have a tendency to overestimate the amount of time that has passed. Furthermore, I believe that a person's trait of punctuality is negatively correlated with his/her trait of optimism. It is my own thought that a person who is constantly late is optimistic about what they are able to accomplish or complete in a time period before a scheduled meeting.

Please remember, I am interested in the overall findings based on cumulative data. No information about you will be associated with any of the findings, nor will anyone be able to trace your responses on an individual basis.

If you are interested in obtaining the final results of this study based on cumulative data, or if you have any questions or concerns regarding any portion of this research study, please feel free to let me know now, or in the future. My contact information is found at the bottom of this page.

Thank you again for your valuable contribution to this study.

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## Appendix J

**Informed Consent**

I \_\_\_\_\_ (print name), understand that my time of arrival was observed and recorded before I consented to participating in this research project. By voluntarily signing this consent form, I am allowing the data collected to be used in this research project. If you object to allowing the collected data to be used in this research project, then return this form, unsigned and all data collected before you signed the first consent form will be discarded.

\_\_\_\_\_ Date: \_\_\_\_\_  
(Signature of participant)

\_\_\_\_\_ Date: \_\_\_\_\_  
(Signature of researcher obtaining consent)

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