1. Index
   1. About Me
      1. Hello! Hola! 你好！Ahoj!
      2. My name is Ray, and I am a third-year undergraduate student at The Ohio State University! I am studying both Neuroscience and Linguistics, and since I have a cognitive/computational focus in both I will also be getting a minor in Computer and Information Sciences. My interest has always been in foreign languages growing up, specifically learning as many as possible. Since I’ve started college however, my passion for learning language has begun to tie into my interests in linguistics, psychology, and computer science. Linguistics captivated me as I was learning languages, and it made everything make so much more sense and gave a reason behind those pesky “irregulars.” As I got further into Neuroscience, I started to hear about the fascinating world of Cognitive Science, and once I was able to take my first class and attend a seminar in Cognitive Science, I was hooked. The more I learned about Cognitive Science, the more I started to realize this field of study combined everything I loved so much, and enabled me to start asking questions about the nature of how we learn, specifically how we learn language. Soon enough, I realized my childhood interest in computers was helping more and more as I got into my studies, and with great joy I found out I had enough time before graduation to add my Computer and Information Sciences minor. I truly feel like I have found the perfect blend of everything that interests me most. The work that I do and the things that I study are not just school and work anymore, they’re what I enjoy and do for fun.
   2. Coursework
      1. Body
   3. Teaching
      1. Buckeye
      2. XPlorer’s
   4. Contact
      1. Body
2. Research
   1. Developmental Language and Cognition Lab
      1. PI: Dr. Laura Wagner
      2. With Dr. Laura Wagner I am researching how verbs, their modifiers, and our knowledge of the world affects our mental representations of events-- more simply, how we imagine what people talk about. We are looking at verbs rather than other parts of speech because they define the described event and how other parts of the sentence interact. Specifically, we are interested in how world knowledge affects our representation of how much an event has been completed! For example, how much and what kind of a sandwich is imagined when we say <i> the child ate a sandwich </i> compared to <i> the bodybuilder ate a sandwich. </i> This is interesting because every language specifies the endpoints of an event in some manner, and this reveals how language can be influenced by world knowledge.
      3. Dr. Wagner and I hope to clarify the manner in which adult world knowledge affects mental representations of different events through language. We are doing this through a series of experiments on adults at Columbus' Center of Science and Industry (COSI), in which we ask adults to provide their judgements on the completion of various sentences, and seeing whether or not their judgements are a quantifiable function of their world knowledge. We will be performing this experiment with the aid of a data collection application I developed for COSI, which can be customized to suite the needs for future experiments outside of this work.
   2. Undergraduate Research Seminar
      1. LING 4780
      2. Ray Patt
      3. What is the seminar
         1. This a course offered to Linguistics students at The Ohio State University to provide exposure to cutting-edge research performed by OSU researchers that interests the individual student. We were asked to find a faculty mentor to work with throughout the course of a semester, and develop a research project of interest. By the end of the semester, we are expected to present the study itself and the results we obtain in a Linguistics Society of America style format. Students in the class are expected to come prepared each week with developments on their project, be it background literature collection, data collection, abstract drafts, and presentation drafts.
      4. What I did for the seminar
         1. Due to the fact that OSU does not have any faculty researching specifically what I am interested in (computer-assisted language learning) I took it upon myself to get in touch with professors around the world along with Ohio State faculty who could help. I have received resources, tips, and guidance from Dr. Laura Wagner, Dr. John Grinstead, Dr. Micha Elsner from The Ohio State University, Dr. Detmar Meurers from Tübingen University, and Dr. Shannon Sauro from Malmö University.
         2. My specific project is focusing on the use of comics and dynamic assessment to foster native-like usage of the preterit and imperfect tenses in students learning Spanish as a second language. It has previously been found that the Spanish preterit and imperfect focus more on foregrounding and backgrounding information than so lexical aspect (whether or not the described event has an end point). Comic books are also able to express foregrounding and aspect in very similar ways as described by Scott McCloud’s *Understand Comics [the Invisible Art]*. I am developing a web-based tool to help Spanish learners nativize their usage of the preterit and imperfect by increasing contextual clues defined by Scott McCloud as being more related to foregrounding or backgrounding. This should encourage them to create more correct choices in their production, and I predict that their reliance on the contextual cues should decrease over time as they become more native-like. The comics being used and modified come from *The World of Quino* by Quino, and the description of the comic used to test comic understanding is borrowed Dr. Maximo Salaberry’s 2008 article *Assessing the Effect of Lexical Aspect and Grounding on the Acquisition of L2 Spanish past tense Morphology among L1 English Speakers.* I also use the data collected from Salaberry (2008) to put the learners into levels of acquisition based on their percentage of correct answers for each type of situation.
      5. What I gained from the seminar
         1. From this seminar I have learned much about the research process, and the communication and feedback involved in research. I learned how much diligence it takes to do research, as it’s real easy to try to solve the world’s biggest problems, but being general won’t help to solve the problems at all. Timing was another huge factor of the course, as we had to meet deadlines every week, and were expected to develop and perform an entire experiment in just one semester. Most importantly, however, I feel like I’ve learned a lot about what interests me most in my field. This course gave man opportunity to explore something which has interested me for the past couple years, and has helped me realize the passion I have for computer-assisted language learning.
   3. Child Language Ability Lab
      1. PI: Dr. Monique Mills
      2. I helped Dr. Monique Mill's lab with transcription work over the summer of 2018. The research project I helped transcribe for focused on the effects of racial bias on teaching and learning language, specifically how racial biases and caretaker's linguistic knowledge influence common core reading results. The majority of my work was spent as long nights listening to speech segments for hours until I felt that I had every "um" "uh" and pause in my transcription. I was tasked with transcribing interviews with black mothers, which required learning the Systematic Analysis of Language Transcripts (SALT) conventions, as well as the StartStop foot petal and transcription software.
      3. From this project I learned a lot about time management and the diligence required to meet strict deadlines. We were only allowed to work for a certain period of time, and we were expected to have all of our files transcribed to the best of our ability by the end of that period. We were allowed to spend as much or as little time on transcribing as wanted, so long as they met the SALT standards and were accurate as compared to an experienced transcriber. I found myself spending hours on end trying to perfect my transcription, spending half an hour on a sentence alone. I scheduled time throughout the week amidst working two jobs, and was able to get all of my files finished and received many acknowledgements on my level of detail and accuracy.
   4. CCBS Undergraduate Summer Institute (CUSI)
      1. Center for Cognitive and Brain Sciences (CCBS)
      2. Dr. Andy Leber
      3. Also during the summer of 2018, I took part in Ohio State’s Center for Cognitive and Brain Sciences’ (CCBS) Undergraduate Summer Institute (CUSI). CCBS was looking for a group of undergraduate student researchers with an interest in pursuing cognitive science research in graduate school or industry after their undergraduate studies. The weekly meetings we were given the opportunity to attend consisted of a talk from an OSU faculty member about their research in Cognitive Science, a talk given by either a faculty member or graduate students on the research process and post-undergraduate work, and finally a lunch with the speakers to provide us an opportunity to interact with them and ask questions. The research talks presented to us all focused on Cognitive Science but ranged from music (Dr. David Huron) to computational linguistics (Dr. Micha Elsner) to attention modeling (Dr. Andy Leber). The workshops provided to us ranged anywhere from applying to graduate school, best research practices, and careers outside of academia. A full itinerary can be found at <i> here </i>.
3. Buckeye Language Network
   1. Data Collection Application
      1. Language Science Research Lab
      2. Description of Application
         1. Dr. Laura Wagner and other researchers make use of COSI every day to gather data from a large pool of subjects. The only limiting factors for the researchers is the need to personally talk to people and the attention spans of 4-7 year old children. In a perfect world we could get all 4-7 year old children to engage in the experiment, but that’s just not always feasible. What is feasible on the other hand, is making the process of collecting data faster. I have been working to develop an iPad application using the Swift programming language to collect data in the middle of COSI, without needing to take parents and children from the experience. In fact, Dr. Laura Wagner and I hope to get the iPad a standalone exhibit so anyone walking by can take part in an experiment—even without a researcher begging!
         2. While anyone could create an application for data collection, I am hoping to make this application accessible to researchers outside of the Language Science Research Center, outside of the Buckeye Language Network, and hopefully even outside of The Ohio State University. To do so I have been making the experimental information (introductory questions, consent information, experimental design, independent and dependent variable measures, and the data collected) entirely customizable and accessible through a Google Sheet. From this, I had to learn Google’s Swift API, which proved to be rather difficult as I was also only just beginning to learn swift. However, I did not let that stop me. This will allow researchers to collaborate on a single experiment without needing to share and constantly update shared files, and more importantly makes the application being run accessible to anyone with a Google Sheet file! The ultimate goal, however, is to only use Google Sheets as a back-end platform for data storage, and to have a desktop application logged into your Google account which can modify and access the experiment.
         3. Currently, we are a long way from creating a tool connecting COSI to an international network of researchers. However, we are beginning to implement the application into the data collection process at COSI. This November, we will be performing a pilot study done entirely with the application. After that, we will begin to test it’s ability for modification for a follow-up experiment. Finally, once we have been able to successfully make use of the entire application, we hope to push it out to other researchers within the Buckeye Language Network.
   2. Columbus Center of Science and Industry (COSI)
      1. Language Science Research Lab
      2. Body
   3. Training in Informal Science Outreach
      1. LING/PSYCH 5700
      2. Dr. Leslie Moore at COSI
      3. Body
4. NeuroAmbassador
   1. NeuroAmbassador Program
      1. Program Director: Dr. Charlie Campbell
      2. Associate Directors: Lindsay Strehle, Max Chou
      3. DATES
      4. Body
   2. How I got involved…
      1. Body
   3. Summer Orientations
      1. Body
5. Teaching
   1. Buckeye Gymnastics
      1. This past summer I started working as a gymnastics instructor for Buckeye Gymnastics in Westerville, Ohio. I am currently coaching five classes of kids ranging from 4-10 years old! The classes I teach are called “Mighty Warrior” and “Ultimate Warrior” and are focused on physical movement similar to that used in the show *American Ninja Warrior* combined with gymnastics. I really enjoy letting the kids get involved with the activities they do, and incorporate their ideas into my lesson plans. We often do circuits with the gymnastics equipment, and encourage each other to go as fast as we can. I have a strong pride in my little warriors, and have watched them grow so much since I’ve started. They’ve learned to encourage one another, and when one of them struggles the rest step in to help by giving advice, asking if they’re okay, or letting me know something is wrong. I look forward to seeing where these little warriors end up and how far they’ll come!
   2. XPlorers 2018
      1. During the summer of 2018 I worked at a summer camp in Toledo, Spain teaching both English and Robotics to child from the Castile-La Mancha region. I spent about half of my day in English, and the other half in Spanish. Throughout the course of the camp, we were expected to stay overnight with the kids who stayed at the camp for the summer. That is primarily where I did most of my own learning about the Spanish language and culture. I got to connect with my coworkers, hear about the way they live, hear about their government and their sentiments towards it, hear where they want to go, see the way they interact with kids, and see the way kids interact with each other, and I was fortunate enough to do all of this in their own language. It was all such a culture shock, but I felt accepted, and from this acceptance I was able to create bonds that last to this day as well as an unending understanding of another culture.
      2. During the day, I got to take my group of kids, typically the little ones (3-6 years old!), to their different classes be it Robotics, Mathematics (KUMON), Swimming, Physical Education, or English. While my group was in class, I would hop to and from the English classroom and the Robotics classroom, engaging the kids in English as I passed between rooms. In the robotics room I was able to offer my knowledge of computer science, and the kids were able to make use of it to make their own Lego Robotix. More often than not, we got to play a fun language game of “how do you say this? Do you even know what I’m saying?” as I struggled with the different technical terms. I never thought I’d need to know how to say “gear” in Spanish! I think this “game” was the best part of the day, as we all came together through language to work towards creating the little robot of these children’s dreams. As the camp went on, I began to realize that this communication was the true purpose of the camp, not just learning English and Robotics. The camp was there to teach these kids how to break barriers, even linguistic barriers, to help create connections and to solve the world’s greatest problems.