

Language and Memory

Mya Rodriguez

April 15, 2021

Dr. Crystal Kreidler

Angelo State University

### Language and Memory

Language is an extremely useful and important skill that humans possess to communicate with one another, express thoughts and feelings, build and strengthen relationships, and build memories. Language helps people envision past memories and build future plans. Language is the instruction of imagination, as without language we would be unable to imagine movements and memories (Corballis, 2019). Without language, humans would not be able to conceptualize memories (Wang & Gennari, 2019). Moreover, language actually would not exist without memory. People's working memory would not be able to understand concepts and process events sequentially, implicit memory would not store the grammatical rules in language, and episodic memory would not exist to help us think about future plans and communicate events (Corballis, 2019). The ability for humans to build schemas to represent the events in their memory through language is a great hallmark of human cognition (Wang & Gennari, 2019). The following paper will provide a literature review on how memory can be used to shape memory and event recall.

A study conducted by Wang and Gennari (2019) assessed the relationship between time, memory, and language by looking at how individuals recall, create, and/or replay events that they have previously experienced through their language. Researchers looked at This by asking two specific questions: 'what determines the duration and clock accuracy of event reproductions from memory' and 'how are these reproductions modulated by linguistic descriptions' (Wang & Gennari, 2019). Moreover, in the experiment, Wang and Gennari (2019) looked at whether conceptualizations that were language-induced during the encoding process would exert an influence upon participants' reproductions of later events or their mental replays. Various studies were conducted with a manipulation of language, frequencies of linguistic and/or visual exposures, and retrieval cues. They did this by having participants study cartoon-like animations

with descriptive phrases which were used later for memory tests. Participants were asked to replay the animations that they saw in their minds after a distraction task and asked to verbally recall all the details they could about each animation that they were shown (Wang & Gennari, 2019). Therefore, their main goal was to pinpoint how cognitive mechanisms work behind event memory in relation to language and time. It was hypothesized that when exposure to the same stimuli multiple times is increased, then more event information will be learned (Wang & Gennari, 2019). Moreover, the researchers also hypothesized that the speed implied in the descriptive phrases appearing with the cartoon-like animations would influence the participants' encoding of the visual and/or linguistic retrieval of the events. For example, a descriptive phrase stating, "a rocket being launched into the sky" will be recalled faster by a participant compared to the statement "a rocket being raised into the sky" (Wang & Gennari, 2019). This is similar to other studies that have looked at the effects of certain words on memory which indicate that sometimes the way something is framed can influence people's recall. The experiments run by Wang and Gennari (2019) supported their hypotheses. However, there does need to be more research on language and more specific mechanisms of memory retrieval.

In the future, studies investigating language and memory can examine if bilingual individuals have better memory recall in their first or second language. Participants can be a part of a study similar to the one conducted by Wang and Gennari (2019) but have descriptive phrases in both languages that the participant would have to switch between throughout the study. To take the research that Wang and Gennari (2019) conducted a step further, researchers could use ERP machines to see how quickly participants are processing information from the descriptive phrases and cartoon picture stimuli in the different languages. In addition, MRI

machines can help provide images of what part of the brain are being activated when processing both descriptive phrases when participants see it on the screen.

Another way to assess language and memory is to see what language bilingual individuals typically think with and recall episodic memories with. Granted, this would be a little more difficult because it is hard to see this in a controlled setting. Researchers are not exactly able to see what language people think in because of the constant switch between languages a bilingual speaker might make. Moreover, it is difficult to ask someone what language they think in apart from surveys and longitudinal studies. The issue with surveys and studies is that these methods are too controlled and may be asserting influence upon the participant. However, it can possibly be assessed in the future with better methods and technology.

Language is an interesting and fascinating skill that humans possess because of how useful it is in many instances, and very importantly, memory. Memory is an essential part of our lives as well because it makes us who we are. Without memories, people would not be unique. An individual is unique due to the variety of experiences they recollect, and the way that these experiences mold them. This is possible through language and memory. Without language and memory, humans would be unable to exist and move around as easily as they do. By building different types of schemas, people are able to give themselves shortcuts in their minds that allow them to move with ease. Without this, we would not be human because we would be unable to create and sustain a sense of self. More research on the association between language and memory must be conducted to create a clearer path in how language aids in building memories. More specifically, to find more neuropathological loops and paths that strengthen memory and language to help researchers and scientists find out how to strengthen and preserve more memories. This would greatly aid in prevention of neurological diseases such as Alzheimer's.

## References:

Corballis, M. C. (2019). Language, memory, and mental time travel: an evolutionary perspective.

*Frontiers in Human Neuroscience*, *13*. <https://doi.org/10.3389/fnhum.2019.00217>

Wang, Y., & Gennari, S. P. (2019). How language and event recall can shape memory for time.

*Cognitive Psychology*, *108*, 1–21. <https://doi.org/10.1016/j.cogpsych.2018.10.003>