

# "I Don't Know What I Mean Until I Say It": The Need to Incorporate the Effects of Language Generation on the Speaker

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## ABSTRACT

Most people have had the experience of understanding something better after they have explained it or of being more sympathetic to a point of view after having had to speak on its behalf. Yet AI models of language generation are almost universally "output only" and do not model the effects of language production on the speaker or writer. Researchers and designers may make great strides in modeling language production and in building systems that interact with users at higher levels of abstraction, if they incorporate the side-effects of "putting thoughts into words". This may be particularly important for systems that work with stories.

## Author Keywords

Stories, language generation, learning, authoring

## INTRODUCTION

The act of articulating thoughts changes those thoughts. People alter their knowledge, beliefs and opinions by stating them. While this process has been studied by psychologists, it has not been examined by the language generation community which has viewed language production as a one way process from intent to plan, to content, to syntax, to words. This view is a bit surprising, given that so much progress has been made towards modeling *language understanding* by considering top-down effects wherein the prior state of the understander's mind affects how he or she interprets meaning. It seems strange not to analogously consider the effects of language production on the producer.

People make choices when they make language. They are continually casting whatever it is they are trying to express into the frames or schemas attached to the words they select. Sometimes speakers are unaware of the changes that occur during their generation while at other times they wish to duplicate this change in the mind of their listeners – they want to "bring their audience along" in their thinking. This exploitation of the teller's own thought processes is one of the potential sources of richness in story telling: the teller may be telling one story about something that happened and a second story about the evolution of his or her understanding of events as they are being narrated.

For example, imagine retelling the story of "The boy Who Cried Wolf" to be an admonishment about continuing to rely on a warning system after loosing confidence in it. To

tell the story in a way that makes this new point, the teller must direct attention to the folly committed by the villagers for leaving the boy, whom they no longer trust, to watch the sheep. After telling this new version of the teller might change his or her attitude toward the mischievous boy and might even come to understand future situations, in which non-performers remain in positions of responsibility, as problems in leadership rather than in performance.

Story based pedagogy is a critical application area for models of how language production affects the producer. While Aesopic Teaching, *teaching* by telling stories, has been advocated as a complement to Socratic Teaching (1,2), methods which include story telling by *learners* are also in common use. Knowing how and why language production affects what the producer knows will allow more deliberate use of these practices.

A "story-based interface" which is intended to allow a user to create or tell a story may benefit if it accommodates the process of change that will occur in the user's knowledge and beliefs over the course of the telling. This may manifest as a need for editing affordances or it might require that the interface explicitly display the course of change in the user's thinking and thus provide the user with confidence that this trajectory will be presented to future understanders of the story.

It is time to start building initial models of language generating agents whose internal state is altered by their self-expression. These forays can be followed by larger scale systems as well as by the design of experiments to begin an imperial investigation of language creation as a learning and self-modifying process.

## REFERENCES

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