STICK OR SWITCH: A SIMPLE SELECTION HEURISTIC MAY DRIVE ADAPTIVE LANGAUGE EVOLUTION

NICOLAS FAY
School of Psychology, University of Western Australia,
Perth, Western Australia
nicolas.fay@gmail.com

SHANE ROGERS
School of Psychology and Social Science, Edith Cowan University
Joondalp, Western Australia
shane.rogers@ecu.edu.au

1. Introduction

If you describe shape (h) from Figure 1 as "the arrow", but your addressee describes it as the "sleepwalker", will this information change how you communicate the shape to your addressee? Will you stick with your original shape description, or switch to your addressee's description? The experiment reported forces participants to choose between the two competing shape descriptions (personal or addressee), and uses participants' ratings of description informativeness to predict their choice (stick or switch).

Classic theories, which emphasize the role of audience design to effective interpersonal communication, predict that people will adopt their addressee's perspective. By contrast, minimalist theories suggest egocentric communication is common (for reviews see Brennan & Hanna, 2009; Shintel & Keysar, 2009). Tamariz et al (2014), modeling Fay et al's (2010) empirical data, show that the spread of communication variants in a population can be explained via the interplay between an egocentric-bias and a content-bias. When people encounter a new sign-to-meaning mapping they tend to reuse the sign they had used before (egocentric-bias) unless the newly encountered sign is perceived to be superior (content-bias).

The present study empirically tests this simple selection heuristic. It also sheds light on the situational factors that cause people to take their addressee's perspective or communicate egocentrically.

2. Method

Participants (N=112) typed descriptions for 18 abstract geometric shapes (see Figure 1). Next they were presented with their own description for each shape alongside the shape description produced by their addressee. Participants selected which shape description to return to their addressee (own, addressee). Finally, participants were again shown each pair of shape descriptions and indicated if they believed each description would allow a naïve person to identify the intended shape (Yes, No). This is our measure of informativeness.

3. Results & Discussion

Participants' communication behaviour was predicted by how informative they perceived the different shape descriptions to be. When their personal shape description was perceived to be more informative than their addressee's description, there was a strong bias to communicate egocentrically. By contrast, when their addressee's shape description was perceived to be more informative, there was a strong bias to take their addressee's perspective. When the shape descriptions were perceived to be equally informative, there was a moderate bias to communicate egocentrically. This simple selection heuristic may be critical to the adaptive evolution of human communication systems, and cumulative cultural evolution more generally.

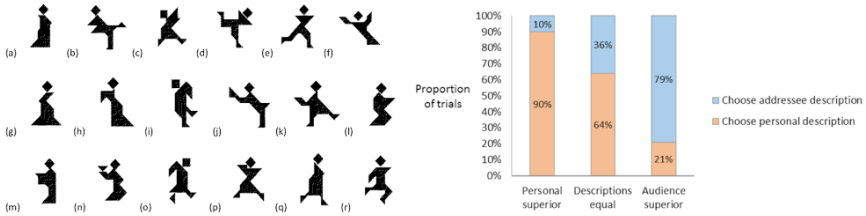

Figure 1. Stimuli used in the experiment (left) and the results (right).

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