LINGUISTIC COMPLEXITY INCREASES AS A FUNCTION OF ATTRACTIVENESS IN INTERSEXUAL COMMUNICATION. TENTATIVE EXPERIMENTAL SUPPORT

CHARLOTTE ESSERS, FREEK VAN DE VELDE*

*freek.vandevelde@kuleuven.be
Dept. of Linguistics – QLVL, KU Leuven, Belgium

Language is not merely a tool for transmitting information, but serves other functions as well, though there is neither a shortage of theories, from language's role in social grooming (Dunbar 1996) to the Beau-Geste hypothesis about territorial defense (Fitch 2000: 264), nor a lack of controversy surrounding these theories. One of the more robust ideas is that language plays a crucial role in courting behavior. Vocalization is especially important in tournament avian species, and though humans are arguably less tournament-oriented (Prum 2017), they still have various ways to signal sexual fitness. Given the highly communicative nature of human behavior, it comes as no surprise that language plays an important role here, both as a signal of fitness by ostentatious display of a costly trait (Miller 2000: 305; Rosenberg & Tunney 2008), as a runaway process in sexual antagonism to detect deception (Ridley 1999: 115-116), and in the context of assortative mating. The idea that language evolved through sexual selection in fact goes back to Darwin (1871) already.

In this paper, we set out to test whether we could detect an impact of courtship behavior on language. If language is indeed a signal of fitness, one may expect that language complexity will increase during flirtation. On the other hand, there is research showing that men may be cognitively impaired when talking to attractive women (Karremans et al. 2009), a finding that is potentially at variance with the drive to display higher complexity.

For ethical as well as practical reasons, it is hard to induce situations of flirtation in a controlled experiment, but in reality, similar behavior can already be detected in normal interaction. Earlier research has shown that men show different behavior depending on whether they find the interviewer attractive or not. In the classical 'frizzy wig' experiment by Sigall & Aronson (1969), for instance, male test subjects turned out to be more sensitive to the results of a personality test when it was administered by an attractive woman than by an unattractive woman. Starting from this observation, we conducted an experiment to see whether the attractiveness of the interviewer had an impact on the interviewee's language complexity.

The experiment was conducted with 40 male participants between the ages of 18 and 25 years old. As part of the between-subject design, 20 participants were interviewed by a confederate in an attractive condition, while the other 20 participants were interviewed by the same confederate in a non-attractive condition. Participants were not aware of the experiment's aim to avoid the observer's paradox. As a distractor, participants were asked to find an optical illusion in ten photographs and were later asked to answer some personal questions about their family, education and personality. The difference in attractiveness of the interviewer was emphasized through make-up, glasses and clothing. To make sure the difference in perceived attractiveness was real, subjects were asked to rate the interviewer's attractiveness, write down their answer anonymously on a slip of paper, which was then put in an urn (per condition). The interviews were transcribed verbatim and subjected to linguistic analysis by the application T-Scan, which measures linguistic complexity on several predictors for Dutch. Of these predictors, the following were selected for their intuitive correlation with linguistic complexity: total number of words, total number of sentences, morphemes per word, word frequency, sentence length, level of syntactic depth, type-token-ratio, lexical diversity, and the use of connectives (Kraf & Pander Maat 2009; Pander Maat et al. 2017). As we need the whole verbatim transcript per participant for the calculation of the complexity metrics, the total number of observations per condition is limited (2 x 20), precluding an analysis in which the different metrics can be entered as independent variables in a logistic regression with the attractiveness condition as the outcome. Such an analysis would also suffer from multicollinearity. Instead, we carried out one t-test per complexity metric, treating the attractiveness as the independent variable. Even though the difference in the stimulus is fairly small, with just two different appearances of the same woman, the results reveal that the

interviewees' language was consistently higher in the attractive condition, though the results do not reach the common alpha level of 0.05, due to the restricted size of the participants sample, leading to underpowered tests. Still, the consistency of the difference in all the tests applied suggest – albeit tentatively – that Darwin's sexual selection theory of language still leave a detectable signal in present day language use.

References

Darwin, C. 1871. *The descent of man, and selection in relation to sex*. London: John Murray.

Dunbar, R. 1996. *Evolution of language*. London: Faber & Faber.

Fitch, W. T. 2000. 'The evolution of speech: a comparative review'. *Trends in Cognitive Sciences* 4(7): 258-267.

Karremans, J., T. Verwijmeren, T. Pronk. & M. Reitsma. 2009. 'Interacting with women can impair men's cognitive functioning'. *Journal of Experimental Social Psychology* 45(4): 1041-1044.

Kraf, Rogier & Pander Maat, Henk. 2009. 'Leesbaarheidsonderzoek: oude problemen, nieuwe kansen'. *Tijdschrift voor Taalbeheersing* 31(2): 97-123.

Miller, G. 2000. *The mating mind. How sexual choice shaped the evolution of human nature*. New York: Doubleday.

Pander Maat, H., R. Kraf & N. Dekker. 2017. *Handleiding T-Scan*.

Prum, R.O. 2017. *The evolution of beauty. How Darwin's forgotten theory of mate choice shapes the animal world – and us*. New York: Doubleday.

Ridley, M. 1999. *Genome. The autobiography of a species in 23 chapters*. London: Fourth Estate.

Rosenberg, J. & R. Tunney. 2008. 'Human vocabulary use as display'. *Evolutionary Psychology* 6(3): 538-549.

Sigall, H. & E. Aronson. 1969. 'Liking for an evaluator as a function of her physical attractiveness and nature of the evaluations'. *Journal of Experimental Social Psychology* 5(1): 93-100.