

Is language less cumulative than other culture? Indicators of breakdown and build-up of complexity in pidgins, creoles and non-contact languages

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In the study of cultural evolution, human culture is generally assumed to be cumulative, implying increasing complexity and diversity over time (Enquist et al. 2011, Lewis & Laland 2012). Recent studies suggest that evolutionary mechanisms operate differently in different cultural domains (Tamariz et al. 2016), but it has not been discussed whether all mechanisms result in cumulativeness. Experiments have shown that compositional language structure emerge as a trade-off between learnability and expressivity (Kirby et al., 2008, 2015), but there is no evidence of languages generally becoming more compositional, or regular, over time. As all modern natural languages are expressive enough for human communicative needs and compressed enough for generational transmission, we suggest that linguistic complexity is not currently cumulative but breaks down and builds up in cycles triggered by demographically determined variation in learnability and expressivity pressures. We focus on pidgins, a special case of natural languages where the expressivity pressure is presumably weaker and learnability pressure stronger than in other languages. We compare pidgins to creoles, where both expressivity and learnability pressures are presumably high, and non-contact languages where the learnability pressure is presumably lower, allowing for more complexity. We analyze compiled material from spoken and written pidgins, spoken creoles and non-contact languages and a parallel bible corpus, applying two complexity measures: the relation between word length and frequency, and pronominal morphology. We observe a smaller degree of exponentiality in the negative correlation between word length and frequency in pidgins than in their lexifiers, likely reflecting the loss of short and common grammatical words. Creoles expose a higher exponentiality in this correlation, which may reflect a newly built up analytical grammar. For pronouns, we observe expected reduced marking of person, number, case and gender in pidgins, increasing in creoles, being highest in non-contact languages.

References

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