

## More than accent: linguistic and cultural cues in the emergence of tag-based cooperation

*Comment on "The evolution of tag-based cooperation in humans: the case for accent" by Emma Cohen*

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The Target Article (TA) presents a strong and well-informed case for the potential of culturally transmitted cues in tag-based cooperation and highlights “accent” as a prime candidate. Cohen’s survey of the properties of viable tags introduces a conceptual apparatus that will be of use to future work in this domain, and her discussion of the way gradient tag-traits enable the formation of flexible networks on different scales is a useful reminder of the dynamic and continuous (rather than stable and discrete) character of human sociality throughout evolutionary history. Here we highlight several issues that might affect the generality and strength of the account, and in particular the claim that “accent” might have played a privileged role in the evolution of human cooperation.

The TA seems to oscillate between different senses of “accent”: in most places it seems to be a rather circumscribed notion of *phonetic and prosodic variation*, but in others it seems to include *variation at any level of linguistic organisation* (including also the lexicon, grammar and even pragmatics). This equivocation is indicative of a more general puzzle that ultimately remains unresolved in the TA: while “accent” (in the narrow sense) clearly has the potential to function as an effective tag, it is unclear why it should be privileged over other levels of linguistic variation that index social identities, and even over certain other culturally transmitted traits, something we return to below.

The TA’s notion of (narrow) “accent” seems typical of large, agricultural, settled populations with long shared histories whose languages show significant internal variation. It is in such populations that many sociolinguistic studies have documented acute awareness of subtle gradient accentual differences. The TA cites this work in support of the case for “accent” in the evolution of human cooperation, but it is questionable whether it constitutes the most useful model. If “accent” is to have played an important role as a tag during human evolution, it must have been able to do its work in contexts more characteristic of pre-neolithic societies: small group sizes, high mobility, loose large-scale structures, fission-fusion dynamics and possibly higher rates of local extinctions and recolonization (Ghiglieri 1987; Hawks 2008; Grove et al 2012; Eller et al 2004). In many such contexts, subtle accentual variation would likely be overshadowed by more prominent cues. Moreover, if modern hunter-gatherers are a useful model, any tag would also have to cope with the possibility of high rates of linguistic divergence, multilingualism, and

(linguistic) exogamy (Hill 1978, Bower 2010). These phenomena are not addressed in the TA nor in modelling work in this domain, yet they all complicate a simple case for “accent” and emphasize the need for more empirical and modelling research and more attention to the social and demographic features of early humans and their ancestors.

What could be the alternative? We favour a more inclusive view, in which “accent” was but one possible ingredient of a complex dynamic set of tags. As not all cooperative contexts would have resulted in similar costs due to invasion by non-cooperators, probably there was no single standard tag which kept cooperation going, but a flexible set of “tests” with different associated faking costs, the composition and relative importance of their components varying across *place* and *time* and depending on the *context* and *content* of particular interactions. While linguistic skills (including but not limited to “accent”) may have been especially potent for the reasons mentioned in the TA, other plausible tags might include for instance body techniques (Mauss 1979), other forms of embodied cultural practices like walking style and posture (Bourdieu 1977), and body adornments (Richerson & Boyd 1998), all of which are salient, hard to fake, and acquired relatively cost-effectively in (early) socialisation, and some of which may well be more ancient than linguistic cues. Even “biological” phenotypes such as facial features might play a role in this mix of possible tags as proxies for assessing genetic relatedness, not as simple Greenbeard phenomena, but as one of many cues for a set of heuristics (Gigerenzer et al 2000).

In sum, while we agree that “accent” makes a good tag (and possibly plays a role in tag-based cooperation in modern societies), we are unconvinced of the case for its privileged role in the evolution of human cooperation. Rather than looking for a single “magic bullet”, we favour a model where “accent” was but one possible ingredient of a complex dynamic set of possible tags. The hunt for candidate tags is open: Cohen has made a case for “accent”, and we look forward to future research in which other socially acquired features and skills are assessed according to the conceptual framework developed in the TA. A complementary endeavour will be to provide a model for the integration and dynamic selection of the most appropriate tags for a given place, time and interaction.

## **Bibliography**

- Bourdieu, Pierre. 1977. *Outline of a Theory of Practice*. Trans. R. Nice. Cambridge: Cambridge University Press.
- Bower, Claire. 2010. Correlates of Language Change in Hunter-Gatherer and Other “Small” Languages. *Language and Linguistics Compass* 4: 665–679.
- Eller, E., Hawks, J. & Relethford, J. H. 2004. Local extinction and recolonization, species effective population size, and modern human origins. *Human Biology* 76: 689-709.
- Ghiglieri, Michael P. 1987. Sociobiology of the Great Apes and the Hominid Ancestor. *Journal of Human Evolution* 16: 319–357.
- Gigerenzer, Gerd, Peter M. Todd, and the ABC Research Group. 2000. *Simple Heuristics That Make Us Smart*. Oxford University Press.
- Grove, M., Pearce, E. & Dunbar, R. I. M. 2012. Fission-fusion and the evolution of hominin social systems. *Journal of Human Evolution* 62: 191-200.
- Hawks, J. 2008. From Genes to Numbers: Effective Population Sizes in Human Evolution. In *Recent Advances in Paleodemography*, Ed. Bocquet-Appel, J.-P. Springer:Dordrecht, pp. 9 - 30.
- Hill, Jane H. 1978. Language Contact Systems and Human Adaptations. *Journal of Anthropological Research* 34: 1–26.

Mauss, Marcel. 1979. "The Notion of Body Techniques." In *Sociology and Psychology. Essays*, trans. Ben Brewster, 97–123. London: Routledge & Kegan Paul.

Richerson, Peter J., and Robert Boyd. 1998. "The Evolution of Human Ultra-sociality." In *Indoctrinability, Ideology, and Warfare: Evolutionary Perspectives*, ed. Irenäus Eibl-Eibesfeldt and Frank Kemp Salter, 71–95.