

reputational information.¹ Sensitivity to subtle variation in accent may therefore represent a unique social sense, a form of “social sonar,” that allows us to navigate our social world in ways that have yet to be examined in game-theoretic simulations. A more recent role for accent fits with Cohen’s account 3, that the tag-based system is not biologically specialized to use accent, but became useful in larger societies as cognitive systems for tracking socially relevant group markers were applied to the wealth of “free” information incorporated in accent.

Dan Dediu and Mark Dingemans²

Language and Genetics, Max Planck Institute for Psycholinguistics, Wundtlaan 1, Nijmegen, NL-6525 XD, Netherlands (dan.dediu@mpi.nl)/Language and Cognition, Max Planck Institute for Psycholinguistics, Wundtlaan 1, Nijmegen, NL-6525 XD, Netherlands.
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More than Accent: Linguistic and Cultural Cues in the Emergence of Tag-Based Cooperation

Emma Cohen 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 shape 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 affect the generality and strength of the account, in particular the claim that accent might have played a privileged role in the evolution of human cooperation.

Cohen 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 organization (including also the lexicon, grammar, and even pragmatics). This equivocation is indicative of a more general puzzle that ultimately remains unresolved in the paper: 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.

1. The “principle of information” (Pagel 2012) holds that we should adjust our willingness to cooperate to match the amount of information we have about a potential partner. Since reputational information flows along the same channels as language variation, accent could be an ideal proxy for quality of reputation information.

2. Both authors contributed equally to this comment, and author order is alphabetical.

Cohen’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 main article 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 preneolithic societies: small group sizes, high mobility, loose large-scale structures, fission-fusion dynamics, and possibly higher rates of local extinctions and recolonization (Eller, Hawks, and Relethford 2004; Ghiglieri 1987; Grove, Pearce, and Dunbar 2012; Hawks 2008). 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 (Bower 2010; Hill 1978). These phenomena are not addressed in the paper nor in modeling work in this domain, yet they all complicate a simple case for accent and emphasize the need for more empirical and modeling research and more attention to the social and demographic features of early humans and their ancestors.

What could be the alternative? We favor 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 that 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 paper, other plausible tags might include, for instance, body techniques (Mauss 1979), embodied cultural practices like walking style and posture (Bourdieu 1977; Youssouf et al. 1976), and permanent body adornments like tattooing and scarification (Joyce 2005), all of which are salient, hard to fake, and acquired relatively cost effectively in (early) socialization, 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 favor a model where accent was but one possible ingredient of a 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 cultural traits are assessed according to the conceptual framework developed in the paper. A complementary endeavor will be to provide a model for the integration and dynamic selection of the most appropriate tags for a given place, time, and interaction.

Katherine D. Kinzler

Department of Psychology, University of Chicago, 5848 South University Avenue, Chicago, IL 60637, U.S.A. (kinzler@uchicago.edu). 12 VI 12

Cohen's linguistic-tag-based account of human cooperation provides a discerning, carefully documented, and analytically forceful argument. Drawing on a large number of disciplines in the social sciences, she attempts the formidable task of describing the evolution of human cooperation and seeks explanatory power over many aspects of modern human sociality. As a psychologist, I am particularly intrigued by the interesting empirical predictions about human social behaviors that stem from Cohen's work. Some predictions are clear; furthermore, additional empirical inquiries could refine the theory and advance the synergistic dialogue between empiricists and theorists that Cohen so eloquently begins.

Cohen reviews experimental literature suggesting that, early in development, children attend to accent in guiding their early social preferences. Much recent research in developmental psychology (e.g., by Warneken, Tomasello, and colleagues) provides evidence that children are spontaneously helpful to others. Critically, interesting future experiments could probe whether children's earliest collaborative gestures are directed most reliably toward unknown others who exhibit a local accent.

Other interesting predictions can be made about the language-based social behavior of modern humans (both adults and children) based on Cohen's work. Cohen discusses the possibility of "accent chameleons," or those who convincingly assume a nonnative accent. If accent is interpreted as an honest signal of native-group membership that begets collaborative behavior, and a supposed native speaker speaks in a manner that betrays that categorization, he or she might be judged harshly. This idea could easily be tested in a laboratory setting. Potentially even more intriguingly, Cohen describes that a tag-based approach allows for some flexibility in the system. Depending on the ecological conditions at play, individuals could extend their range of accent tolerance to include a wider distinction if resources were plentiful or larger scale collaboration was advantageous, whereas they might shrink the range of accents that are accepted as "local" in situations of scarcity or when in competition with rival neighboring groups. Cohen argues that social selection mechanisms could thus be used to explain language variation and "spe-

ciation" in modern times, where the degree of ecological risk across a geographic area could predict the degree of language diversity. I propose that such effects might be observed in a laboratory setting, too, which could shed additional light on the mechanisms that guide both linguistic perception and diversification. When placed in a simulated situation of either scarcity or plenty, listeners might differentially perceive linguistic boundaries in categorizing which accents would count as "in-group" versus "out-group."

Furthermore, the ideas presented in this paper could facilitate interesting experimental explorations concerning people's perception of accent as continuous versus dichotomous. One aspect of Cohen's model specifies that accents are comparable along a continuous dimension and that this linguistic continuity allows for measures of dialect difference. Indeed, research in sociolinguistics supports the idea that accents can change subtly and continuously over geographic spaces. Yet, Cohen also reviews evidence that individuals are better able to discriminate subtle differences in accents that are similar to their own accent, and that adults can even exhibit out-group homogeneity effects whereby two foreign accents are not readily discriminated. To provide a further illustration of how these two ideas can intersect, although linguists acknowledge subtle variations in accent across geographic spaces in the United States, naïve perceivers often identify discrete speech regions such as "the South." As Cohen describes, accent variation can be used to maintain group boundaries, and decreased contact across social groups (which are also linguistically dissimilar) can result in decreasingly effective communication across group borders. Nonetheless, humans may also be inclined to perceive linguistic borders even in situations where the language change is gradual and continuous, and a discrete border may not in fact exist. Interesting open questions concern the nature of peoples' perception of accent as continuous versus dichotomous, and future research could continue to explore the psychological factors that contribute to exercises in linguistic line drawing.

Finally, I found myself contemplating two particular facets of the modern human linguistic landscape. The first is that—at least in modern times—a majority of human children are raised in bilingual or multilingual environments. The second is that modern accents indicate not only regional affiliation or geographic origins, but also status or prestige both within and across social groups that occupy geographically proximate spaces. Research in sociolinguistics (e.g., the work of Labov) demonstrates that variation in speech maps reliably to many aspects of social category membership, often among groups living in the same place at the same time. Further research might integrate proposals of accent as a tag-based strategy for cooperation with situations of multilingualism and with findings that demonstrate the pervasive instances of accent marking social status.