

Pitfalls of fossil-thinking part II

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	Template	%	EM	Examples	*Ill-formed examples
Simplex Reduplicated	1 A·B·A·B	28%	(AB)+	<i>sinisini~sinisinisini</i>	* <i>sinisini~si</i>
	2 A·A(·A)	9%	·A+	<i>sese~sesesese</i>	* <i>se:</i>
	3 A·A·B	9%	·A	<i>gbògbòrò~gbò</i>	* <i>gbogboro-ro</i>
	4 A·B·B	8%	·B+	<i>fututu~tututu</i>	* <i>fututu~fu</i> , * <i>fututu~fututu</i>
	5 A·A·A	3%	A·A·A	<i>susuusu</i>	* <i>susususu</i>
	6 A·B·C·A·B·C	2%	·(A·B·C)+	<i>gbadara-gbadara~gbadara</i>	*- <i>rara</i> , *- <i>gba</i>
	7 A·B·C:	17%	·, (A·B·C)+	<i>wùrùfùùù, wùrùfù~wùrùfù</i>	*- <i>fùfù</i> , *- <i>wù</i>
	8 A:	13%	:	<i>sùù~ùùùù</i>	* <i>sùùù~sùùù</i>
	9 A·B:	8%	:	<i>nyàqàà~ààà:</i>	* <i>nyàqàà~qàà</i> , * <i>nyàqà~nyà</i>
	total	97%			

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The Ideophone

This is the second part in a two part series of peer commentary on a recent preprint. The first [part is here](#). I ended that post by noting I wasn't sure all preprint authors were aware of the public nature of the preprint. I am now assured they are, and have heard from the senior author that they are working on a revised version. Since the first preprint version is still public and since the senior author responded publicly, I also want to commit the below comments to the public record.

Di Paola, Giovanna, Ljiljana Progovac, and Antonio Benítez-Burraco. 2023. "Revisiting the Hypothesis of Ideophones as Windows to Language Evolution: The Human Self-Domestication Perspective." PsyArXiv. <https://doi.org/10.31234/osf.io/7mkue>.

Legitimate critique is not fear

Independent from Part I of my review, fellow ideophone and iconicity expert Dr. Ian Joo responded to the preprint [with an excellent thread on twitter](#), a crumbling social media network where links are not guaranteed to keep working. To this, corresponding author Antonio Benítez-Burraco [responded as follows](#):

Thanks for the criticism. This is very helpful. With regards to the "primitiveness" issue... I see that most people are afraid of finding less complex elements in present-day languages. Perhaps they don't exist, or perhaps we would not like to find them. I understand the reasons. But I think they are ideologically-motivated rather than scientifically-motivated (avoid racism, etc.)".

I want to take a strong stand against this reframing. It casts legitimate critique as a form of being "afraid" and places the authors in the role of the intrepid explorers boldly going where no one else dares to go. But this seems a bit silly. Being aware of historical harms perpetrated in the name of science is important. Trying to avoid pitfalls of prior work (e.g., Levy-Bruhl's selective reading) is objectively useful. Neither have anything to do with being "afraid" to find something.

We're calling into doubt the scientific utility of seeing something as a "fossil" (a relic frozen in time, an archaism, a remnant of what once was). And we're drawing attention to the ways in which such a construal limits what one can find out, and risks imposing a kind of tunnel vision on a phenomenon. Those are the pitfalls of fossil-thinking. This is nothing to do with ideological motivation, and everything with good science.

I should add that being a good scientist, to me, certainly also means not being racist.

"Words"?

Anyway, on to the preprint. The ms starts off with an odd claim that we have to get out of the way first. Section §2 is entitled "Ideophones as sound-symbolic "words"¹ (with words in scare quotes) and a footnote:

The Ideophone

¹ *Technically speaking, ideophones may not be ‘words’ in the traditional sense, because they do not combine with other words to form specific phrases, as is the case with typical words such as e.g. nouns, verbs, adjectives, etc. They instead seem to be holistic expressions which attach to full sentences to provide a vivid depiction of the scene. For the lack of a better term, we refer to ideophones here as ‘words.’*

Di Paola, Progovac and Benítez-Burraco 4

This statement is at odds with decades of scientific work on ideophones. While ideophones can indeed sometimes be seen as expressions that “attach to full sentences to provide a vivid depiction of the scene”, the ms provides no argument why this would exclude them from being words. Ideophones are recorded in dictionaries, learned by children, incorporated in sentences, described in good grammars. It is unclear what one gains from calling into question their status as words.

More importantly, it is simply untrue that “they do not combine with other words to form specific phrases”, as shown in work on ideophone constructions in Basque, Gbaya, Japanese, Korean, Mandarin, Semai, Siwu, Turkish, Quechua or Zulu (see for example Akita & Dingemanse 2019; Ibarretxe-Antuñano 2017; Van Hoey 2023; and sources cited therein). I’ll revisit the claim below, as it appears in multiple places in the ms; but suffice it to say, for now, that when it comes to purporting to present a scientific understanding of ideophones, the ms starts off on the wrong foot.

Questionable claims

The first major section of the ms introduces ideophones in a way that appears designed to shed the most favourable light on the hypothesis to be defended in the ms, namely that ideophones qualify as ‘linguistic fossils’ (see [part I](#) on why I believe that is an ill-advised aim, even if one thought, as I think we all do, that ideophones can definitely be relevant to understanding language evolution). As these claims are used to support points made later in the ms, it is important to consider them carefully.

(i) They can be enriched with specific sound types that are located in specific word positions

Obscured in this statement is the admission that the base material of ideophones is often perfectly phonologically regular, as indeed linguists working on ideophones have long described. This undercuts the claim that ideophones are not quite “words” (see above), and also undercuts later claims about the supposed holophrase-like nature of ideophones.

(ii) Prosodically, ideophones often contrast with other words in the utterance because of their higher or lower pitch

No beef with this claim; it is indeed a fair summary of the literature (the only such claim in this section.)

The Ideophone

(iii) Morpho-phonologically, ideophones are frequently created through reduplication (...) Ideophones can be said to lack double articulation (i.e., combinatoriality of sounds plus combinatoriality of morphemes, as discussed further below), which is typical of ordinary words

Some major problems here. First, yes, reduplication is a striking characteristic of some ideophones, but there are many non-reduplicated ideophones: in the few inventories for which we have counts (sources in Dingemans 2015), the number of reduplicated base forms ranges from 7% (Somali) to 35% (Japanese) and 59% (Siwu), so defining them as reduplicative words (as the ms does later on, referring back to this questionable claim) risks disregarding 93% to 41% of ideophones depending on the language.

Second, introduced in this paragraph and mobilised later on in the ms, is the strong claim that ideophones “lack double articulation”. No source is given for this remarkable statement. The notion of double articulation (due to Martinet, and closely related to Hockett’s duality of patterning) is often connected to the arbitrariness of the sign. In a simplistic view of ideophones as “iconic” signs, their iconicity would stand in the way of them exhibiting this kind of duality.

However, ideophones are not simply iconic words. They have, all of them, arbitrary characteristics and clearly function as conventionalised words in larger linguistic systems — a point made in my 2019 paper on ‘Ideophone’ as a comparative concept, which is cited in the ms but not engaged with; but also by ideophone scholars like Diffloth, Kita, Nuckolls, Ibarretxe-Antuñano and many others. Their phonological form, riffing on the larger phonological system of the language (Diffloth 1980), is one piece of evidence for this. The fact that they can combine with other bits of morphology in many languages is another (Van Hoey 2023).

Table 5. Types of expressive morphology (EM) in Siwu ideophones

	Template	%	EM	Examples	*Ill-formed examples
Reduplicated	1 A·B·A·B	28%	(AB)+	<i>sinisini~sinisinisini</i>	* <i>sinisini~si</i>
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	3 A·A·B	9%	·A	<i>gbògbòrò~gbò</i>	* <i>gbogboro-ro</i>
	4 A·B·B	8%	·B+	<i>fututu~tututu</i>	* <i>fututu~fu</i> , * <i>fututu~fututu</i>
	5 A·A:·A	3%	A·A:·A	<i>susuusu</i>	* <i>sususususu</i>
	6 A·B·C·A·B·C	2%	·(A·B·C)+	<i>gbadara-gbadara~gbadara</i>	*- <i>rara</i> , *- <i>gba</i>
Simplex	7 A·B·C:	17%	:, (A·B·C)+	<i>wùrùfùùù, wùrùfù~wùrùfù</i>	*- <i>fùfù</i> , *- <i>wù</i>
	8 A:	13%	:	<i>sùù~ùùùù</i>	* <i>sùùù~sùùù</i>
	9 A·B:	8%	:	<i>nyàqàà~àààà:</i>	* <i>nyàqàà~qàà</i> , * <i>nyàqà~nyà</i>
	total	97%			

Types of reduplicative morphology in Siwu ideophones (from Dingemans 2015)

In fact, even reduplication, presented in the ms as the simplest operation possible and therefore implicitly as evidence of a supposed lack of double articulation, presents counterevidence. In several languages, the processes of reduplicative morphology found in ideophones form something like a mini-grammar with its own rules and regularities of form

The Ideophone

and meaning (Diffloth 1976, Dingemanse 2015; and see Table above). So when we consider all the evidence, this claim shoots itself in the foot.

(iv) Syntactically, ideophones tend to occur in separated utterances, although they can be occasionally used as completive clauses (Diffloth, 1972), or as part of a phrase (Dingemanse and Akita, 2017).

The “tend to” is problematic here, as most evidence points to this being *possible* but not necessarily the most *frequent* form of occurrence. It is hard to say what this statement is based on, because the sources cited here and further on in the same paragraph all actually show how ideophones are often integrated into the utterance to various degrees. Indeed a key point of the second paper cited in this paragraph is the evidence-based observation that Japanese ideophones are separate utterances (‘holophrases’) only in a handful of cases, and that it is much more common for them to be part of larger morphosyntactic constructions (Dingemanse & Akita 2017:502).

There is also extensive work on ideophone collocations (Samarin 1971, Van Hoey 2023) that falsifies this claim. Perhaps on a sympathetic reading this is meant to refer to the relative syntactic freedom of ideophones — relative, it is important to note, to other elements *in* the utterance, i.e. taking ideophones to be part of the same utterance and not a separate one. However, as we see below, it appears not to be so innocent.

(v) Semantically, ideophones convey many different types of meanings, but their typical function is to qualify verbs of perception

This statement is too categorical to be accurate, but to the extent that it is true (which is only partly), it directly conflicts with statement (iv) — after all, a common way for ideophones to “qualify” verbs of perception is to actually appear in lexical collocation with them, i.e. not as separate utterances but as integrated constructions.

(vi) Pragmatically, ideophones are mostly meant to cause a major engagement with the addressee. Because they occur mainly in spoken discourses, ideophones tend to highlight the acoustic and visual dimensions of conversational exchanges (Clark, 2016). Also, in their affective-imagistic dimension, they contribute to the emotivity of the discourse (Baba, 2003), whereas as depictions, they can be construed as performance

Again, this statement is too categorical and generalizing to be accurate. Do I mean to “cause a major engagement with the addressee” when I use ideophones in doctor-patient interaction (as in Japanese, Sakamoto et al. 2014), or in expert-novice learning situations (as in Ashéninka Perene, Mihás 2013), or in dance classes (Keevallik 2021)? I think this is painting an overly simplistic a picture of what ideophones are used for in interaction. Later on in the ms, this paragraph is mostly mobilized for its aside on “emotivity”, a rhetorical narrowing that does not represent what we know about ideophones.

The Ideophone

Rhetorical slippage

The rhetorical function of the claims in the introductory section is to set the stage for an argument that presents “Ideophones as linguistic fossils” (§3). To the extent that the argument depends on those claims, it will falter when those claims turn out to be questionable. What makes the overall edifice weaker still is that later sections often rely on a telegraphed, oversimplified form of the claim which is even more questionable.

This rhetorical strategy is on full view in §3.3, where the goal is to argue for “a degree of continuity with primate abilities” (yes, the ms really appears to go there, or at least does not fend off the deeply problematic interpretation that ideophones are basically like nonhuman primate vocalizations):

(i) ideophones are loosely integrated words with the simplest possible reduplicative structure; (ii) they typically constitute full, holistic utterances; (iii) they are mostly used to convey emotional content; (iv) they are often accompanied by gestures (as mentioned above); and (v) they are tightly linked to the context of use.

I must confess I find it hard to be gentle here; to my mind this is a truly irresponsible reduction of ideophones, and a striking example of a modern-day attempt to exoticise ideophones. They have “the simplest possible reduplicative structure”? Even ignoring that significant parts of ideophone inventories are *not* reduplicative, every empirical study of reduplication in ideophones has shown intricate patterns of reduplicative morphology.

“They typically constitute full, holistic utterances”? Note that by this point, the “tend to occur in separated utterances” of claim (iv) is silently upgraded to “full, holistic utterances”; a rhetorical sleight of hand. Second, this is a flat-out untruth, no way around it: the available evidence is not kind on this claim. Only 12% of all ideophone tokens in a corpus of Siwu is a holophrase, making it the least frequent construction (Dingemanse 2017); and only 3 out of 692 tokens in a corpus of Japanese is a holophrase (Dingemanse & Akita 2017). Puzzlingly, both these papers are cited in the ms, so the evidence is available to the authors.

“They are mostly used to convey emotional content”? Note again the upgrading of what was a small aside in another claim to a highly questionable generalisation. This sudden shelving away of ideophones as conveying “emotional content” also seems to make the common error of conflating depictive/performative iconicity and expressive/emotive indexicality; several of the papers cited in the ms point out why this is unnecessary and misleading, so I won’t go into that here (see also this [old blog post](#)).

Drive-by citations

There is a larger point here that struck me about this ms, though it is not unique to this ms. Citations are important in academia for a couple reasons: they are supposed to back up the claims we make (*evidence*); they provide ways to establish the lineage of ideas (*attribution*); and they enable us to engage in a dialogue with different bodies of work (*engagement*).

The Ideophone

In the first version of this preprint, however, many citations appear to be used for something else than these three things. For instance, eleven distinct papers of mine are cited, but if we look up the actual citations in context, as we see above, many of them treat the empirical evidence contained in the cited work as irrelevant (no evidence); many do not properly attribute original ideas (no attribution); and many fail to enter into a dialogue with the work cited (no engagement).

Instead, the citations seem to act as a kind of epistemic cover: a way to claim legitimacy for an argument without the content of the citation actually conferring that legitimacy. Andrew Perrin [has coined a very useful term](#) for this: *drive-by citations*. As he defines them (in the context of discussing how they appear in students' essays):

These are, essentially, references to a work that make a very quick appearance, extract a very small, specific point from the work, and move on without really considering the existence or depth of connection between the student's work and the cited work. This is an issue, in part, because the claim or finding being cited is often much more nuanced and complex than the quick way it is used in the citing work.

Drive-by citations have probably always been a feature of academic work (and not only in student essays). So let me make clear that I don't think the paper I'm reviewing here is uniquely culpable for them. I did see them here more sharply because the paper cites so much of my own work.

When I see drive-by citations as a peer reviewer, I try to call them out, because they muddle the picture of attribution and don't help to build cumulative progress. At best, they constitute a mere nod to other nominally relevant work; at worst, they misrepresent the cited literature and give readers a skewed view of others' evidence and arguments. Since we cannot all be expected to know all of the literature cited, we need to be able to trust each others' use of citations for evidence, attribution and engagement. Drive-by citations dilute academic discourse and hamper scientific progress.

Misrepresenting work on word learning

Drive-by citations are a problem throughout, as the above discussion shows, but they are perhaps especially grating in the section §3.6 on "language acquisition". Rhetorically, it would of course be useful for the argument if ideophones and iconic words more generally were learned early and if infant came with innate biases for iconicity. It so happens that we [critically reviewed the word learning & iconicity literature](#) and found things to be a lot less simple:

The combined weight of evidence suggests that the role of iconicity in word learning may be more complicated than supposed: if the processing and understanding of iconicity has its own developmental trajectory and occurs partly in parallel with non-iconic word learning rather than prior to it, iconicity loses some of its bootstrapping appeal, and it becomes more critical to understand the distribution and functions of iconicity by itself.

The Ideophone

| Nielsen & Dingemanse 2021

The preprint under review here cites that paper, so one might hope it takes careful note of these complications. Alas, it does not. Our paper is cited as follows: “According to the “sound-symbolism bootstrapping hypothesis” (Imai & Kita, 2014; Nielsen & Dingemanse, 2021), this special sensitivity to sound symbolism by preverbal children can be ascribed to a biologically endowed ability to map and integrate multi-modal inputs”. But even a quick skim of our paper shows that in fact we critically review that bootstrapping framework and find the most common interpretations of it wanting.

In the language learning section of the preprint, other literature is cited only if it fits the narrative (e.g., if it purports to show early effects). The more numerous experimental studies showing that there is a learning trajectory to children’s understanding of iconicity itself (in gesture as well as in sound), are all ignored, even though they are highly relevant and prominently reviewed in our paper. This is a fatal combination of drive-by citation and tunnel vision. I would not hold it against the authors if they did not know the literature; they are by their own admission not experts in this domain. However, to cite literature that undermines one’s very argument is generally not a sustainable practice.

Needless to say, all of this seriously complicates the ontogeny-recapitulates-phylogeny narrative the preprint seeks to push, undercutting yet another pillar of the argument for seeing ideophones as ‘linguistic fossils’.

In sum

As I noted in the first post, I have written about ideophones and their possible relevance for matters of language evolution myself. Already then I combined a critical note on published work (in that case by Kita) with a constructive contribution:

Still, I do not bring up this topic just to air some scepticism and move on. Ideophones are clearly relevant to the evolution of language in at least one important sense. Even if they do not provide us with a peek into the minds of our protolinguistic ancestors, they do show us how aeons of cultural evolution may shape and hone spoken language into a system in which both description and depiction play important roles — a system in which speech is not just about something, but is something, to use Peek’s turn of phrase. I see no need to dispute the possibility that depiction came before description in the evolution of language. What I argue is that it is difficult to tell at this point (see Davidson and Noble 1989 for discussion), and that one need not commit to speculations to still appreciate that ideophones are powerful proof of the fact that the depictive potential of speech may be exploited by evolutionary processes. From this perspective, what is typologically interesting about ideophonic languages is that the depictive use of speech has taken on a life of its own, in the form of a sizable class of words which is primarily depictive. This possibility, which we can think of as just one of the many possible trajectories of the ever-evolving bio-cultural hybrid that is human language (Keller 1998; Croft 2000; Evans and Levinson 2009), has often been overlooked or downplayed

The Ideophone

by linguists focusing on Standard Average European languages. Ideophone systems offer a useful corrective here, shedding light on another corner of the design space of language.

Dingemans 2011:342

In sum. Things are more nuanced, and therefore more interesting, than a view of ideophones as linguistic fossils would suggest. Work on iconicity in relation to language evolution will benefit from a broad view of the evidence, and from a strong and even-handed grasp of empirical work on ideophones and depictive constructions across languages and modalities.

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The Ideophone

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