Decomposing numbers

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“Numbers” is the name of a vague and sprawling category. A ragged hold-all for a conceptually multitudinous set of things that are done or performed differently in myriad times and places. Numbers are difficult to work with ethnographically in any here and now, precisely because it is difficult to keep them here and now: present as a collective doing in this place. They have a capacity to leap up, out of a particular—which after all is what ethnography focuses on—into some ideal. They do indeed seem devilish in the ways they “other themselves” (or, to use Aparecida Vilaça’s word, “profess” [6] themselves). Numbers seem to lurk just out of reach, so we find it hard to muck around with them and tinker with their insides. But this is what we need to do if, while keeping their distinctness, we are to connect the numbers of a market madam selling tomatoes in a Yoruba town market with those of a science laboratory where the various nutritional qualities of West African tomato varieties are the matter of concern, and, say, the numbers in a text describing some characteristics of the Yoruba tomato market. Or indeed, to give a particular example I learned about by reading Vilaça’s lecture, if we are to both connect and separate the comfortable singularity of the Christian catechism and the discomfort of the Wari’ xika’pe (glossed as “alone,” 8). It has taken a great deal of careful institution building stretching well over a century and a half for the conceptual work by which this Borgesian category “number” has been made real as a generative field for us ethnographers of number to play in.

I came to the field inadvertently in the 1980s in trying to explain why mathematics classes in Nigerian elementary schools so often provoked laughter, but sometimes also tears (Verran 1999). Numbers that circulate in Yoruba life are conceptually different to numbers derived from science that inhabit classrooms. But sometimes they combine, so that modern Yoruba life often goes on with numbers that are both Yoruba and scientific but neither one nor the other, and when this happens I for one am liable to get the giggles. Numbers take themselves so seriously, and it is funny to see them behave awkwardly as neither fish nor fowl.

Ethnographers are always decomposing things, and mostly other peoples’ things at that. Decomposing numbers is certainly a special-interest field in ethnography, but lots of us play in that field, and we have been at it for well over a century now (Connant 1896). What does it mean to decompose a number? I take the term “decomposing” from Marilyn Strathern, who is explicit about decomposing, freely admitting that her friends in Mt Hagen helped her in honing her game (Strathern 1992). As I read Strathern, decomposing characterizes her analyses in The gender of the gift and in the publications which followed. I find her most explicit articulation of this method in a paper entitled “The decomposition of an event” (1992). The event, which she conceptualizes as “a first-contact event,” is the first meeting of a people she would later name as “Hageners” with two Australian men who, in expanding Australia’s control of the territory, had arrived in the Wahgi Valley in 1933. Interpret-
ing the sequential gestures of the crowd that had gathered, and those of the arriving Australians, gestures that were captured in a series of photographic images that record the event, Strathern points to the conflicting meanings that gestures have in such situations. She speculates on the moment when patrol officer

Taylor removed his hat to give a clearer view of his face. . . . I wonder if that simple act was not more disconcerting to the watching men than reassuring. [For these men] what might have been disconcerting about Taylor’s gesture in taking off his hat was that this figure appeared to be autonomously decomposing itself. (Strathern 1992: 244–45)

Decomposing a concept—“a number” or “a first-contact event”—involves evertion to reveal the concept’s insides. This idea can be a surprise to those, for example many mathematicians, who think that concepts do not have insides. Yet, as every elementary school teacher knows, the insides of, say, a cardinal number are very different to the insides of an ordinal number, and it takes some children many years to agree that these very different things are just numbers.

What Strathern learned from her Hagen friends, she tells us in 1992, is that the making visible of insides is analysis which empowers the decomposers. Decomposition witnesses their capacities of elucidation, and in such analysis, forms appear out of other forms. Already in 1988, Strathern had developed this at some length, identifying it as a generalized form of analysis, common to ethnographers and Melanesians (Strathern 1988: 17). We could call this abductive (as distinct from inductive) generalization.

An example of Lévi-Strauss decomposing numbers is what Vilaça chooses to introduce the topic of her lecture: “indigenous mathematics” (7). Assiduously following “the master” (7) in invoking the principle of understanding an “aberrant derivation” of numbers amongst speakers of the languages native in northwest Northern America (Lévi-Strauss 1978: 337) in the terms articulated by speakers of those languages, she succinctly describes Lévi-Strauss’ explanation showing the “aberration” as logical. What seems to be a weird deviation from “proper arithmetic” is actually a wordy expression (in the form of a numeral) of the particular collective order-making in those times and places where these numbers have life and are named.

In structuralism, such neat and satisfying explanations arising in abductive generalizations that nicely situate the disconcertments of ethnographers of numbers are not the end of the matter analytically. Structuralists go on to do a proper empirical scientific inductive generalization to reveal the common structure of all human thought. Properly invoking Lévi-Strauss’ analytic legacy exemplifying this second leg of a structuralist analysis, and using a further example in “leaping across the Americas” to Xingu Indigenous Park in Brazil, Vilaça links two cases of (abductive) decomposing of number as a single concept. In exemplifying this second moment, the inductive generalization, as a recomposing moment, the structuralist “theme of the triadic basis to dyadic structures” is instantiated (7). In this lecture, demonstrating structuralism’s dual generalizing moments is achieved with an impressive economy in description, in a mere ten paragraphs.

I will come back to consider the lecture’s particular performance of the structuralist version of de/recomposing of number, but first I briefly develop my theme of decomposing by proposing contemporary ethnography as collectively enacting a typology of decomposing analytics. As I already indicated, Strathern described the general form of ethnographic decomposing in 1988. She proposes it “as an effort to create” (17); decomposition “can only be done through deploying different forms, [in making] other compositions” (18). What is created in ethnographic writing is another “world” that sits alongside that experienced by the ethnographer, necessarily both connected and separated, since the ethnographic text is “an expressive medium (writing) that sets down its own conditions for intelligibility.” The resources for both the decomposing and the recomposing, which in most cases take the form of inductive generalizing but might also be a further abductive generalization, are “the arts of narration, the structuring of texts and plots, and the manner in which what is thus expressed always arrives in a finished or completed (holistic) state, already formed, already a composition of sorts” (18).

My typology of ethnographic decomposing has three parts. The structuralist decomposing that is exemplified in this lecture is one such element. We can contrast this with the form of decompositional transformation characteristic of Strathern’s writing after The gender of the gift. Both these analytics work the de/recompositional moments as abductive generalizing followed by inductive. They differ, however, in the form of induction their analyses enact. While knowledge claims generated with the former express a precise essentialist objectivism, knowledge claims generated in the latter analytic express
a constructivism, and cultivate a vagueness, albeit one sufficiently rigorous for effecting enough coherence for “elucidation of social systems in Melanesia, most prominently that of [the concept of] ‘the gift’” (Strathern 1988: 18).

Numbers as concepts are commonly the subject of both these forms of ethnographic de/recomposing. Yet across the rather long history of ethnography of numbers, the former has been most favored, and most often to effect some sort of civilizational hierarchy that invariably placed Western forms of number concepts at the top. Lévi-Strauss’ singular contribution here was to turn the moment of inductive generalization on its head to use de/recomposition to establish the objective truth of human cognitive equality.

The constructivist approach to ethnography of number became the norm in the Anglophone world during the 1980s, articulating specific cultural differences in number concepts. Immodestly I point to my own contribution here, published in 1990 (Watson 1990). This analytic approach emphasizes numbers as social through and through. It has been a major line of analysis in social studies of science and mathematics, usually in the form of ethnomethodology.

So far, I have described a version of the analytic dichotomy familiar in almost all corners of social science, but I announced a three-element typology. What is the form of the third type? This features abductive generalizing, both in the decomposing and recomposing moments, and effects a radical situating, generating possibilities for a situated particular knowledge claim to be made. Both analytics I have just described explain difference as a form of sameness, albeit an exceedingly odd form of sameness in the case of constructivism (Verran 2001: 152–54). And this sameness-making explains difference away.

Why does this explaining-away matter? When it comes to actually working with numbers in a here and now, say in mathematics and sciences classes in Nigeria, or Aboriginal Australia, it matters a great deal that numbers stay here and now as messy and accomplished. Numbers as concepts are commonly the subject of both these forms of ethnographic de/recomposing. Yet across the rather long history of ethnography of numbers, the former has been most favored, and most often to effect some sort of civilizational hierarchy that invariably placed Western forms of number concepts at the top. Lévi-Strauss’ singular contribution here was to turn the moment of inductive generalization on its head to use de/recomposition to establish the objective truth of human cognitive equality.

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Wonder, enchantment, seduction. All very enjoyable in a lecture, especially one delivered in the august surroundings of the Collège de France. In my experience these are indeed among the many affects of decomposing. Marilyn Strathern (1992: 244) points to fear and amazement in her decomposing of “first contact.” For me, however, it is comedy and laughter that stand out (Verran 1999, 2001). So, going back to my beginning, in Vilaça’s lecture I miss the laughter that in my experience accompanies decomposing. But I did experience one moment of out-loud laughter, more a chuckle really, when I read the lecture. It was when I came to the third paragraph and read, “In western history, mathe-
matics is the discipline that incarnates scientific knowledge in its purest form. Due to its professed capacity to objectively represent reality without the noise generated by the frictions and humors inherent to physics, biology, or chemistry . . .” (6–7). And the lecturer really did manage to say this without irony, no hint at all of a knowing smile, according to the video evidence. Remembering a similarly earnest lecture I once gave with many Yoruba colleagues listening, I thought, “Well, it does help to keep one’s academic composure if no one in the audience bursts out laughing” (Verran 2001: 27). As I read, remembering that laughter, I chuckled, thinking that Bruno Latour, that famous but wayward poststructuralist descendant of Lévi-Strauss, would have one or two things to say about that professed purity.

References


Helen VERRAN taught history and philosophy of science for many years. Her book Science and an African logic (University of Chicago Press, 2001) experiments with the idea of ethnography of numbers.