On language, dimensionality, and mapping

Mauro Tosco

This short article discusses dimensionality in language: while many languages may be easily conceptualized as bidimensional and covering a discrete portion of the Earth's surface, additional dimensions are provided by verticality—either physical or, more often, metaphorical (in the form of bi- and multilingualism)— and time (when nomadic peoples carry their languages around). Other languages are unidimensional, involving to all practical extents a single point in space, while still others have no physical dimension at all, and are used by diffuse communities.

The article argues that dimensionality—a key property of the nation-state—is largely responsible for how we conceptualize languages and the tools (such as the language maps) we use to represent them mentally as well as in space.

Keywords: dimensionality; language maps; dialects; nation-states; nomadic peoples.

1. Dedication

There are teachers and there are friends. And there are those very few who are both teachers and friends. Fabrizio is one of them, and over the years, many of Fabrizio's publications have nourished my mind and made me think. His still unpublished manuscript "Divagazioni linguistiche lungo un asse continentale" (Pennacchietti 2022) is one of these. Inspired by Diamond's (1997) classic *Guns, Germs and Steel,* Pennacchietti explores how the East-West and the South-North axes have a bearing (actually, a foundational role) on the language typology of the Old World.

My topic here is different but stems from the same fascination (obsession?) for language, geography and their interweaving. Namely: how do we conceptualize languages in space, how do we represent the dimensional properties of languages, and how much such onceptualizations and depictions owe to the nation-state—that overarching political structure and ideological construct that we all live in?

2. Language and territoriality¹

Consider the following hypothetical statement:

Language is an organism and any organism occupies a portion of space.

Ergo:

Language has dimensions.

While the first part of this tenet will certainly (and hopefully) make more than an eyebrow rise in disbelief (and maybe the eyebrow's owner cringe in horror), the second—more abstract—is often tacitly assumed. Insofar as they are "things" used (uttered, signed...) by essentially bipedal, nonflying individuals on planet Earth, languages are obviously connected to a territory. And, as Laponce (1993) suggested, maybe "languages behave like animals," and tend to encroach into a territory and exterminate or chase away competing species.

The strength of the language/territory connection probably varies along a continuum. For example, '[I]n Australian tradition, language varieties are not owned through being spoken, but on the basis that they who own a particular territory thus also inherit its linguistic identity, which was laid down at creation' (Sutton 2020: 356). Australia is therefore an extreme case of high territory-language association, against most other situations where a language or a language variety is associated to the individual or group speaking it, rather than location.

Following on Lakoff's (Lakoff and Johnson 1980) conceptual metaphors, LANGUAGE HAS DIMENSIONS is shorthand for A LANGUAGE HAS SPEAKERS & SPEAKERS OCCUPY PORTIONS OF LAND. But *how many* dimensions a language can have? Bidimensionality is somehow our most common answer, to some extent forced upon us by a relatively modern tool: language maps—and maps are still mostly two-dimensional objects. But other possibilities exist, as we are going to explore in the following sections.

¹ Parts of this article were meant to appear in a work written jointly with Federico Gobbo (University of Amsterdam) and Marco Tamburelli (Bangor University), but the project never materialized. I thank Federico and Marco for their numerous suggestions and corrections. All errors remain mine.

3. The quest for bidimensionality

The introduction of the modern state had momentous consequences on how we conceptualize languages, which tools we use to do so, how spatial categories are ascribed to language, and how they are used, ideologized and exploited.

Modern states are a by-product of the late Middle Ages and are based upon strict territoriality of jurisdiction: sovereignty. In this sense, it is even doubtful that other polities, the traditional empires of the past included, were states at all (Spruyt 1994). Nation-states are in their turn a much younger construct, essentially harking back to the peace of Westphalia (1648) and nowadays covering in principle the whole crust of the Earth.²

Strict territoriality of power was not a property of pre-Westphalian forms of governments, and it stands to reason that ethnolinguistic minorities fared comparably better in traditional empires than in modern nation-states—see Pavlenko (2023) for pre-modern empires in Europe, and Tosco (2015) for the Islamic world and its minorities. As the symbolic value of language as a flagger and a prerequisite of group membership was considerably lower, the necessity of language uniformity within any given polity was also lower or even non-existent (see Tosco 2015 and 2022 for a cursory treatment).

Languages play a key role in nation-states, and nation-states are essentialy bidimensional³ constructs. Therefore, the prototypical language is bidimensional, too, and many language communities are certainly amenable to a bidimensional approach. And still, even if we are conscious of the approximate value of maps for what concerns borders, we tend to forget what Gellner (1983: 139-140) had to say about modern ethnic maps and their possible, hypothetical ancestors:

² Special provisions take care of Antarctica and a few small areas around the globe, all of which, interestingly, tend to have no autochthonous population; ditto for the aquatic part of the Earth surface. As defined by the 1982 United Nations Convention on the Law of the Sea, a nation-state has full jurisdiction over a "territorial sea" extending up to a distance of 12 nautical miles (22 kilometers, 14 miles) from the baseline (the low-water line along the coast), as well as upon its internal waters. "Contiguous Zones" and "Exclusive Economic Zones" extend beyond that limit but do not provide exclusive sovereignty rights. Small areas which until a few decades ago were not *de jure* under the jurisdiction of a sovereign nation-states were likewise typically uninhabited and many have since long disappeared. An example is provided by two quite large, desertic neutral zones between Iraq and Saudi Arabia and between Kuwait and Saudi Arabia, respectively. An agreement to partition the Saudi Arabian-Iraqi neutral zone was reached in 1981; as to the second, the Wafra Field Neutral Zone is still in existence; its important oil fields are jointly operated under separate concessions from Kuwait and Saudi Arabia.

³ They are actually to an extent tridimensional if one considers the national airspace, although there is no international agreement on its vertical extent. A nation-state has also sovereignty over the continental shelf surface and the land under its territory, although to the best of my knowledge the depth of this sovereignty rights has not been internationally codified. Individual property rights on the underground are subject to different laws in different countries.

Consider two ethnographic maps, one drawn up before the rise of nationalism, and the other after the principle of nationalism had done much of its work.

The first map resembles a painting by Kokoschka. The riot of diverse points of colour is such that no clear pattern can be discerned in any detail, though the picture as a whole does have one. A great diversity and plurality and complexity characterizes all distinct parts of the whole: the minute social groups, which are the atoms of which the picture is composed, have complex and ambiguous and multiple relations to many cultures; some through speech, others through their dominant faith, another still through a variant faith or set of practices, a fourth through administrative loyalty, and so forth. When it comes to painting the political system, the complexity is not less great than in the sphere of culture. Obedience for one purpose and in one context is not necessarily the same as obedience for some other end or in some other season.

Look now instead at the ethnographic and political map of an area of the modern world. It resembles not Kokoschka, but, say, Modigliani. There is very little shading; neat flat surfaces are clearly separated from each other, it is generally plain where one begins and another ends, and there is little if any ambiguity or overlap. Shifting from the map to the reality mapped, we see that an overwhelming part of political authority has been concentrated in the hands of one kind of institution, a reasonably large and well-centralized state.

The problem is that many (maybe most) languages are Kokoschka-style, and they are the cause of more than little distress for politicians—as well as, quite often, linguists. The understanding and acceptance of "moving," "fragmented" or even "non-spatial" languages is fraught with difficulties (theoretical, and of course juridical and political, too). Nor are these overcome by democracy (cf. Tosco 2021 for some inherent problems of democracy with language diversity).

4. From two to three: verticality and bi-/multilingualism

Put simply, there are languages not amenable to bidimensionality, and this may happen for at least three different, and often intertwined, reasons: verticality, bi- or multilingualism, and mobility.⁶

A fascinating but conceptually easy case is provided by languages spoken at different altitudes within one and the same region. Media Lengua [mue],⁴ often considered a bona fide mixed language, is a particularly striking example spoken by descendants of Quechua migrant workers to the urban areas of Ecuador, the language is made up, roughly, by Spanish vocabulary and Ecuadorian Quechua grammar. It is also—in a way, iconically—spoken mid-altitude between Spanish and Quechua (Muysken

⁴ Language names are followed by their ISO 639-3 code in square brackets.

1997). Or consider the bewildering complex situation of upland Southeast Asia, with different languages spoken in the plains and in the hills, and where '[I]t is as if the difficulties of terrain and relative isolation have, over many centuries, encouraged a kind of "speciation" of languages, dialects, dress, and cultural practices' (Scott 2009: 18). Much the same can be said of the different languages spoken in other mountain areas: closer to home, in, e.g. the Western Alps, Occitan [oci], or Franco-Povençal [frp], varieties tend to dominate the higher parts of the valleys, while Piedmontese [pms], is, or was, the language of the lower slopes (and often the common lingua franca).

Verticality can also be metaphorical: there are "low" and "high" languages, and all kinds of linguistic "things" between. Bi- and multilingualism are of course very common, and, quite often, take the form of diglossic situations, where one or more languages occupy the lower echelons, and one, or, more rarely, more languages the higher domains. In Kloss' (1967) terms, the Abstand status of the "lower" languages is often ideologically negated, and they are recast as dialects of a single Ausbauized variety.

Diglossic situations are special targets of language policies aiming at monolingualism and bidimensionality, and their disappearance makes for a large part of the fast reduction in language diversity we are experiencing in the contemporary world.

Again: how to pictorially represent verticality of languages and bi-/multilingualism? The language cartographer who is cast against such a complexity cannot do much more than decide to represent either the higher, often official, languages alone, or the unrecognized varieties. Each solution is in principle wrong. The next section illustrates this point.

5. Mapping languages or dialects? An Italian case study

A cursory look at three supposedly linguistic maps of Italy—a country well known for its high degree of (mostly unrecognized) language diversity—will show how the choice may result in very different "language" maps.

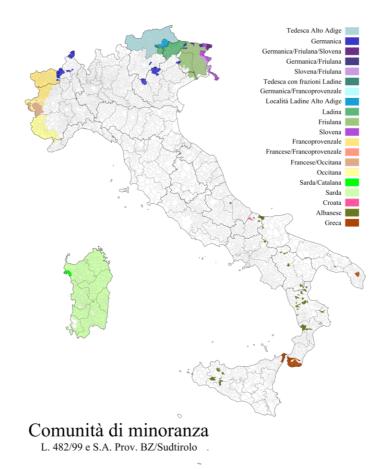


Figure 1. "Minority communities"

(from https://it.wikipedia.org/wiki/Legislazione_italiana_a_tutela_delle_minoranze_linguistiche; map by Alessio Cimarelli - Regions, provinces and municipalities in Italy.svg:, CC BY 3.0, https://commons.wikimedia.org/w/index.php?curid=27386068; original svg file, converted)

The map shows the language minorities explicitly approved (through Law 482/1999) by the Italian government. They tend to cluster on the periphery of the country and their recognition is partly due to external pressures from neighboring states, and to be geographically small, therefore demographically—as well as, by implication, politically—weak). All this visually highlights the link to nation building: language minorities are "exceptions" relegated to the periphery, showing how the tenet ONE PEOPLE = ONE LANGUAGE = ONE COUNTRY is imperfect, and special provisions are needed on the part of the modern nation-state to cope with this imperfection. Ultimately, we are confronted here with a socio-political map peddled as a "linguistic" map.

A seemingly more Abstand-based map is the following:



Figure 2. A "Linguistic map of Italy"

(from: Mikima - File:Linguistic_map_of_Italy.svg, CC BY-SA 4.0,

https://commons.wikimedia.org/w/index.php?curid=47109387; original format: svg; converted)

Rather than a "linguistic map of Italy," as its accompanying label claims it to be, this is a mishmash of language classification and dialectology. Specifically, the map contains officially recognized languages such as Occitan [oci] and Sardinian [srd], as well as the contested languages of Italy (Tamburelli and Tosco 2021)—such as Lombard [lmo] and Sicilian [scn]—but also dialectal groups such as Tuscan, which is clearly a variety of Italian (as evidenced by its lack of an ISO code), drawing no conceptual differences between them. The result is a map that is at best uninformative and at worse misleading. The single most important bundle of isoglosses within the Romance domain, i.e., the Rimini-La Spezia line which groups together France, the Iberian Peninsula, Southern Switzerland and Northern Italy and separates them form the rest of the Romance-speaking areas (see Brasca 2023 for a recent, complete overview), is stripped of its significance, being relegated to a mere distinction between some varieties of Italy, i.e., "Cisalpine" or "Gallo-Italic" varieties in green, and central and southern varieties in shades of blue and

purple. Note how there is no way to retrieve from this map a basic classificatory fact, namely that Cisalpine varieties (in green) are genealogically closer to Occitan varieties (in yellow) than to Tuscan varieties (in light blue). All of them simply appear as somehow "different" varieties.

Finally, what follows is a well-known dialect map of Italy:



Figure 3._"Carta dei dialetti d'Italia" (Pellegrini 1977)

Here, languages—whether officially recognized or not—simply disappear, and each area within the nation-state receives a colour shade on the basis of "dialect group" membership, with varieties belonging to the same group sharing the same base colour (e.g., the main Northern group is in different shades of yellow). Rather than a linguistic map of Italy, what we have here is a strictly dialectological map, not only bidimensional but also conceptually flat. Tuscan becomes here a "dialect group" just as "Cisalpine" or Sardinian, with little if any indication of the degree to which they differ from Italian, and absolutely no attempt at identifying which groups of varieties form a separate Abstand language and which do not. We therefore have a situation where "all cats are grey at night," and language

difference is swept under an dialectological carpet. While the Rimini-La Spezia line is at least discernible, its classificatory importance is blurred among a host of other isoglosses, and its degree of genealogical value concealed as just "one of many" isoglosses that happen to run within Italy.

What emerges from these maps is a specific ideological bias: dialects are "natural" and their identification may or may not feed into Abstand considerations, while languages are defined exclusively by their Ausbau status and taken care of separately (i.e., in separate "linguistic"—rather than dialectological—maps). Bidimensionality has been forced onto the linguistic map and language diversity has been neutered, tamed under the label of "dialects"—thereby achieving an essential step in nation-building.

6. The fourth dimension: when languages move

Moving implies time, and moving, at least seasonally, was probably a feature of early humans and is still usual in many (but not all) foraging lifestyles. In a sense, we can say that languages were and still are typical moving entities.⁵ Regular long-distance mobility (as different from migration) is more recent than seasonal mobility, and is mainly linked to the domestication of camelids (as late as the first millennium BCE) and long-distance sea-faring. From an economic point of view, this is but an instance of occupational mobility. Examples abound: Gypsies in Europe and the Middle East, Dyula (traditionally a merchant caste of West Africa), or Sama(h) or Bajau of Southeast Asia (the most well-known example of "Sea Nomads") are cases in point. How to represent a nomadic people and its language on a map has always been a problem: the same portion of land is intermittently occupied by speakers of different languages. At the same time, as it is impossible for a dimensional entity X to be fully located at the same time in different portions of the space, Time—the fouth dimension—becomes a variable: different languages are spoken over the same portion of land in different moments, but there is no point where a language is spoken all the time. Two cartographic solutions among many are shown here below.

In the first example (Figure 4), the languages of a few nomadic group of Southern Somalia are grouped together under a common ethnic label of "Digil" (actually a clanic label; in any case not a linguistic entity).⁸ Even without having to deal with the single languages, the map has a serious shortcoming: in the very same area the Maay language is also spoken by the sedentary agriculturalists – and apparently by the "Digil," too, as a regional lingua franca. In short, the "Digil" languages are actually spoken in a part of the Maay-speaking area. Moreover, the "Digil" roam and partially intersect

⁵ This is still another sense in which, following Laponce (1993), "languages behave like animals."

among each other. This is tentatively represented in the second map (Figure 5), where differently coloured lines are superimposed upon the Maay-speaking area (the "Digil" languages represented here are Garre, Tunni, Dabarre, and Jiiddu).

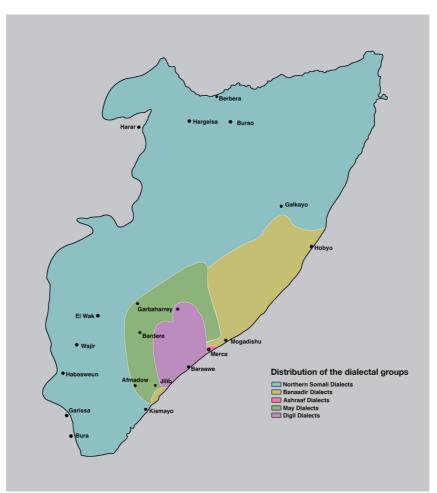


Figure 4. Distribution of Somali dialects (*by Kzl55 - Own work, CC BY-SA 4.0,* <u>https://commons.wikimedia.org/w/index.php?curid=57282896</u>; from Somali Languages, Wikipedia, <u>https://en.wikipedia.org/wiki/Somali_languages</u>)

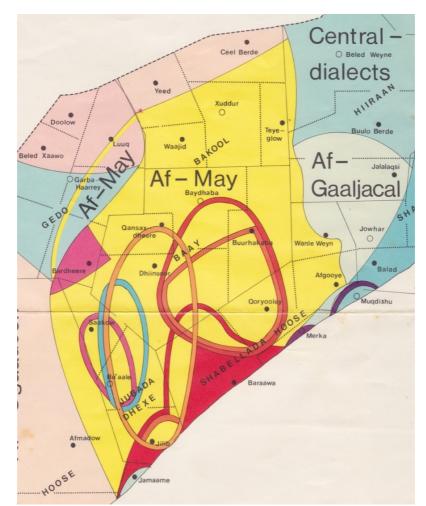


Figure 5. A dynamic view of the Somali dialects in the interriverine region (from Lamberti 1986b; detail)

Among the competing classifications of the varieties spoken under the umbrella of "Somaliness," Lamberti's (1986a) work is strictly dialectological and synchronic in nature: everything is a dialect. On the other hand, there is no analysis of mutual intelligibility—although even a casual look at the data suggests that some "dialects" are in fact separate languages. ⁶ In the absence of any actual measurement, we have to rely on descriptive relations. In the case of Maay and the "Digil" dialects intelligibility is certainly low. At least one Digil variety, Jiiddu (admittedly the most extreme case) is notoriously so different that a closer affiliation beyond Somali with the Baiso [bsw] language of South Ethiopia has been proposed (Ehret and Ali's 1983 propose a Baiso-Jiiddu node at the very top of their

⁶ Another classification, proposed by Ehret and Ali (1983), is strictly cladistic in nature, with upper nodes portraying Abstand languages and the lower nodes their respective dialects. The results are in strong contradiction to the actual synchronic situation (not to mention the speakers' perceptions). Moreover, the ideological exclusion of clanic names and the reliance on towns (fixed points in space) for node denominations make the whole enterprise mostly useless.

overarching proposed classification of Somali languages; a proposal further defended and justified in Ali and Arvanites 1985). Another "Digil" variety, Garre (or Karre) has been shown to have special links with Boni, generally considered a separate language and spoken on the Kenyan side of the Somali-Kenyan border (Tosco 1994).

Nowadays, Article 5 of the Constitution of the new Federal Republic of Somalia has Somali and Arabic are the first and second official languages; it nominally recognizes Maay as one of the forms of Somali (but not a separate language), whereas no mention is made of the smaller, nomadic groups of the South and their speech.¹⁰ As is so often the case, it does not mean much that linguists have at least tentatively classified each of them as separate languages and bestowed them their duly ISO 639-3 code (Maay: [ymm]; for "Digil:" Dabarre: [dbr]; Garre: [gex]; Jiiddu: [jii]; Tunni: [tqq]).

7. Point-like (unidimensional) and a-dimensional languages

If we extract Time from our set of variables and further leave aside bi- and three-dimensionality, we can get a group inhabiting a plurality of geographically separate points in space: in a sense, single frames of a film. In each location the group may even constitute the majority (as was often the case of many Yiddish-speaking shtetl of Central and East Europe)—but the group is always a minority in respect to the population of the area at large. Another exemplary case, investigated by Coluzzi, Du and Woo (forthcoming), is provided by the sizeable and linguistically diverse Chinese minorities of Southeast Asia. If one were to follow and elaborate on Gellner's imagery quoted above, we would not speak here of Kokoshka nor of Modigliani, but maybe of Seurat and pointillism.

At issue here is contiguity—a chief correlate of territoriality. In a modern state, peoples – and languages—must be assigned not only a fixed, stable territory (thus excluding the languages of nomadic groups exemplified exemplified for Somalia above) but also, if possible, a contiguous one. An example of political and juridical text enucleating this proviso is provided by Article 39, Comma 5 of the Ethiopian Constitution, which sets itself the admittedly uneasy task of defining what a people (in Ethiopian political parlance, a "Nation, Nationality or People") is:

A "Nation, Nationality or People" for the purpose of this Constitution is a group or people who have or share a large measure of a common culture or similar customs, mutual intelligibility of language, belief in a common or related identities, a common psychological make-up, *and who inhabit an identifiable, predominantly contiguous territory* (emphasis ours).

Other languages do not have problems with contiguity, but are unidimensional in the sense that they occupy single points in the map. Two opposite examples come again from the Horn of Africa: Harari [har] and Chi-Mwiini. Harari is the traditional Semitic language of Harar, a major town in East Ethiopia and a regional Islamic center, has been recognized as the working language of the local, autonomous town (there are no more "official languages" in Ethiopia), it is widely used in education and in everyday life and boasted more than 25,000 speakers in the 2007 census.

Of course, the limited geographical size of the "point" and the limited number of speakers make a town language a likely target of catastrophic events: the indigenous population of Brava, historically a major port on the Somali coast and a center of Islamic culture, has been wiped out during the long Somali civil war, and the speakers of its unique Bantu language, Chi-Mwiini (without an ISO code and often wrongly considered a Swahili dialect) are now scattered worldwide, making its long-term preservation doubtful.

What about the absence of dimensions at all? It is well exemplified by auxiliary languages, whose best example is certainly Esperanto [epo]. Although it boasts a sizable number of speakers, first-language speakers included, it does not meet any dimensional expectation: there is no "Esperantoland₇" and the language is spoken where its speakers congregate, physically or virtually.

Another interesting case is provided by sign languages: they are dimensional to the extent that "national" signed languages are sometimes created in multilingual states, as the South African Sign Language [sfs]. Interestingly, this is not the case where the languages spoken in a multilingual state have their own signed varieties—e.g., there is no "Swiss Sign language."

However, just as auxiliary languages, sign languages do not occupy a fixed and contiguous chunk of territory within the area inhabited by the non-signing community. Contrary to many other three-, four- and unidimensional languages, sign languages and their community are per se highly salient, and no additional ideological props are needed for their continued existence nor for their official recognition: the absence of territoriality—and, therefore, of any possible harm to a nation-state's indivisibility—plays here in favour of their recognition.

8. In lieu of a conclusion

In a nutshell, we have been cursorily addressing non-bidimensional languages: three-dimensional, four-dimensional, unidimensional, and even a-dimensional languages. Are they "weak" languages? Or: can we suppose that these additional dimensions are prone to collapse to bidimensionality, or even maybe disappear in what would amount to a linguistic black hole?

Apparently not: interestingly, in no case pluridimensionality seems to have been per se the major culprit behind language erosion and language shift.

And yet, imagination goes to *Flatland* (Abbott 1884) and the adventures (and misfortunes) of the Square when trying to comprehend other dimensions. Aren't we a bit like the Square, after all?

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Mauro Tosco is professor of African Linguistics at the University of Turin. His main area of research is the Horn of Africa. He has been working in Ethiopia, Kenya and Somalia on the analysis and description of Cushitic languages in an areal and typological perspective. Among his books: *A Grammatical Sketch of Dahalo* (Hamburg, 1991), *Af Tunni: Grammar, Texts and Vocabulary of a Southern Somali Dialect* (Köln, 1997), *The Dhaasanac Language* (Köln, 2001); *A grammar of Gawwada* (Köln, 2021) and *A Gawwada Dictionary* (Köln, 2022). He is a native speaker of Piedmontese and the author with Emanuele Miola and Nicola Duberti of *A Grammar of Piedmontese* (Leiden, 2023). He further works on the expansion and revitalization of minority languages, language policy and ideology. He can be reached at: <u>mauro.tosco@unito.it</u>