
A Numbers Game

By Lothar Katz

Did it ever occur to you that numbers, or rather, the ways in which we speak them, say something about how we think? And that differences in these ways across languages reflect considerable communication challenges?

Let's pick an example here: you probably know at least a few 'teenagers.' Ever wonder where that word came from?

To native speakers of English, the answer is obvious: the language has individual words for the numbers from *one* to *twelve*, then launches into a combination pattern from *thirteen* to *nineteen*. Not overly logical, to be truthful here, but fortunately the counting becomes regular and predictable from 20 onwards (*twenty-one*, ...). 'Teens,' that much is clear, are people between 13 and 19 years of age.

Is this a universal linguistic concept? Not at all!

The concept of 'teens' is easy to figure out for Germans, even though a similar term does not exist in their language. What helps them is that patterns are similar: 1 to 12 (*eins* to *zwölf*) are also distinct words in German, while 13 to 19 (*dreizehn* to *neunzehn*) use a numeric construct similar to the one found in English. Interestingly, the Arabic language also separates the numbers between 13 and 19 from those between 1 and 12.

But what is a Spaniard to make of this, whose language knows distinct words for 1 to 15 (*uno* to *quince*) and then uses a regular pattern for all higher numbers (*dieciséis* = ten-and-six, *diecisiete* = ten-and-seven, ...)? Even the Roman languages cannot seem to agree among themselves: French mostly follows the Spanish concept, but for some reason uses distinct words from 1 to 16 (*un* to *seize*) before going regular (*dix-sept*, *dix-huit*, ...). The Italians chose to side with neither: building upon a foundation of distinct words for 1 to 10 (*uno* to *dieci*), they use another not-very-logical scheme between 11 and 16 (*undici* = one-ten to *sedici* = six-ten) before going mostly regular (*diciasette* = ten-seven, ...).

The Russian language offers a slightly more logical twist to this. It counts from 1 to 10 (*один* to *десять*) as others do, next employs a one-ten to nine-ten scheme (*одиннадцать* to *девятнадцать*), after which it becomes regular.

Why can't we all be as logical as the Chinese or Japanese? Their respective ways of counting, where 11 is ten-one (*十一* resp. *jū-ichi*) and 85 is eight-times-ten-five (*八十五* resp. *hachi-jū-roku*), for example, surely seem most intuitive.

Intuitive or not, the concept of a 'teen' must seem rather foreign to native speakers of any of these languages, regardless of how logical their ways of counting are. Let's state the obvious here: it is!

But wait, there is no reason to stop now, given that language-specific counting methods can provide even more interesting insights. Did you know that Germans, most of whom

pride themselves with being oh-so-logical, actually are less logical when counting in their language? It always put the **tens** at the end, such that 43 becomes three-and-fourty (*dreiundvierzig*) and 325 becomes three-hundred-five-and-twenty (*dreihundertfünfundzwanzig*). How strange.

Those of you who learned French probably know that this language easily tops German in terms of unusualness in this discipline. While largely regular between 17 and 69, and again from 100 onward, it gets truly interesting in-between: numbers between 70 and 79 are counted as sixty-ten to sixty-ten-nine (*soixante-dix* to *soixante-dix-neuf*), while those between 80 and 99 are even stranger (*quatre-vingts* = four-times-twenty to *quatre-vingt-dix-neuf* = four-times-twenty-ten-nine). How's that for a brain twister?

The Japanese, obviously worried that their logical counting system might make life **too** easy, came up with another brilliant curveball: depending on **what** it is they are counting, they use different word endings and occasionally modify the main part of the count word, too. The number eight? *Hachi*. Eight (people)? *Hachi-nin*. Eight (horses)? *Hap-piki*. Eight (sheets of paper)? *Hachi-mai*. Eight (cylinders)? *Hap-pon*. Eight (bicycles)? *Hachi-dai*.

Are you having fun yet?

Let's face it: the real insight all this provides should have us do more than merely snicker about the strangeness of it all. This is not just a numbers game—similar conceptual differences are found across all aspects of verbal communication. Scientists have found ample evidence of language development impacting brain structures. In other words, the wiring of our brains is different depending on our respective native language(s). Making matters more complicated, this brain development process slows down and comes to a halt when we are (you guessed it) teenagers. Those who learn another language later in their lives are likely to struggle more, require more time, and face more misunderstandings when translating into their native one. That is because to their brains, the foreign-language concepts are, well, foreign.

Are you taking this knowledge into account when communicating with non-native contacts?

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