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あ！富士を見える。/Hey! Me Mt Fuji Can See: Naming the Fourth Primary Color

Josef MESSERKLINGER

Introduction

The opening scene of Stanley Kubrick's film, *2001: A Space Odyssey*, subtitled "The Dawn of Man", explains more in pictures than can be expressed in mere words. But it also raises a few questions. For example, although we cannot say whether this accurately represents what really happened in the past-hominins discovery of a certain tool—how did that ape man explain his idea to the others? Some language would have been helpful, no?¹

In fact, tool use and language seem to go hand in hand, so to speak. In a September 4 2013 article for the online magazine *Psychology Today*², Christopher Bergland reports about a study³ which found that brain areas used for language are the same ones used for tool making, supporting Darwin's theory that tool making and language developed together. Of course, other animals make tools and can communicate, but the complexity of our tools and language separates us from them. Furthermore, it is easy to see the connection between language and tool making, since many have argued that language is, after all, a kind of tool.⁴ But if language is another one of our tools, how did we discover it?⁵

Bergland also mentions another study⁶ which found that human babies react to the

¹ Perhaps a demonstration along with some pointing, or:

Ape Man 1: If you take this and do like this, see what happens?

Ape Man 2: Yeah, so what?

Ape Man 1: demonstrates

Ape Man 2: Ow! Whadjya do that for?

In fact, evidence suggests that dolphins can "pass useful bits of know-how from mother to child" apparently without language. *Scientific American*, September 2018 p. 56

² (retrieved July 25 2018 from <https://www.psychologytoday.com/us/blog/the-athletes-way/201309/human-babies-rely-primitive-reflexes-learn-language>)

³ University of Liverpool. (2013, September 3). Language and tool-making skills evolved at the same time. *ScienceDaily*. Retrieved July 25, 2018 from www.sciencedaily.com/releases/2013/09/130903102003.htm

⁴ Vygotsky Lev S "Language is the tool of tools." And more recently Everett, Daniel L (2012) *Language: The Cultural Tool*, Pantheon Books

⁵ Unlike sticks and stones (or perhaps bones) it is said that names cannot hurt (well, that is certainly debatable.) Weren't the ape-men in that opening scene of 2001 taunting each other? Their gestures suggest so much.

⁶ "Non-Human Primate Vocalizations Support Categorizations in Very Young Human Infants" September 3, 2013, the *Proceedings of the National Academy of Sciences*.

calls and cries of other primates as they would to the human voice. The study argues that infants' reactions to these sounds are a reflex and that their first vocalizations are themselves a matter of producing more and more accurate imitations of the sounds they hear. Further support for the idea that language, or at least pronunciation, develops through imitation⁷ comes from studies with song birds. Ludkova, Wada and Jarvis (2010) note in their review of the literature that “[f]or songbirds, multiple researchers have hypothesized that the dopaminergic system is involved in the modulation of social-context-dependent song production and song learning...”⁸ In other words, many researchers believe that birds learn to sing by copying their parents and that they are rewarded with a hit of dopamine when they get the notes right.⁹

While these studies suggest that we have been prepared by nature to acquire language—say, through our obsessive need to make sense of any sound we hear or phenomenon we encounter¹⁰—we need not look so far into the past nor at other species to see where words come from today.¹¹ It should be no surprise that as we learn more about the world and as our societies grow and change, our toolbox gets bigger and more complex.¹² The Oxford English Dictionary, for example, says that “[m]ore than 900 new words, senses, and subentries have been added to the Oxford English Dictionary” in the 2018 update.¹³ Many of the new entries are old words that have taken on new meanings—e.g. binge-watch, imposter syndrome, etc.—some are old words that have re-entered the language—e.g. *spad*, a contraction of *special* and *adviser*—and others still are new combinations of words—e.g. *precariate*, people whose social and economic status is unstable or insecure. So, while the language is creative and new ideas and senses are being added all the time, much of the change seems to be in meaning rather than new coinages.

Still, given this phenomenon of apparent language growth, it is tempting to speculate that if we go back in time, languages were much simpler and had very few words. In fact, some linguists have argued that primitive languages must have been made up of

⁷ and, dare I say, positive reinforcement?

⁸ Kubikova, L., Wada, K., & Jarvis, E. D. (2010). Dopamine receptors in a songbird brain. *The Journal of Comparative Neurology*, 518 (6), 741-769. <http://doi.org/10.1002/cne.22255> (retrieved August 13 2018 from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2904815/>)

They also note that many of these studies suggest our first words were love songs.

Ape Man: You and me, babe, how 'bout it?

Ape Woman: Hey, it's Romeo.

⁹ See also: <https://www.sciencenewsforstudents.org/article/how-birds-know-what-not-tweet> (retrieved August 15 2018)

And surely, these songs have meaning to the birds themselves even if we cannot understand them. See note above.

¹⁰ See also: <https://www.livescience.com/52364-origins-supernatural-religious-beliefs.html> (retrieved August 15 2018)

And for example, a discussion of the sleeping habits of colorless green ideas and the impossibility of mauve ideas: <http://www.mit.edu/people/dpolicar/writing/proseDP/text/colorlessIdeas.html> (retrieved September 23 2018)

¹¹ Wikipedia gives a nice summary of the many and varied theories on the origins of language here: https://en.wikipedia.org/wiki/Origin_of_language

¹² Well, at least it changes.

¹³ The OED online, <https://public.oed.com/updates/> (retrieved July 30 2018)

simple utterances in the same way our first tools were primitive objects made to get a certain job done, such as a tapir bone used as a club to drive an enemy tribe away from scarce resources, and one early theory of the origin of language reasons that language started as a way of crying wolf, as it were.¹⁴

On the other hand, evolutionary theory suggests that rather than a gradual transition to greater ability to use language from generation to generation, suddenly there were individuals distinct from others who could speak. Whether these were the Neanderthals¹⁵ or an even older species remains to be discovered (assuming that that is even possible), but the ability to produce the variety of speech sounds that modern humans can make and then to connect those sounds with ideas to make words and construct complex strings of them must have sprung up suddenly in one generation much like the ability to use smartphones separates one generation today from another.¹⁶

But just like with smartphones in that earlier generations had methods, although cruder than smartphones, of communicating over distances, other animals can communicate using what we might be tempted to call a language, but their “languages” come nowhere near the sophistication and productivity of human languages.¹⁷ That we continually add new words to our dictionaries is sometimes taken as evidence of this. After all, we don’t observe cats meowing in new ways to express novel ideas.

Methods: More Than This

Still, I have often wondered, why are our languages, at least the English language, so limited? All we have to work with are the names of things, actions, and qualities, and maybe a handful of structure words such as articles and conjunctions, which are really just names for concepts, aren’t they?¹⁸ Children learn that these words can be classified as: nouns, the names of people, places, things or ideas, and words that take their place, the pronouns; verbs, the names of actions or states of being (and maybe we can also include the so-called helping or auxiliary verbs here, too, which in other languages might simply be inflections or words that describe the quality of the action including when or how something was/will be done); adjectives and adverbs (and perhaps we can lump prepositions in with these words—words that say when, where or by whom

¹⁴ Ibid

¹⁵ Research now suggests that anatomically, human-like species have been able to speak for about 500 million years (<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0082261>) and focus on speech like sounds (<http://www.pnas.org/content/early/2016/09/21/1605881113.full>)

¹⁶ Sure, the older generation can use them, but many are not accustomed to them. And while smart phones are an evolution of technologies, one generation grew up with them while the previous generation did not. (We may also wonder, then, what abilities were lost along the way.)

¹⁷ Hockett’s criteria for language: http://clas.mq.edu.au/speech/animal_communication/ and here <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4544681/> (retrieved August 15 2018)

¹⁸ Take “a/an” and “the” for example. They are simply names for the concept of “what follows is known/unknown.”

something is/is being done), the names for the quality of some thing or some action, etc. Furthermore, besides yes and no question types, there are only six basic questions we can ask: who, what, when, where, why, and the variations of how - how much, how many, how big etc. There is a nice variety of conjunctions or logical connectors—again, names for the limited ways ideas can relate to each other, such as “and”, “because” and “therefore”—and we have a convenient set of words that name things - some are pronouns, others articles, and others still adverbs - that we use when we wish to point to something, deixis: here, there, me, you, now, this, that, those, the, etc. In fact, these words may be the most important words in English since they are some of the most often used.¹⁹ But that’s about it, a bunch of labels for things we already know about and can talk about. Although we can combine these words in an infinite number of ways and, as mentioned earlier, add to our stock and modify them to suit our needs, we cannot talk about anything else. What is worse, there are philosophers who claim that we cannot think about anything beyond what our language allows, that the language we speak constrains our thoughts, that in fact our vocabulary limits what we see.²⁰ So, according to them, as a speaker of North American English, I have no concept for *sehnsucht*²¹, have never seen 木漏れ日, only know, for example, about one kind of snow and can only tell a handful of blues apart. Lapis lazuli and cerulean are all the same to me.²²

But imagine a fourth primary color.²³ Hard to do since we (or at least, most of us²⁴) can only see three—blue, yellow, and red—and our (again, most people’s) vision is limited to a certain range of light wavelengths; we cannot see ultraviolet and infrared, and even those names suggest that colors lie on a two-dimensional scale. At the far ends of the scale we can see blue at one end and red at the other with yellow (or perhaps green, depending on your theory of color) in the middle. There is no third dimension. Some might nonetheless point to this thought experiment as evidence for the power of the human imagination, that our minds can conjure up ideas outside of experience. Certainly, we can imagine and even visualize things like dragons—enormous flying

¹⁹ In fact, the is the most commonly used word in the English language.

²⁰ https://en.wikipedia.org/wiki/Language_and_thought (retrieved August 8 2018) Other way around, though, innit? The world—including the culture we live in—limits what we talk about. We cannot talk about things that we do not know that we do not know, at least not in any great detail. And surely, our words do not create reality as some claim: I can no more fly like a bird by claiming that I am one than I can roll a seven with a normal six-sided die.

²¹ Oh, so that is what that feeling is called. For a good quick read about this topic:

<http://www.bbc.com/future/story/20170126-the-untranslatable-emotions-you-never-knew-you-had> (retrieved August 9 2018)

²² Nonsense, of course, but discussing linguistic universals, relativism and determinism might make some people see red while making others blue. But it seems, then that linguistic relativism isn’t dead after all.

²³ Not black or white, but one in addition to red, yellow/green, and blue as in the Munsell color system. For a discussion see: <https://www.quora.com/Why-are-white-and-black-not-primary-colors>

²⁴ See Greenwood, Veroniqu (2012) “The Humans with Super Human Vision.” *Discover*

<http://discovermagazine.com/2012/jul-aug/06-humans-with-super-human-vision> (retrieved August 20 2018)

lizards whose breath is so hot that it comes out as fire—but things like this still come from within our range of experiences as perceived by our senses and we can recognize the elements of a dragon in the things around us, snakes and birds. But there are other things we simply cannot know.²⁵ These things, unknown (add an n after k) unknowns, often go unnamed and unthought about.²⁶

Furthermore, thinking about and giving the fourth primary color a name (and the secondary colors made from it by mixing it with the other primary colors) will not help anyone to see it; we have a better chance of seeing dragons, which we can at least visualize and have exist in our imaginations.²⁷ Likewise, simply telling someone that lapis lazuli is a kind of blue will not help them to accurately identify an unlabelled chip of paint of that color.²⁸ On the other hand, even if you do not know all the names for the color blue, and assuming you do not have a certain form of color blindness, you should be able to tell the difference between lapis lazuli and cerulean, although you may have trouble distinguishing between aquamarine, celeste and cyan even after being shown the different blues. And without practice, you may have difficulty recognizing them when you see them a second time. Even with practice, though, you may still have difficulty naming them²⁹ and might even argue with your interior designer about what to call them, but when we compare them side by side we can again see that they are different. And with a little knowledge of how colors are mixed, we can then all say that one color blue has more yellow (or again, green depending on your theory of color) in it than another and that one color is somehow deeper than another—purer with less white or black in it. The name, however, does not change what is there and will not help us to see the difference.

On the other hand, much is written about the differences between two things and what to properly call them and debate among even experts continues, with definitions being modified to better clarify what is meant or to help include or exclude a class of things for scientific or political purposes, etc.³⁰ Forbes magazine and more recently the news feed service MSN have brought up the debate over the classification of Pluto: is it a planet or not?³¹ Much

²⁵ When we do start to see a fourth primary color, we will have a lot of catching up to do both with our understanding of science and with our words for color.

²⁶ And rarely if ever discussed, at least not by ordinary people worried about what's for supper, and for good reason: what is the point?

²⁷ Can you picture a frike if I told you it was a cross between a bicycle and a frog. Can you picture this: $x|x=x+1$?

²⁸ Is it lapis lazuli or ultramarine?

²⁹ So, thank goodness for the general term. Perhaps we can think of them as a kind of pronoun for colors?

³⁰ For example, the notion of conservative and liberal in the US continues to change, and terms such as Reagan Democrat come into existence to help define shifting notions of political allegiance, which sometimes leads to what are perhaps anachronistic arguments about Herbert Hoover: <https://answers.yahoo.com/question/index?qid=20120412184315AA1bN4N&guccounter=1>

³¹ Forbes magazine online <https://www.forbes.com/sites/bridaineparnell/2017/02/21/pluto-could-become-a-planet-again/#47fb05fe6f6d> (retrieved September 10 2018) and <https://www.msn.com/en-us/news/technology/pluto-might-become-a-planet-again-because-astronomers-can't-make-up-their-mind/ar-BBN1wbc> (retrieved September 10 2018)

hinges on how “planet” is defined, and who is defining it, even though ordinary people who have grown up in an age when Pluto was the ninth planet from the sun may never have stopped thinking of it as a planet. It’s just Pluto.³²

So, communicating ideas clearly and accurately must have been frustrating for the first users of language if they had a limited number of words to work with, at least at first, judging by the rate at which we come up with new words. If we think about all the new words we are adding to our vocabulary, we can see that we are still sharpening our tools and discovering things to talk about that we didn’t know about in the past.³³

Or did the first language users find communication any more frustrating than we do? Most of the new words added to the dictionary as mentioned above have their origins in words that have previously existed. In an article on the origin of words, *The Guardian*³⁴ identifies 13 ways new words are made and only one of them, nonce words, are completely new. Our new word for the fourth primary color will most likely be the name of a common or perhaps typically representative object that has that color or, as was the case with lapis lazuli, from the source used to make the pigment and will come into use once it is needed.

Literature Review: All or Nothing

Still, how (or perhaps, why) did this new generation of humans—the ones who started using their vocalizations in complex new ways—start to communicate in ways that were different from their parents? On the face of it, our language is different from the way other animals communicate—after all, there are only so many ways a cat can hiss at another as a way of making a threat—and so at some point a qualitative leap must have been made from mere communication to language. Like the ape-man and his bone in *2001: A Space Odyssey* did one of us suddenly realize that sounds can be used to represent something—objects we see or hear etc., actions, colors, gravity, the hardness of brick walls, mental states, memories, plans, products of our thoughts and imagination, etc. - in the mind and that these “words” can be strung together into complex thoughts and so help us to think and exchange ideas? Or were they like Humpty Dumpty using words as they pleased³⁵, privately giving names to things and using those names to help them manipulate these abstractions in their minds or to help them remember something important?³⁶ Or did we suddenly begin to argue amongst

³² even though many of us have never seen it!

³³ One widely known creation myth has the first human giving names to the various animals and birds around him.

³⁴ Bodle, Andy (2016) How New Words are Born, *The Guardian Newspaper Online*

<https://www.theguardian.com/media/mind-your-language/2016/feb/04/english-neologisms-new-words> retrieved August 7 2018

³⁵ And we do! We make words mean what we want all the time—just look at the list of new words the OED has added to their dictionary.

³⁶ But then did those names somehow catch on as memes do and everyone else started using them the same way?

ourselves about the proper term for, say, class divisions within our group?³⁷ After all, the first users of words didn't have a dictionary to tell them what words mean. Or did we simply misunderstand our parents' vocalizations, like newborns attending to any vocalization and add meanings to the sounds heard?³⁸

In any case, the idea of a primitive language without a grammar, one that simply strung words, or more accurately labels, together without clarifying their function or connection³⁹, although an early stage in child language development, has been dismissed by many researchers and philosophers.⁴⁰ Without grammar, any language that simply puts two words together dissolves into ambiguity.⁴¹ There is a reason children grow out of this stage fairly quickly, usually after going through what is sometimes referred to as "the terrible twos". And in fact, animal research has shown that humans are not the only ones, and therefore probably not the first, to have a concept of the symbolic use of sounds for communication and understand the syntactic relationships between them.⁴²

Surely, if early humans could figure out how to use a bone as a weapon, they could have figured out how to make a sentence. After all, the average human being learns to speak with little effort, yet not many of us know how to pound a nail into a board prop-

³⁷ See, for example, Messerklinger, Josef (2011) You Just Can't Trust Foreigners *TOHO University Bulletin of Liberal Arts* number 43

³⁸ CF fleek which, as Meriam-Webster points out, is a misunderstanding of the word *flick*: <http://unabridged.merriam-webster.com/blog/2015/02/raising-an-eyebrow-on-fleek/>

³⁹ Language must be more than associating sounds with meaning—Although some researchers suggest that dogs can understand words (http://www.nature.com/news/dogs-can-tell-when-praise-is-sincere-1.20514?WT.ec_id=NEWS-20160901&spMailingID=52197879&spUserID=Njk3NjE5NzEwNjES1&spJobID=1000135317&spReportId=MTAwMDEzNTMxNwS2 retrieved March 30, 2017) barking dogs, according to Professor Schwarzman (198?) in Gary Larson, *The Far Side*, are all merely saying hey.

⁴⁰ In his review of *The Singing Neanderthals: The Origins of Music, Language, Mind, and Body* by Steven Mithen (Cambridge: Harvard University Press, 2006) Neil Smith compares theories about a Neanderthal language to a Rudyard Kipling "Just So" tale. Smith, Neil (2008) "The Evolution of Music and Language," in *Current Anthropology* vol. 49 no. 43 University of Chicago Press.

In his review of *Language Classification: History and Method* by Lyle Campbell and William J. Poser. Cambridge University Press, 2008, George Starostin notes that "the emergence... of a veritable swarm of 'theories' and 'hypotheses' about the history of language as a whole or of individual languages and language groups, that have little, if anything, to do with science..." obscure valid historical linguistics research (in *Journal of Language Relationship* • Вопросы языкового родства • 2 (2009).

In addition, Wikipedia quotes Campbell and Poser saying that "the search for global etymologies is at best a hopeless waste of time, at worst an embarrassment to linguistics as a discipline, unfortunately confusing and misleading to those who might look to linguistics for understanding in this area." https://en.wikipedia.org/wiki/Proto-Human_language retrieved August 22 2018)

I concur. Likewise with theories about the early syntax of human languages.

⁴¹ For example, when a two year old says "no milk", even given a context it is difficult to understand the child's meaning. Is her cup empty and she wants more or is she saying she does not want milk? On the other hand, in Japanese, the meaning of "電話して" is perfectly clear to native speakers. But even in this two-word sentence, the verb is inflected and includes an implied subject, you.

⁴² *Scientific American*, pg 58 September 2018.

erly let alone have the skill to even make a tool as simple as a hammer.⁴³ At the least, the ability to use language most likely developed as rapidly as smart phones—within a generation or two. Indeed, once humans understood how to connect the sounds they were making with their voices to meaning, rather than hissing at each other (or perhaps raising a fist in the air⁴⁴), they must have been able to make threats such as, “Go away or I shall taunt you a second time.”⁴⁵ or say politely, “No milk, thank you; it upsets my stomach.”⁴⁶

That is, unless, of course, they never had a need to say such things. Just like no one needs to worry about the fourth primary color, concepts that early man and people living in simpler societies surely didn’t need are things like counting out change and asking which necktie best matches a suit and so probably won’t figure highly in their stock of language.⁴⁷ Likewise, unlike in written language, sentence patterns tend to be simpler. For example, in response to the question “What are you doing?” Someone would probably answer, “Studying.”⁴⁸ More explanation is most likely not needed since the context and shared information about studying should make the answer clear to the questioner.⁴⁹ Surely, once hominines could make a sufficient variety of vocal sounds and discovered how to use them to name things and how to connect these names one to another, they could talk about those things and about the actions they take, the results of those actions, and the qualities that things and actions have.⁵⁰ Why should they only have said, “dog run” or “kill man rat”⁵¹, and not, “most dogs love to run”⁵² or “Come out and take it, you dirty, yellow-bellied rat, or I’ll give it to you through the door!”⁵³

⁴³ Be honest, how often have you bent a nail or even missed while trying to hammer one into a piece of wood? How many strikes did it take? And heaven forbid, have you ever used a screw driver as a hammer?! <https://www.artofmanliness.com/articles/how-to-use-a-hammer/> That said, how many of us use words properly every time? Do you know the difference between tint, shade, tone, value and saturation? <https://www.sherwin-williams.com/home-builders/color/color-education/sw-article-pro-the5mostcommon> (retrieved September 8, 2018)

⁴⁴ Much nicer than leaving a severed horses head next them as they lie sleeping in bed.

⁴⁵ Likewise, in the right context, telling someone nowadays that you will make them an offer they can’t refuse,

⁴⁶ Let us become like the doctor visiting Leonard Bloomfield and insist that some Native-American languages had a very limited vocabulary. Crystal, David (1987) *The Cambridge Encyclopaedia of Language*, p.2

⁴⁷ As W Tecumseh Fitch, “Three meanings of ‘recursion’ : key distinction for biolinguistics, in Larson R.K., Deprez V. and Yamakido H. (2010) *The Evolution of Human Language* CUP p. 89. notes, we can “express any concept that can be conceived.” That is, assuming we attend to it. But this also suggests that we cannot talk about concepts that we cannot conceive of. CF, Rumsfeld, Known Knowns, etc. Further, it assumes we always communicate well; it seems that our ability to conceptualize regularly outstrips our ability to explain our ideas to others. Anyone who has read something or heard someone try to explain and not understood has found evidence of this.

⁴⁸ Example given by Cao, Nguen Thanh (2015) “The Differences between Spoken and Written Grammar in English, in Comparison with Vietnamese,” in *Gist Education and Learning Research Journal*. issn 1692-5777. no. 11, (July - December) pp. 138-153.

⁴⁹ CF A Martian Sends a Postcard Home by Craig Raine

⁵⁰ English color words, for example are no more sophisticated than the color words of any other language, judging by clothes catalogues. Care to see the plum color bandana I recently bought to go with my charcoal grey one? <http://thebandannacompany.com/products/paisley-bandannas/traditional-paisleys/>

⁵¹ An example given in E. Luuk, H. Luuk (2018) “The evolution of syntax: Signs, concatenation and embedding,” *Cognitive Systems Research* 27 found at <https://www.sciencedirect.com/science/article/pii/S1389041713000028>

⁵² <https://www.runnersworld.com/runners-stories/a20810747/the-best-types-of-dogs-for-runners/>

⁵³ This also touches on Searle’s ideas of doing things with language, but we won’t go into that here.

While language in actual use is certainly not always so elaborate, especially when used colloquially—after all, we still do communicate in grunts—the complete idea behind our sentence fragments, e.g. 電話して or “call me”, are perfectly understood (by native speakers) as complete thoughts.⁵⁴ Either you have a language that marks you as human, or you don’t. To think otherwise is to deny the skill with which early *Homo sapiens* and other hominines made their stone tools and to repeat the mistakes made by anthropologists who assumed Neanderthals were dumb brutes. In any case, it doesn’t take much effort to question this kind of speculation, even if it is dressed as science.⁵⁵ We simply do not know, and convincing arguments cannot be made (yet) with our current state of knowledge.

Results: Laying Down the Law

And yet, language teachers are in some ways confronted with this very situation—how languages are learned. The first language users had to be aware that someone was speaking to them, making vocal sounds with the intention of drawing the listener’s attention to something and maybe saying something else about it.⁵⁶ And assuming that words refer to things in the real world, it is simply a matter of tracing their origins back to the beginning, when words were first uttered. For parents, this is a fairly momentous occasion and one which language acquisition and child development researchers have studied and about which paediatricians and child development books (and now web-pages) will advise parents. Likewise, for a teacher who gets students to understand “this is a pen” and sees the light comes on in the learner’s eyes.

And so, blue is blue. When you and I look at a cloudless sky on a sunny day—the example given by the OED—we say that it is blue because that is the word we have learned to use when referring to that color. To argue otherwise is perverse at best.⁵⁷ The sky is blue. That is what we call that color in English.⁵⁸ Furthermore, we use that word, blue, to name the color because when we see the color and need or want to talk about it, we realize we are seeing that color and know that that is the word that we and others use when referring to that color, for example, to point out to someone else who shares our language that the weather seems to be fine today - “What a beautiful blue sky.” This is very important because in order to use language we must share not only a common understanding of the world around us, but also of the words

⁵⁴ Now, of course, all we have to say is, “you dirty rat” and whomever we are talking to will understand. After all, when a cat hisses at another, they know what they are talking about.

⁵⁵ So, leave the “Me Tarzan, You Jane” to the movies.

⁵⁶ After all, “My eyebrows are on fleek.” must mean something.

⁵⁷ While the sky might be orange at certain times of the day under certain atmospheric conditions, if someone insists without joking that a blue sky is orange, you are more likely to suggest they have their eyesight checked than agree with them.

⁵⁸ And we don’t need a dictionary to tell us that, even though there are plenty of people who will lecture you on what a word really means and how you should be using it. On the other hand, if we use words like Humpty Dumpty did, then we might not understand each other at all.

that are used to refer to things and how they are used. Skies are blue when there are no clouds that might threaten rain.⁵⁹

Likewise, we will identify most other colors with remarkable agreement—reds, yellows, greens, oranges and browns. There is no question about that, unless you have some sort of visual impairment. Disagreement arises when we find that our shared vocabulary is lacking, insufficient, or ambiguous. Disagreement also arises when our experiences differ. To take one example, descriptions of audio equipment⁶⁰ are often nonsensical because more than any other sense, hearing acuity varies between individuals. Younger people who still have a strong perception of higher frequencies, for example, will find sounds reproduced by some audio equipment to be “shrill” while older individuals or those with some hearing impairment will find it “detailed” or maybe simply “bright”, etc.⁶¹ But even these terms need further explanation. While shrill has a fairly good chance of being understood - the OED says it is “high-pitched and piercing” - detailed and bright, in regard to sound reproduction equipment, are less precise. The OED says, not quite helpfully, that detailed means “having many details or facts” while bright as “full of light.” We find similar comments when people talk about the taste of wine and the fluency of non-native English speakers. It is a bit like trying to describe a fourth primary color. You just have to experience it to know what it is.

Nonetheless, we grow up making a wide range of vocal sounds⁶² and we expect that when we hear others make certain sounds in certain combinations and in a certain order that those sounds mean something.⁶³ But sometimes, meaning cannot be made for one reason or another. For example, while I respect there is a range of colors, from red to violet, and that some people are very sensitive to color, many of us will use catchall terms such as blue even when someone more sensitive will contradict us and explain that the color is actually sapphire.⁶⁴ Unless I know what sapphire means, I will misunderstand what is being referred to and will probably continue to call things which are that color simply blue.⁶⁵

In this sense, language is being used as a tool. It works because we all agree on

⁵⁹ Or promise, depending on your perspective, in which case we wouldn't say beautiful.

⁶⁰ Or tubas, to take another example. <http://forums.chisham.com/viewtopic.php?t=88243>

⁶¹ For example, try searching those terms here: <https://www.head-fi.org/>. This thread is a good place to start: <https://www.head-fi.org/threads/bright-vs-warm.696541/> (retrieved August 27 2008) Other words used in an attempt to describe such sound reproduction qualities are “present”, “cold” “clinical” or “up front.”

⁶² Cats purr, yowl, hiss and say meow and that is about it. Of course, they know what they mean when they do each of those things. Dogs, of course, can only say “HEY”.

⁶³ Even the famous sentence, Green ideas sleep furiously, intended as a grammatically correct string of words without meaning can be interpreted to have meaning.

⁶⁴ Until recently, I had thought sapphire was a kind of red, confusing it with garnet.

⁶⁵ Using such precise terms in ordinary conversation is often inappropriate and perhaps a bit like a pharmacist using medical jargon with a patient. On the other hand, seeing everything tinted on from or another of blue could be a sign of cyanopsia due to cataracts or the side effects of some drugs.

what each tool does, what each of the words refers to and how it is used in a sentence, as a verb, a noun, a modifier, or a structure word. The problem many non-native speakers have when using their new language is that they don't know how to put the words together or that they get the wrong word, either one with the wrong meaning or the wrong grammatical form. It may make sense to them or be poetic (a marmalade sky?) as might a private language, one used for thinking and never shared with anyone else (Wittgenstein's thought experiment⁶⁶) but it still must refer to something at least to the thinker or the poet. But no one else will understand a private language, and poetry is sometimes intentionally indirect, complex, opaque, and imprecise or at least playful, and so when speaking with others we often use common words that refer to common ideas that are shared by others in our group.

Discussion: What's That Sound?

Whether this tool, language, is innate or socially constructed⁶⁷, and even whether you agree that it is a tool or not, when speaking with each other we all must agree what the words we use mean.⁶⁸ Take the definition and etymology of the word *bling* for example.

Bling (n.) also bling-bling, by 1997, U.S. rap slang, "wealth, expensive accessories," a sound suggestive of the glitter of jewels and precious metals (compare German *blinken* "to gleam, to sparkle").⁶⁹

Now, I cannot imagine what sound might be made by glitter, "A bright, shimmering reflected light" according to the OED;⁷⁰ nonetheless, the meaning becomes clear after a few examples and I can understand what the word is supposed to refer to. Moreover, the etymology of this word recalls one theory of the origins of language (speculation about which seem endless and inconclusive), and one way by which language continues to evolved and change, even if as in this case, it is describing a sound that no one can hear⁷¹. Likewise, with the word *fleek*, mentioned above, we see how language is evolving (and get perhaps another glimpse at one of its possible origins.) In the case of *fleek*, a misunderstanding

⁶⁶ But surely, even a private language must refer to something? After all, Wittgenstein uses "S" as a private word and says it refers to a feeling.

⁶⁷ For a discussion of this, here's a good place to start:

<https://quod.lib.umich.edu/e/ergo/12405314.0003.019/-what-is-language?rgn=main;view=fulltext> (retrieved August 30 2018)

And frankly, I don't see why it cannot be all of those things: the use of language can be innate while at the same time a tool that develops from the need of a group of people with the ability to use language. For a brief discussion see Kirby, Simon (2017) "Culture and Biology in the Origins of Linguistic Structure". *Psychonomic Bulletin & Review* vol. 24 no. 1 pp. 85-90

⁶⁸ Perhaps this is the concept behind Saussure's *langue* and *parole* or Chomsky's deep and surface structure.

⁶⁹ From The Online Etymology Dictionary <https://www.etymonline.com/word/bling> retrieved August 7 2018

⁷⁰ On the other hand, the connection between bling and words with similar meanings in other languages is easier to see. For example, it is easy to see how a language user can go from blink to bling; when a flash of bright light, say from something metallic hits your eye, the instinctive reaction is to blink (or in German, blinzeln.) And when two metallic objects strike each other, they make a "clinking" sound - precisely the time when bling is used in comic books - during sword fights.

⁷¹ Unless, of course, they have synaesthesia.

became an internet meme, which other young people began to copy. Whether the word takes hold and spreads remains to be seen and most likely depends on its usefulness.

And yet another way is suggested in an article in the BBC which reports⁷² on how Chinese social media users are getting around censors by creating new words. The article itself explains these new words in English using clever coinages such as “freedman” and “innernet” “harmany” “departyment” “chinsummers” and “smilence”, renderings that most English speakers will easily understand, especially in context, but really a kind of secret code, a way of getting past censors and contrary to what we usually think of as communication, a way for others to NOT understand what is truly being said.

Then there are emojis.⁷³ While not quite the same as vocal language, they do show how new forms of symbolic communication evolve and the problems encountered by the users of this form of communication. What strikes me most about emojis are their playfulness, which further suggests to me that language may (indulging in some speculation) have begun as a form of play, and perhaps like emojis, may not have been a better way to communicate at first. After all, some of us mis-interpret plenty of them. For example, is the “information desk person” emoji showing confidence or arrogance?⁷⁴

But indeed, at this point we are no longer concerned with the biological origins or language, but with how it develops through use, and it is human cultures that have taken over from where physiology has left off—we can make a variety of sounds with our voices and somehow attach meaning to them, but what we do with it from there seems to be what determines what the language will become.

Practical Application: Birds That Fly

And here in lies the problem. When a speaker of, say, Japanese learns English it is easy enough for them to learn words—blue is 青い, right is used to mean either 右 or 正し, etc.—even though they may mix them up a bit sometimes (right/light, correct/collect and rarely blue/brew). The difficulty comes not only in getting the right word to fit the meaning and the context but also in trying to string them together in ways that are understandable (more or less) to speakers of English. The unwary learner of a second language will apply familiar language rules inappropriately and thus make strings of words that make sense only to them.

So, for example, in a review of Alex Reinhart’s book, *Statistics Done Wrong*, a student writes:

⁷² Allen, Kerry and Liao, Stuart (2018) “China’s Rebel Generation and the Rise of ‘Hot Words’”. *BBC’s* online magazine Capital <http://www.bbc.com/capital/story/20180809-chinas-rebel-generation-and-the-rise-of-hot-words> (retrieved August 11 2018)

⁷³ <http://www.bbc.com/capital/story/20180716-why-there-are-so-many-japanese-emoji>

⁷⁴ <https://www.wired.com/2015/05/using-emoji-wrong/>

* As oppose to Huff accused intentional exaggeration and fabrication of statistics in politics and the media, Reinhart focuses on statistical errors in science field.⁷⁵

and later:

* In a nutshell, the p value is a numerical value used when the statistical hypothesis is inspected whether it was right or wrong.

Surely, the writer understood what she meant when constructing this sentence and perhaps there is someone sympathetic or clever enough to figure out what was meant, but without a bit of effort, the average English speaker would most likely want to ask the writer to explain since it seems too much is missing or simply wrong to make easy sense of this.

On the other hand, many English speakers can probably understand the intention behind this sentence, especially given the context:

* But the book is much suitable for people in science.

A simple word choice error. Likewise, a sentence from a student introducing a statistic about the increase of grizzly bear encounters in Montana wrote:

* The campsites in the forest have high possibility to meet the bear.

Obviously, there is confusion over subject and verb, or perhaps more accurately, actor and action—who is doing what? Or is this another word choice error? Campsites instead of campers? Or is it a verb confusion? Campsites have a high possibility of having bears present? (Or more elegantly, bears are very likely to be present at campsites.) Similarly, in a data commentary about movie attendance, a student wrote:

* According to their report, the number of movie attendance (sic) during a year were only 35.3 percent which recorded the worst since the survey started in 2012.

Perhaps what the writer meant was, movie attendance/the number of movie goers during the year decreased to 35.3 percent, the worst since the survey started in 2012. And:

⁷⁵ Perhaps this means: Unlike Huff, who accuses politicians and the media of intentionally exaggerating and fabricating statistics, Reinhart focuses on statistical errors found in the field of science.

* Japan's movie industry has been suffered from a slump in business.

Although error analysis is no longer in fashion among applied linguists—the study has not born much fruit and no matter what methods teachers employ, learners still make the same mistakes—these examples suggest that it is more than a matter of learning different labels for things and the correct ways of putting them together.⁷⁶ It runs much deeper than that and may be the result of different ways of thinking about subjects and verbs, actors and actions.

Of course, it is not only Japanese learners of English who confront this problem. Native speakers of English who are accustomed to thinking in SVO sentence patterns may have difficulty forming sentences such as:

富士山が見える。

Which is typically translated as *I can see Mt Fuji*.⁷⁷ The difficulty comes, perhaps, from differences in thinking, nuances of meaning and in trying to apply grammar rules learned in one language to another.⁷⁸ Mt. Fuji or 富士山 obviously names something we can all refer to - the cone-shaped mountain west of Tokyo. English speakers might assume that the verb 見える means *can see* - which is how it is usually given in dictionaries and how we usually think of this action, although there are quite a few other ways of thinking about it. Then, to make *Mt Fuji* the object of the sentence while assuming that the subject is the understood first person singular pronoun contained in the conjugation of the verb, say:

* 富士山を見える。⁷⁹

Thinking that it means, *I can see Mt Fuji*.⁸⁰ The English speaker's confusion may come from hearing sentences such as:

⁷⁶ For example, to explain the differences between glasses and contact lenses a student wrote: *The contact lenses can't enter if the condition of the eyes is bad, and eyes are sometimes thirsty when wearing it*. Somehow understandable as is the cause of the error: 入る vs. 入れる.

⁷⁷ But maybe relying on the logic of the ideas to make the meaning clear and saying * "Me Mt Fuji can see" is better since it preserves more of the Japanese grammar? But again, we run into the problem of having to resolve ambiguity. For example, in * "Me you help", who helps whom? Without resorting to some rules such as word order, we cannot say.

⁷⁸ And also in the translations given—the illocutionary force might be the same, but the sentences are not!

⁷⁹ Likewise, perhaps one way of translating "I can see Mt Fuji" into Japanese to help learners understand the thinking and grammar of the English with the を marking Mt Fuji as the object of the verb? I believe translating like this was used at one time in an attempt to teach English.

⁸⁰ And yet, google translate has no trouble translating it into *I can see Fuji*: <https://translate.google.com/#ja/en/%E7%A7%81%E3%81%8C%E5%AF%8C%E5%A3%AB%E5%B1%B1%E3%82%92%E8%A6%8B%E3%81%88%E3%82%8B> (retrieved October 12, 2018)

私たちは月を見る。⁸¹

Which is rendered, *We are going to look at the moon*⁸², and inferring that the を marks the object of the verb with the subject marked by は. In fact, most beginning Japanese grammar books written for English speakers stress that the particle は identifies “a topic or contrastive element” while が marks subjects and を objects.⁸³ Using this way of thinking, the sentence, 富士が見える should be interpreted:

* Mt Fuji can see.

Which is, of course, absurd. Perhaps a better way of understanding the sentence is to think of 見える as an intransitive verb, and hence, a more accurate translation being *Mt Fuji has appeared*, or think of 見る not as a verb but a kind of adjective, so, *Mt Fuji is visible*.⁸⁴ Indeed, the Japanese sentence does not specify, as English might, who can see Mt Fuji and is perhaps similar to the perhaps equally confusing (to non-native speakers) sentence:

You (as in one) can see Mt Fuji.

While the grammar of the sentence can be resolved with some linguistic sleight of hand, a bit more problematic is:

私に英語がわかる。

As with the Fuji sentence, it is usually translated into English as, *I understand English*, or perhaps more accurately, *English is comprehensible to me*.⁸⁵ And like the Fuji sentence, the “subject” can be left out to make the sentence: 英語がわかる. Likewise, we can reinterpret the sentence as: *English is comprehensible*. Of course, this leaves the question of how to classify the markers が and に.⁸⁶ It also leaves the problem, if we are to maintain consistency with classification of Japanese verbs as transitive and intransitive and even their classification of verbs in the English sense at all.⁸⁷ Like with the trio of English words -see, watch, and look⁸⁸—learners of Japanese need to understand what the words like 見る mean in Japanese and not assume that they are

⁸¹ From: <https://ejje.weblio.jp/content/%E6%9C%88%E3%82%92%E8%A6%8B%E3%82%8B>

⁸² Although google translate gives it as: We see the moon.

⁸³ Makino Seiichi and Tsutui Michio (1989) *A Dictionary of Basic Japanese Grammar* The Japan Times Tokyo

⁸⁴ This is in fact an alternate translation from google translate.

⁸⁵ Likewise, 私に富士山が見える can be interpreted, Mt Fuji is visible TO ME.

⁸⁶ I will leave clarification of this to linguists with far greater skill and understand than me: 三原健一, 平岩健 (2006) 「新日本語統語構造」松白社, 東京 and Ura, Hiroyuki (1996) *Multiple Feature-Checking: A Theory of Grammatical Function Splitting*, PhD Thesis submitted to MIT

⁸⁷ Are they really adjectives?

⁸⁸ <https://dictionary.cambridge.org/us/grammar/british-grammar/look-at-see-or-watch>

the same as their common translation.^{89,90}

Conclusion: Speak Softly and Carry a Big Stick

Obviously, Japanese is not English. And calling words that precede が^s subjects and words that precede を^s objects might be misleading to speakers who understand these concepts in terms of English subject and object. So, it might be difficult at best to explain either language in terms of the other. They both make meaning for people who understand the vocabulary and grammar rules of the respective languages and sometimes uniquely, as we have seen, to individuals who have made up the rules for themselves. If someone insists they can see a fourth primary color, perhaps they can. In any case, with the right words, knocking someone on the head with a tapir bone is not necessary.

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⁸⁹ Compare this to the English sentence, *Both sports use a similar ball*. Like the Fuji sentence, it is not the sports themselves that use a ball but the players who do. So perhaps an idiomatic expression—a convenient excuse for all manner of semantic oddities—or “use” really means something else.

⁹⁰ Also, compare the French *excite* with the English *excited/aroused*:

<http://www.bbc.com/travel/story/20181104-why-the-french-dont-show-excitement> (retrieved November 6 2018)