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Words and the world

Language diversity and the senses

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WORDS AND THE WORLD

LANGUAGE DIVERSITY
AND THE SENSES



Niclas Burenhult

THE RJ YEARBOX
2021

WORDS

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WORDS AND THE WORLD

Language diversity
and the senses

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Preface to *Words*

We can hardly get a glimpse of civilisation without encountering words. Like black serpents, they slither along the lines of newspapers and books, across signs and packaging, on phone screens and scraps of paper, and are inscribed in stone. Are we humans without language, without words, even conceivable? Words are our unique medium for sharing information, but also our collective memory and the legacy of all those who have spoken and written, read and listened before us.

Words are simple. Before the age of one year, we already shape the first few. At two, we can put them together. Soon our scope for verbal expression is practically infinite.

The RJ Yearbox 2021 is devoted to what are at once simple and infinite: words and language. In five booklets, the authors describe first words, words that have survived against all odds, words that create 'we' and 'them', words that open doors to understanding of how we actually think, and words that show how society is changing.

This booklet, the fourth, is about the connections between words, language and the way we think. Linguist Niclas Burenhult takes us on a trip into a faraway jungle, where he collects words that categorise smells and more, in a study that demonstrates the diversity of words and how hard it is to understand reality without language.

Jenny Björkman & Patrik Hadenius

An eye-opening experience

I struggle to keep up with the hunter who walks ahead of me on the path. Short of stature, barefoot and with a blowpipe resting on his right shoulder, he moves swiftly through the winding green tunnel that our path drills through the dense vegetation. He suddenly stops and gestures to us, his followers, to do the same. Cautiously, he points up at the foliage in the colossal treetops ahead of us and whispers *ʔay!*. He grabs the blowpipe with both hands and soundlessly disappears into the greenery, while the rest of us in the hunting team warily squat and wait.

It is mid-November 1998 and I am experiencing my first hunting trip with the Jahai, a nomadic hunter-gatherer people in the mountain rainforests of northern Malaysia. A couple of weeks ago I embarked on a research programme to describe and document the language of the Jahai. I have made myself at home in a small village on the Banun River. A long-standing guerrilla conflict meant that visiting large parts of northern Malaysia, from the Second World War to the early 1990s, was prohibited for outsiders, and I am the first linguist to have the opportunity of working in the area. There is therefore virtually no prior information about the language available to assist me, and I am forced to start from scratch. The majority language Malay has had to serve initially as a contact language, but I am assimilating

and using more and more words in Jahai, an Austroasiatic language unrelated to Malay. In fact, one of the linguist's very first tasks in dealing with an undescribed language is to 'collect words', particularly basic vocabulary — meanings that may be expected to be expressed in words in most languages.¹

Hunting with a blowpipe and poison darts is a drawn-out procedure. After the dart hits its target it may take up to an hour, or longer, for the poison to work. During this time, the hunters must sit quietly and wait, so that the prey — perhaps a monkey, giant squirrel or hornbill — is not scared off into the canopy before it is paralysed and falls to the ground. The waiting Jahai hunting team do not lower their guard: they constantly observe their surroundings — and in the rainforest, there is no shortage of sensory impressions to take in. Colours, shapes, sounds and odours create a constant backdrop of sensations that for myself, the newcomer, is an intense and disorienting experience. On top of all that are the heat and humidity.

Sitting there, I ponder what the hunter whispered and suspect that the word *ɔay* may not mean quite what I thought. In my list of basic vocabulary, I have recorded it as a translation of the English word *animal* — information I obtained by asking my Jahai teacher to translate the Malay word *binatang*, meaning 'animal'. But I think it is rather strange that, in this specific situation, such a general term is used. Why not say 'Monkeys!' for instance, which the animals undoubtedly are in this case? Or the name of the actual species? Or might the word have more than one meaning, like the Swedish word *få*, which can mean both 'cattle' and 'animals in general'? At that moment, I see a large beetle crawling right through our temporary camp. I get an idea, discreetly

draw the Jahai's attention to the creature and whisper in hesitant beginner-Jahai, 'What λay is this?' The Jahai chuckle and one of them responds with the words, 'That's a *tarhim* — we don't eat those.' Now I have a fine indication of what is required for something to be named λay .²

Over the ensuing days, weeks and months, I often take the opportunity to observe how the word is used, and ask new questions on the topic. The word's meaning and use gradually unfold and become something considerably more complicated and interesting than I could have imagined. Its meaning as such is quite simple to grasp: 'edible animal' or 'food animal'. This may not be entirely unlike the words 'game' and 'quarry', but possibly with broader connotations including fish, edible insects, shellfish and molluscs, for instance. This might seem straightforward, but the fact remains that there is no other Jahai word that corresponds better to *animal*. No general word extends to animals not eaten by the Jahai, and, besides the unremarkable *tarhim* (the beetle), such animals include eye-catching fauna like tigers, elephants and snakes. These are referred to only by their specific names.

Accordingly, no exact translation of *animal* in the list of basic vocabulary is feasible. If we confine ourselves to translating it into the best available candidate, we miss out not only the meaning of λay but also, in fact, the whole point of this meaning. Accordingly, further analysis shows that λay is one of the nodes in a vast hierarchy of Jahai words that serves as a conceptual structure for their entire subsistence system.³ Corresponding words exist for 'edible fruit' (ripe fruits and berries), 'edible starch' (such as root vegetables and rice) and 'edible vegetable'

(green, leafy plants, etc.), each of which classifies numerous specific edible plants, but excludes inedible ones. The primary principle for organising the vocabulary that denotes animals and plants is thus not the life forms as such, but the Jahai diet. However, the wealth of vocabulary does not end there. *ʔay* and its equivalents are semantically connected with specific verbs signifying the techniques whereby foodstuffs are gathered or hunted, as well as ‘eating’ verbs encoding the types of food consumed. The verb *muc* means ‘to eat *ʔay*’, and corresponding (but different) verbs exist for eating fruit, starch and so on. There is no general word in Jahai for ‘to eat’— all ingestion is linguistically specified according to different food categories.⁴ In addition, *ʔay* serves as a ‘noa-name’, replacing more specific species names that are taboo when people are hunting, handling and consuming the animals in question. For instance, mentioning a leaf monkey (*rampɔw*) by name during the pursuit will spoil the hunting luck. And mentioning its name while eating it causes stomach pain. This explains the hunter’s word choice during that first hunting trip of mine.

Seeing this entire word puzzle fall into place is a eureka moment that humbles me. The standardised list of basic vocabulary has been of some help in starting to document the words. However, its starting point — that the meanings in the list may be expected to be naturally accessible to and translatable into the language I am studying — is problematic, to say the least. Deeper analysis based on the language’s own merits requires me to promptly discard my own and my discipline’s preconceived ideas of what is basic and universal, and also the premise that a word and its meaning can be understood and

explained independently of other words. The reward is a more profound insight into the language and — not least — the cultural context in which the language serves as a medium of communication.

This introductory example of a word in a small and unknown language in what, from a European perspective, is a far-flung part of the world may seem trivial and distant. But to me it represents a first real eye-opener, hinting at the diversity of ways in which human languages put the world and our lives into words. The subject has fascinated me ever since my first hunting trip with the Jahai and has fundamentally shaped my research over the more than two decades since then. We shall return to the Jahai and their language shortly, but first a brief overview of the research field.

Do universal meanings exist?

It is sometimes said that all human languages have the capacity to express the same things — or at least the means of *developing ways* of doing so. To take a few Swedish examples: it goes without saying that words like *allemannsrätt* ('Everyman's Right' of access to the countryside), *smörgåsbord* and *falukorv* (a popular type of sausage from Falun in Dalarna) are not concepts that readily spring to mind in most other languages. For this kind of immediate translation, these words are too culturally conditioned. True, there is nothing to prevent speakers of other languages from adopting the phenomena in question and finding ways of expressing them linguistically — by borrowing the words from Swedish, for example. However, *being able* to express the same things and actually *doing so* are completely different matters. For phenomena that are manifestly specific to certain cultures and languages, perhaps this is self-explanatory; but what about phenomena we perceive as more universal? These should be expressed in words in the same way in all languages, shouldn't they? Surely all languages have words to express basic emotions, such as happiness, sorrow and anger? Or ordinary activities like walking, running and eating? And all languages must have words for universal features of our surroundings, such as water, stone and — yes, that's right — animals, must they not?

As we have already seen, it is really not that straightforward. Linguists have long been aware that the meaning of words is among the most variable aspects of the linguistic system, and are therefore wary of proposing universal meanings. True, lists of basic vocabulary are based on the assumption that some meanings are more stable than others, but few experts would argue that they are entirely universal. A semantic school of thought known as Natural Semantic Metalanguage (NSM) is one of the few attempts in theoretical linguistics to identify universal and indivisible meanings, 'semantic primitives' (or 'primes'), which NSM's proponents say find expression in all human languages. About 60 such meanings have been presented. They include, for instance, the concepts of *I, you, body, much, little, good, bad, big, little, think, know, feel, say, be, live, die, now, place, close, not* and *perhaps*.⁵ However, NSM is a controversial school of thought and neither its theoretical starting point nor its methodology have gained any broad acceptance in the language sciences.

On the other hand, it has been much more common in the cognitive sciences, especially psychology, to propound universal, conceptual phenomena. A crucial issue here is the relationship between language and thought. The dominant view in psychology is that linguistic expressions and meanings may vary, but the underlying cognitive conceptual structures are common to all humankind. We are thus thought to perceive, categorise and memorise things in the same way in cognitive terms but express them in slightly different ways, depending on the language we speak. Linguistic diversity is therefore not assumed to be paralleled by cognitive diversity.

Here, let us briefly return to the introductory example of words for animals. The prevailing view among cognitive scientists is that all human beings in every culture conceive of life forms in hierarchies. People everywhere are believed to reason in terms of, for instance, an overall category of LIFE FORMS, such as animals and plants; these are then divided into, and classified as, a series of increasingly narrow categories. These may roughly follow the lines of our scientific taxonomy: for example, an overarching category like animals or life forms may be split into classes such as BIRDS, INSECTS and REPTILES, which are in turn divided into successively smaller and more specialised groupings, such as genera, species and subspecies. The basic organisational principle is thought to be the perceived similarities among life forms. For example, egg-laying animals with wings, beaks and feathers can be conceptualised as a distinct 'class'. What is more, the starting point for the classification system is invariably seen as being the very life forms themselves — not such characteristics as their eatability. Vocabularies in different languages can vary as to how these categories find expression, and what is included in them. They do not even necessarily find linguistic expression — sometimes they may exist as non-linguistic ('covert') categories only — but the underlying hierarchical principle in our cognition is deemed to be the same. This theory, though not unchallenged, has dominated the debate since the 1960s.⁶

Another area that has received a great deal of attention over the past 20 to 30 years is our strategies for representing spatial relationships in language and thought. Cognitive psychology, supported by countless Western experimental studies, has long

asserted that spatial conceptualisation is fundamentally egocentric. One leading argument is that participants in these studies memorise groups of objects based on their own field of vision. The implication is that people utilise a right–left axis to remember how objects are placed. Investigations of linguistic descriptions show that this is reflected in language: ‘the cup is to the right of the plate’. Words like *right* and *left* have thus been interpreted as linguistic expressions of this supposedly basic spatial awareness.

However, studies of several non-European languages have shown that *right* and *left* are by no means universal words. Instead, these languages make consistent use of, for example, terms denoting cardinal directions (equivalent to, but not always identical with, north, south, east and west). In the Thaayorre language in Australia, the east–west axis is used for nearly all spatial description, as in expressions like ‘the cup is east of the plate’ and ‘there’s a mosquito on my west cheek’. This is an allocentric way of expressing the relationship – not egocentric, since it is not the viewer and one’s own field of vision that serve as the point of departure for the description, but some other component – here, an abstract cardinal direction. What is striking is that non-linguistic experiments in these speech communities show that the participants also memorise groups of objects on the basis of the cardinal directions, not of what is presumed to be the universal, egocentric right–left perspective. Consequently, there is evidence of a clear link between the linguistic and cognitive strategies, suggesting that the community’s language affiliation and the vocabulary available have a greater bearing on cognitive representation than used to be assumed. It has even

been proposed that language has a fundamental role in shaping thought and that cognitive variation among human populations is as extensive as linguistic variation. This theory, known as the Sapir–Whorf hypothesis, is not new, but has gained renewed momentum thanks to these spatial findings.⁷

Another interesting area is emotions. Psychologists, such as Paul Ekman, have long argued that there are a number of basic emotions shared by all human beings.⁸ The ones most often mentioned are ANGER, DISGUST, FEAR, HAPPINESS, SADNESS and SURPRISE, with the corresponding adjectives (*angry, disgusted, afraid, happy, sad* and *surprised*). There is fairly extensive non-linguistic evidence that such emotional categories are relatively uniform across populations. However, the vocabularies of emotions in the languages of the world are often astoundingly rich and do not always seem to correspond neatly to these basic categories.⁹ Once more, Jahai provides an enlightening illustration. Of the six examples above, only *afraid* actually has a direct semantic equivalent in Jahai (*hgik*). Among the Jahai terms, it is otherwise usually not the emotion itself, but the bodily or communicative reaction to it, that is expressed. Examples are *marah*, ‘to show anger’ (not to *feel* it), *wawɔk*, ‘to have a sad facial expression’ (not to *be* sad) and *ʔiʔ*, ‘to give a start from surprise’ (not to *be* surprised).

In the world’s languages there is, moreover, no dearth of words with more or less exotic meanings that are hard to translate, denoting emotions that may not be immediately intelligible to an outsider.¹⁰ What about the word *awumbuk* in the Baining language family of Papua New Guinea, signifying the lasting, weary listlessness and lassitude felt by hosts when their

overnight guests have left? Or the Dagestan Dargwa language's word *dard*, which covers both grief and worry? Or the Jahai word *mamun*, which denotes the combined feelings of shame, disappointment and indifference when you have asked someone for something and it is not given to you? There are also examples from closer to home. The Spanish word *grima* indicates the specific unpleasant feeling of hearing the rasping sound of chalk on a blackboard, or a fork on a plate. The German word *Angst* seems to span a spectrum of emotional terms in other languages — in English, for example, from 'insecurity', 'worry' and 'anxiety' to 'fear', 'dread' and 'anguish'. Another German word, *Fernweh* (broadly the opposite of homesickness, from *fern*, 'far', and *Weh*, 'ache' or 'sickness'), a painful longing to get away from home to distant places, has no equivalent in English or Swedish at all.

Regardless of the role and significance we attach to language for our cognition, it is clear that the semantic principles in the vocabularies of the world's languages vary enormously. It is hard, maybe impossible, to identify examples of universal meanings that find lexical expression in all the world's languages. Investigating this variation is crucial to our understanding of human conceptualisation. Below, we take a closer look at various aspects of this semantic diversity.

Words and the landscape

So far, we have found that conceptualisation and word meanings can vary greatly among languages, even in relation to phenomena where one might have expected uniformity across languages. To provide some perspective, it may be interesting to look at the vocabulary in conceptual domains, where such uniformity is *not* to be expected. What happens when language has a free rein to express reality in words? It must of course be said that no language, in itself, operates with complete freedom. Every language has its legacy from history, and grammatical and semantic conventions, that determine the properties and development of the language to a large extent. However, what are the vocabularies of different languages like when reality itself is so diverse that it is difficult or impossible to predict how it may be split up and categorised in linguistic terms?

In this context, one exciting domain is our geophysical environment, the 'landscape'. From a human point of view, the landscape has very special properties. It is a fundamental, concrete, large-scale and ubiquitous backdrop for our entire existence — how we live, support ourselves, move around and find our way. It is, and always has been, the constant scene of our actions, thoughts and beliefs. Every person and every society has strategies for representing the landscape in language and

thought. To that extent, it should be one of the most fundamental domains of human cognition — one that is inescapable and of universal relevance.

On the other hand, the characteristics of the landscape vary immensely. It may be mountainous or flat, dry or waterlogged, forested or treeless. Deserts, rainforests, Arctic icescapes, mountain meadows, steppes and savannas, as well as the city- and townscapes that are now inhabited by more than half the world's population — they are all examples of landscape diversity. We are the only species that has successfully colonised all of these geographical and ecological niches. Human language and cognition have therefore been confronted with, and driven to represent, an astonishing range of environments.

It is in this paradoxical combination of universal relevance and maximal variation that our question becomes relevant. We can almost take it for granted that the landscape is clad in words in every language, but what are the semantic principles like in a cross-linguistic perspective? This is a question to which my colleagues and I have paid a lot of attention over the past 15 years and, sure enough, our research shows outstanding variation in how landscape is perceived and conceptualised.¹¹ Let us start with the concept of *landscape* itself. We can use the word to signify the large-scale natural environment surrounding us, a setting that contains various components or features that we see as parts of it, such as forests, meadows, mountains and streams. *Landscape* can thus be regarded as forming an overarching concept that represents a semantic domain.

Given what has been said before, we can hardly expect translating our word *landscape* into other languages to be problem-free.

Sure enough, research shows that many languages lack an overall concept that corresponds to our own — similar to the lack of a word that matches *animal* in Jahai. But even in languages where such a word is distinguishable, even closely related ones that have cognate words, such as the Swedish *landskap* and German *Landschaft*, it is not obvious that the domain can easily be equated across languages. In a recent experimental study, we asked speakers of seven European languages to list what can be included in a landscape (and its equivalents — *landskap*, *Landschaft*, the French *paysage*, and so on).¹² For comparison, we also asked them to list animals and body parts, two long- and well-established semantic domains. The results showed, first and foremost, that although some comparable terms like *mountain*, *berg* and *montagne*, turned up in all seven languages, speakers of the different languages fill their equivalents of ‘landscape’ with partly different things. Swedish and Dutch speakers, for instance, proved much more likely to include words denoting vegetation (*grass*, *trees*) than the others. Speakers of the Romance languages French, Spanish and Italian, on the other hand, were far more inclined to include celestial phenomena (*the sun*, *clouds*, *sky*).

Most noticeable, however, were the differences among the three semantic domains. It was clearly easier for all the participants, regardless of linguistic affiliation, to list animals and body parts than to name parts of the landscape. The list for the latter contained distinctly fewer answers than the others, and yet there were marked individual differences in the responses from the various participants. In a follow-up question, the respondents consistently stated that they found the landscape task the most difficult. This indicates that landscape is a much less self-evident

semantic domain than the others — or at least, one that is considerably more diffuse in content. This is hardly surprising, given the varying nature of the domain. For those of us who study human conceptualisation, this is an exciting result. But does it really have any practical significance? Perhaps. For instance, what are the implications for international treaties and agreements, such as the European Landscape Convention (which regulates various forms of landscape conservation and development in Europe), that ‘landscape’ is a linguistically elusive notion and speakers of European languages assign different elements to a concept that is crucial to the Convention? To date, such conceptual challenges have generally received very little attention in international action programmes that are implemented across linguistic borders.

Landscape shaped by language

Let us now look more closely at the variation in how different languages lexicalise the features of the landscape. One way to do this is by examining whether the words denoting landscape phenomena are compounds or non-compounds. The latter are simple words that cannot be divided into smaller units and may therefore be assumed to be more basic than compounds, whose construction is more complex. A quick look at the landscape terms in English or Swedish suggests that the vocabulary largely consists of single words: *mountain, cliff, hill, river, stream, lake, forest* and so on. Several of these happen, incidentally, to qualify as basic vocabulary according to the standard lists described above, where such meanings as *mountain, river, lake* and *forest* are usually included.

It is worth noting that the words signify classes of more or less well-defined ‘objects’ in the landscape, and that they have their primary meaning in landscape as such. True, one can say things like ‘a mountain of rubbish’ and a ‘forest of opportunities’, but the words are ultimately drawn from features of the large-scale physical environment. These words are, moreover, used in fairly systematic ways, as parts of compounds and phrases denoting more specific landscape features, such as *hillside*, *mountain top*, *river arm* and *broadleaf forest*. We can therefore see that the compound words and phrases express parts or types of the overarching classes represented by the non-compound, basic words. This appears to be a relatively common semantic strategy for ‘landscape’ in the world’s languages, not least in European languages.

However, languages in other parts of the world have other solutions. Several studies of indigenous languages in North and South America demonstrate that they often consistently use compounds to denote *all* landscape phenomena. The principle of these compounds is that a word denoting a substance or material (such as rock, soil and water) is combined with another that denotes a property or position (such as big, high, low, standing, lying and flowing). The Seri language on the Gulf of California, Mexico, illustrates this pattern well.¹³ In Seri, most landscape terms are generated by using one of four basic substance words — *hant* (‘soil’), *hast* (‘stone’), *hax* (‘freshwater’) and *xepe* (‘saltwater’) — combined with an attributive word describing a characteristic. There are thus expressions that can be translated verbatim as ‘standing stone’ (mountain), ‘lying stone’ (mountain ridge), ‘weathering soil’ (ravine), ‘running freshwater’ (stream), ‘big freshwater’ (lake), ‘detached saltwater’

(lagoon) and so on. The substance words do not themselves denote landforms — only the very substances in question — and therefore cannot be analysed as landscape terms. It is only when they are modified by another word that they gain their landscape meanings. On reflection, this principle is fundamentally different from the English or Swedish one. The semantic point of departure is not classes of bounded ‘objects’ in the landscape, but classes of unbounded ‘matter’ that denote such objects only through combination with other words. In lexical terms, the landscape is to some extent secondary in these languages, and here it may therefore be difficult to characterise the landscape as a distinct semantic domain.

Size is a semantic dimension that seems essential for landscape terms in English, Swedish and other European languages. As mentioned above, the basic, non-compound words in English and Swedish refer primarily to landscape features that, from a human point of view, are of substantial size: *hills*, *mountains*, *lakes* and *forests*. For instance, we do not use the same terms to denote very small phenomena that are similar in form or matter to these major landscape features. A puddle or pool is no lake, a boulder or rocky outcrop no mountain. Within the landscape domain itself, size differences are expressed in a fairly systematic way in word pairings: a *mountain* can be contrasted with the smaller *hill*, a *river* with a *brook* or *stream*, a *forest* with a *grove* or *copse* and so on. Both English and Swedish landscape vocabulary therefore seems to be modelled on size as some form of basic semantic core — and this may seem self-evident since, as human beings, we are relatively small in relation to the domain and its parts.

However, the indigenous American languages mentioned above do not seem anywhere near as obsessed with the size of what is named. There, the matter and shape of these phenomena give the impression of being much more fundamental to the semantic construal of the domain. There are other languages where such patterns are even more pronounced, such as the indigenous tongues of Australia. In the Manyjilyjarra language in the Great Sandy Desert, in Western Australia, a large mountain is given the same word as a small rock: *yapu*. Similarly, the same word is used for a large dune and a handful grains of sand (*langa*), a lake and a pool of water (*wirruja*), a broad valley and a small pothole in the road (*takurru*) — and the list can be made much longer. The systematic nature of this lexical pattern clearly shows that it is the material content of features — not their size — that is the semantic starting point in Manyjilyjarra. In this case, we see another example of a language that does not primarily mark off large ‘objects’ in the landscape but, rather, devotes attention to its actual component materials.¹⁴

What is forest?

As a concluding example of semantic diversity in landscape, let us now take a closer look at wooded environments and equivalents to the Swedish word for forest, *skog*. The Swedish Academy Dictionary defines *skog* as ‘(as a rule) a large area entirely or predominantly covered with comparatively dense trees, or tree-shaped or tree-like plants’. This definition alone shows that forest is a surprisingly elusive concept — evasive wording like ‘as a rule’, ‘predominantly’, ‘comparatively’ and ‘tree-like’ speaks for itself. But certain semantic components,

such as the presence of trees, their density and the size of the area so designated, nonetheless seem central to the concept. Most European languages have similar terms and corresponding components in their definitions. More formalised definitions used by forest management programmes are based on the same principles of meaning. The UN Food and Agriculture Organisation (FAO) defines it as 'land spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of more than 10 percent, or trees able to reach these thresholds in situ'. However, there are some differences in formal definitions among countries and regions. Examples are the varying criteria for what counts as a tree, how dense trees should be and how large the area should be to be counted as forest. On the whole, however, there seems to be some form of official consensus on which parameters should be taken into account.

But what can be said about words for wooded areas in a broad cross-linguistic perspective? First of all, we can hardly expect all languages to have words denoting these environments. Languages spoken exclusively in treeless deserts and Arctic areas have no reason to put the phenomenon into words. But there is, of course, no shortage of languages whose speakers are associated, often intimately, with forested areas. In a study a few years ago, we analysed the equivalents of the word 'forest' in six unrelated languages in the tropical parts of South America, Africa and Asia.¹⁵ Although the speakers of all these languages live in close proximity to tropical forest settings, it turned out that those words that appear most reminiscent of the Swedish word *skog* (forest) have very different meanings. On closer inspection, the words in two of the languages — Jahai in Malaysia and Duna

in Papua New Guinea — proved not to denote wooded environments at all; instead, they had a more abstract meaning of ‘outside’ or ‘exterior’. For these communities, the environment surrounding the dwelling is, in principle, always dense rainforest — so ‘the exterior’ is more or less synonymous with ‘forest’ and, accordingly, the word is the natural translation of the term *forest*. But the Jahai and Duna words themselves do not presuppose forest and are also used to refer to treeless environments. The noun reading of the English word *outdoors* (as in *the great outdoors*) is actually a more accurate translation. The meaning of the word itself may therefore not, in fact, seem particularly exotic. However, the point is that in Jahai and Duna, there is no other word for expressing wooded environments and that the speakers’ suggestions for translating from the contact language include a completely different meaning from the one that may initially be taken for granted.

The Aboriginal language Umpila in Cape York in the far north-east of Australia shows a completely different pattern. Unlike Jahai and Duna, there are words here that specifically denote wooded environments, but we nevertheless face with challenges in translating *forest*. What makes Umpila stand out somewhat is that it makes a lexical distinction between, on the one hand, forests composed of trees of a single species (*maalatha*), such as a eucalyptus forest, and, on the other hand, mixed forest (*thungkuyu*) such as a species-rich rainforest. There is no overarching term that covers both types, and thus no direct equivalent of *forest*. It is worth noting that a word like the Swedish *blandskog*, meaning mixed forest — that is, one containing two or more tree species — is a fairly good translation of *thungkuyu*,

but that Swedish seems to lack a word corresponding to *maala-tha*. We may have other, similar word pairings, such as *urskog* ('virgin forest') and *kulturskog* ('plantation'), but these have different meanings. Both these Umpila words essentially refer to untouched or primeval natural forest. It's important to remember that, in Swedish, it does not seem possible to get away from the 'forest' component as a unifying concept.

There are other intriguing examples. In Chontal, an indigenous language spoken in Oaxaca, Mexico, forest environments are referred to as *muña*.¹⁶ However, the same word is used for all wild and overgrown environments, as well as for weeds and waste dumps. What these seemingly disparate meanings seem to have in common is disorder, an environment that is not tended or kept under control by humans. *Muña* is no doubt a useful word, but not one that is easily intelligible across language boundaries. It goes without saying that it may be important to know which *muña* is meant when, for example, forest rangers from outside the area communicate with Chontal speakers.

The landscape has once again proved to be wide open to various semantic strategies in human languages. Here, the variation in how languages categorise the world is especially striking. However, despite the variation, all the domains we have touched on so far are united by the fact that they always seem to be expressible in words. Are there domains that cannot be put into words? Are there any limits at all to human conceptualisation? In the next section, we visit the far-flung fringes of vocabulary.

Verbalising the inexpressible

Are all human impressions and experiences possible to express in language, or are there phenomena that cannot be put into words? The question has a long history in Western philosophy and prevailing knowledge firmly states that some aspects of human perception are not readily expressed in language. Categorisation of sensory impressions has played a prominent role in this discussion, and the sense of smell has been highlighted as a modality with a particularly complicated relationship to language. Of all the five senses, smell has been described as the least developed in humans. Science has long noted the absence of a specific, dedicated vocabulary for odours and that, overall, our human ability to name them is poor.

Early in the 20th century, the German physiologist Hans Henning wrote:

Olfactory abstraction is impossible. We can easily abstract the common shared colour — i.e. white — of jasmine, lily-of-the-valley, camphor and milk, but no man can similarly abstract a common odour by attending to what they have in common and setting aside their differences.¹⁷

It has been argued that naming smells is not ecologically relevant for humans since odour recognition is not deemed to be

focused on identifying and classifying smells. Instead, it has been assumed that odours are processed in a subordinate, subconscious way, by way of implicit associations in specific situations. This view is supported by countless Western observations and studies. Linguists have found that languages like English have no well-developed vocabulary of terms to describe odours.

A comparison with colour words illustrates this well: in Swedish and English alike, we have significant sets of basic, abstract colour terms, such as *white*, *black*, *red*, *yellow* and *green*. These are considered basic because they consist of simple, non-compound words, they have a versatile use for describing various objects and they belong to the everyday vocabulary of speakers of the languages in question. They are abstract because their form and meaning do not relate to specific objects or 'sources'. We say 'yellow' and 'red', not 'banana-coloured' or 'fire-engine-coloured'. No corresponding set of basic, abstract odour terms exists. A few potential candidates, such as the Swedish words *unken* ('musty' or 'stale') and *frän* ('pungent' or 'acid'), may be found, but there is nothing that even comes close to our exhaustive systems of colour terms. Our most common strategy for describing smells by far is, instead, based on specific odour sources — 'the shampoo smells like lemon', 'the wine smells like a barn', 'a floral perfume' and so forth — as if we must always contextualise an odour in relation to something else.

Experimental studies provide further support for this picture. Participants asked to name smells taken out of context (that is, neutrally presented in opaque jars or bottles) use descriptions

based on sources ('cinnamon', 'banana', 'ethanol'). They also provide descriptions that are surprisingly often incorrect, even for everyday aromas they should be familiar with, such as coffee or chocolate. The subjects also take much longer to name odours than stimuli of other types, such as colours or images of objects. And in comparisons of the various participants' answers, we find very poor congruence among the descriptions of odours, compared with how they describe colours, for instance. A single odour stimulus may be described as being like, for example, 'cinnamon', 'chewing gum', 'sweets' and 'Coca-Cola' by different people, while the same people are usually entirely consistent in the description of 'red' for a red colour stimulus. All such findings have been cited as evidence that the sense of smell has no 'direct channel' into language, and that this relationship is an unavoidable aspect of the human condition.¹⁸

Abstract words for smells

As indicated above, the studies are limited mainly to a Western context and we will revisit the Jahai in Malaysia's rainforest to somewhat broaden our perspectives. In 2008, almost exactly ten years, and a number of field trips, after my first visit, I returned to the village of Banun to resume the linguistic documentation of Jahai. In my pack, I had the Brief Smell Identification Test™, a scratch-and-smell test, consisting of strips with 12 odorants, that was originally developed to identify the pathological condition of anosmia (loss of the sense of smell). I took the test into the field at the suggestion of my colleague Asifa Majid, psychologist at the Max Planck Institute for Psycholinguistics, who had just started a project with the aim of exploring categorisation of

perception in a cross-linguistic perspective. Although I had already documented occasional olfactory terms before, this matter had not been in focus and the test would now help me carry out a more systematic, if limited, initial examination of the relationship between language and smell among the Jahai people. I tested ten Jahai speakers individually by scraping the odorant patches one by one and asking the participant to smell and name the scent. The highly diverse odorants used in the test include cinnamon, chocolate, banana, turpentine, petrol and onion. What struck me immediately was that most of the descriptions I was given consisted of single words — *ltpit*, *pɔus*, *cɛs*, *pɔih*, *pɔeɛ* and so on — that I had not come across before. It was also noticeable how quickly and easily the respondents named the odours. Subsequent analysis was to show, moreover, that the subjects' responses were astonishingly consistent.

I spent the following weeks trying to understand the meaning of the ten words that the test generated. In interviews, I asked several of the Jahai to name what it was that might smell *ltpit*, *pɔus*, *cɛs* and so forth, and compiled long lists of different odorant sources associated with the terms. The word *pɔus*, for example, was used to describe the smells of fungus, an abandoned hut, shoe polish, coffee, hornbill plumage and the fur of several rodent species. The word *cɛs* described the scent of smoke, petrol, bat droppings, giant millipedes and paint, as well as the mint-like fragrance of the leaves of a certain species of wild ginger. I also came up with various types of olfactory situations and objects in the environment and asked my Jahai teachers to judge which was the best term suited to describe the smell. I also identified a number of additional odorant terms

that did not appear in the test, and the total number of words ended up at 15.

What these investigations made utterly clear was that the olfactory terms of the Jahai — which, grammatically, may be characterised as verbs denoting states or properties — did not themselves denote odorant sources. None of the words could be derived from any specific object associated with the scent, like *floral*, *fruity*, *earthy*, *woody*, *spicy* or *fishy*. Nor did any have an evaluative meaning, such as *smelly*, *bad* or *disgusting*, although a few of the terms were commonly associated with either pleasant or unpleasant odours. Instead, they were all abstract in meaning and entirely comparable to our own basic colour terms, such as *black*, *red* and *blue*. Interestingly, the number of odour terms identified in Jahai was roughly on par with the number of basic colour words in European languages (and Jahai too, for that matter): around 10 to 15. What was very obvious was that the words could not possibly be translated, even roughly, into Swedish or English. It really felt like discovering a huge conceptual void in my own language and brain. I was in a position to establish that the Jahai language was engaged in something Hans Henning and the Western scientific tradition had claimed was impossible: odour abstraction.

Anthropological studies have previously shown that some societies attach greater cultural importance to the sense of smell than is done in the modern Western context. In the past, it has also been noted that some languages, including several languages in sub-Saharan Africa, have unusually well-developed odour vocabularies.¹⁹ However, the initial Jahai study also showed not only that the olfactory words of this language are

based on systematic abstraction, but also that the speakers consistently use these abstract terms in experiments with olfactory stimuli.²⁰

Asifa Majid and I, inspired by these results, decided to go more deeply in our study. We developed new, larger and more advanced stimuli, including odours that we judged to be familiar to the Jahai. It might be that the smells in the established Western odorant tests were not representative of the scents that the Jahai experience on a daily basis, and that this, in some way, favoured answers in the form of abstract terms. We also tested a larger number of people. We measured the time it took for the participants to answer and how long, in terms of number of words, their answers were. Alongside the odour experiments we did similar trials with colours, to be able to compare with another sensory modality. And to engage other populations for purposes of comparison, we did the very same experiment with American-English speakers in Austin, Texas, and Dutch speakers in Nijmegen, the Netherlands.

The results confirmed our first impression: the Jahai responded almost exclusively with their abstract olfactory terms, consistently with a single word for every stimulus, and after only very brief reflection. The strategy was similar when we tested colour names. The English and Dutch speakers, on the other hand, needed to make an effort to find words to describe the odorants. They hesitated more, and always used sources to describe the smell. Their responses to colour stimuli, on the other hand, were similar to those of the Jahai. It was when we compared the subjects with one another that the most interesting difference emerged. The Jahai showed considerable similarity among

themselves in describing the odours — similarity as close, in fact, as in their descriptions of colours. The English- and Dutch-speaking groups showed a very high degree of agreement in terms of colours but, on the other hand, none at all with smells. We were thus able to verify a crucial difference between the speaker populations in their ability to put olfactory impressions into words.²¹

The consistency of the Jahai's odour naming is especially telling. It shows that the abstract words are based on common, conventionalised notions of the properties of odours, and that olfaction is processed in a highly conscious and communicable way. But why, then, can such a system — one that is highly distinctive and unexpected from a scientific point of view — exist? What requirements must be met for this ability, and this kind of vocabulary, to be developed and maintained in a population of speakers? These are, of course, peculiar questions from the Jahai perspective. We might just as well turn the tables and ask ourselves why some speaker populations have *not* developed a system like theirs.

However, the candidate explanations are essentially the same, regardless of which viewpoint we adopt. Are there, for instance, genetic differences among populations that determine people's ability to perceive overall olfactory qualities — differences that, in turn, can be manifested as more abstract conceptual categories? Or are some locations or environments more odoriferous, or 'scent-saturated', than others and do they thus offer a better breeding ground for highly developed olfactory vocabularies? Tropical environments are sometimes, for example, said to be richly scented and modern urban environments as 'deodorised'.

Or are conditions relating to culture or livelihoods what favour or suppress the emergence of such systems? One might imagine that some subsistence strategies, such as hunting and gathering, entail a greater need for effective communication about smells. Or is it simply that a language as such may have inherent patterns of meaning that structure its vocabulary in a certain direction? Or does it require two or more of these factors combined?

At present, we have no unequivocal answer to the question, but recent research offers intriguing clues. In a follow-up study with linguist Nicole Kruspe, Asifa Majid repeated the experiments with speakers of two other languages in Malaysia — Semaq Beri and Semelai — neighbouring languages that are very closely related to each other and relatively closely related to Jahai.²² Culturally, however, they differ strikingly: Semaq Beri, like Jahai, is spoken by nomadic hunter-gatherers while Semelai is spoken by a sedentary population who subsist on slash-and-burn cultivation and trade. The two languages were shown to have similar systems of abstract olfactory terms that, in many respects, also are similar to that in Jahai.

In the experiments, however, the languages diverged sharply. The Semaq Beri speakers behaved identically to the Jahai — they responded almost exclusively with the abstract words for odours, and the participants' answers tallied closely. Strikingly, though, the Semelai speakers did not make use of their abstract terms; instead, like the English and Dutch speakers, they gave answers describing sources, with wide variation among the various respondents. Thus, closely related languages spoken by similarly related populations in similar tropical environments exhibited entirely different strategies. Here, there were no indications that

there is any simple genetic, linguistic or ecological factor that provides an answer to the question of why certain populations stand out as consistent users of abstract olfactory words in the experiments.

The main difference in this context is cultural, and the fact that Semaq Beri and Jahai have a shared strategy seems to show that the subsistence system, based on nomadic hunting and gathering, has a bearing on the matter. It is tempting to conclude that hunting and gathering as such are activities in which the sense of smell is particularly important and therefore explains the pattern. Perhaps tracking a scent trail is essential during the hunt, and maybe an ability to distinguish edible plants and fungi from poisonous ones, using the sense of smell, is a matter of life and death. However, even if this is true, it does not in itself explain why there are abstract olfactory terms, and why the speakers are in agreement in their assessment of how to name odours. The key, for the vocabulary in question, is not the diligent use of one's nose to perceive smells — what is crucial is that there is a need to *talk* about them. Arguably, communication about odours in conjunction with subsistence activities may well be an essential aspect of the whole matter.

However, the matter is further complicated by the fact that, in this case, the subsistence pattern coincides with several other distinctive sociocultural characteristics of the hunter-gatherers. For instance, they cherish religious notions and cosmologies that differ from those of the settled populations, and divergent systems of ideas about kinship and other social relationships. This regime of ideas is permeated by the perceptual relationship between the human and the supernatural domains, not least

smells. Consequently, there is no shortage of reasons for the hunter-gatherers to talk about smells outside the actual hunting and gathering as well.²³

The Jahai language and its close relatives may have small and marginalised speaker populations, and give an insignificant impression, overshadowed as they are by larger, more thoroughly explored languages. However, the Jahai way of putting odours into words has shown that they have much to teach us about human conceptual ingenuity and versatility. The Jahai terms demonstrate, with all the clarity one could wish for, that under the right circumstances, even the inexpressible can be verbalised. They thus bear witness to not only cross-linguistic diversity in the meaning of words, but also an astonishing variation in the conceptual range of vocabularies.

Wealth of words disappearing

We have seen a few examples above of fairly major, and perhaps surprising, differences in vocabularies and semantic strategies among languages that are relatively familiar to us, such as English, Swedish and German. However, other examples make it crystal-clear that a thorough understanding of our species' capacity for conceptualisation requires us to study humankind in all its linguistic and cultural richness. All the thousands of small and often unstudied languages spoken in various parts of the world make up an abundant and underused source of information. As we have been able to establish, language settings like these frequently offer surprising exceptions to, and systematic deviations from, established wisdom – knowledge that is often narrowly anchored in more familiar linguistic and cultural contexts.

However, this seemingly inexhaustible source of information must not be taken for granted. Linguistic diversity is declining as major languages spread at the expense of smaller ones, and language extinction has accelerated markedly in recent decades. The expansion of national languages, modernisation and globalisation are all resulting in numerous languages being marginalised, losing their significance and gradually falling out of everyday use. It has been estimated that half of the roughly

6,000–7,000 languages spoken in the world today will be extinct by the end of this century. Languages are dying out faster than we can study and describe them. Every language — however small and unfamiliar it may be — contains its own world of unique experiences, knowledge and ideas. We are therefore facing an immense loss of our common human heritage.²⁴

There are certainly more aspects to this loss of knowledge than that of words alone. But the many lexical treasures around the world are a particularly fascinating manifestation of our versatility, ingenuity and adaptability. And although the meaning of foreign words may be elusive, words are some of our most useful tools in our endeavour to seek understanding of what it means to be human.

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Riksbankens Jubileumsfond for the advancement of the Humanities and Social Sciences

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