REGULATIONS ON USE

Stephen C. Levinson and Asifa Majid

This website and the m   aterials h erewith supp lied have been developed by m   embers of the Language and Cognitio n Group of the Max P lanck Institute for Psycholi nguistics (formerly the Cognitive Anthropolog y Research Group). In a nu   mber of cases m aterials were designed in collaboration with staff from other MPI groups.

Proper attribution

Any use of the materials should be acknowledged in publications, presentations and other public materials. Entries have been developed by diffe rent individuals. Please cite au thors as indicated on the webpage and front page of th e pdf entry. Use of associated stimuli should also be cited by acknowledging the field manual entry. Intellectual property rights are hereby asserted.

No redistribution

We urge you not redistribute thes e files yourself; instead point peopl e to the appropriate page on the Field Manual archives site. This is important for the continuing presence of the website. W e will be updating m aterials, correcting errors and adding information over tim e. The most recent versions of materials can always be found on our website.

Be in touch

The m aterials are being released in the spirit   of intellectual co-opera tion. In som e cases the authors of entries have not had the chance to pub   lish r esults yet. I t is e xpected that users will share results garnered   from use of these m   aterials in free in tellectual exch ange before publication. You are encouraged to get in touch with us if you ar e going to use these m aterials for collec ting data. Thes e manuals were orig inally intende d as workin g documents for internal use only. They were supplem   ented by verbal inst ructions and additio nal guidelin es in m any cases.

The contents of m anuals, entries therein and fiel d-kit materials are m odified from time to tim e, and this pro vides an ad ditional m otivation fo r keeping clo se contact with the Language and Cognition Group. W e would welco me suggestions fo r changes and add itions, and comm ents on the viability of different materials and techniques in various field situations.

Contact

Email us via http://fieldmanuals.mpi.nl/contact/

Language and Cognition Group
Max Planck Institute for Psycholinguistics
Postbox310, 6500AH, Nijmegen, The Netherlands

THE LANGUAGE OF TASTE
Gunter Senft, Asifa Majid & Stephen C. Levinson

Project	Categories and concepts across language and cognition
Task	Linguistic elicitation for taste vocabulary using "taste kit"
Goal of task	To investigate how languages encode taste experiences – specifically (1) wheth er there is dedicated voc abulary for encoding taste and (2) how much consistency there is with in a community for describing taste experiences.
Prerequisite	You must have completed "Language of perception" (pp. 10-21). To conduct this task you need – a "taste kit"

Background

The underlying physiology of taste is far better understood than that of sm ell. There are five types of receptor, nam ely for sweet, salt y, sour, bitter and um ami (glutamic acid). In our stim ulus set we are concentrating on thes e basic five taste qualities , but there are a number of other taste categorie s that analysts have recognize d as being important and that languages appear to encode (see Table 1). It is helpful, therefore, to distinguish a "narrow" sense of taste that refers to those qualities that can be perceived through taste receptors in the m outh and a "w ide" sense that includes olfa ctory and tactile com ponents. This wider sense is the common usage. For exam ple, the flavor of vanilla is not tasted until the no se is re leased, dem onstrating the olfactory na ture of the sen sation, while the full taste of mustard, m enthol, and pepper may actually be determined by temperature and pain receptors in the mouth.

Sanskrit	Newârî	Italian (Medieval)	Greek		Luchtmans	Linnaeus
sweet sweet	sweet		sweet		sweet	sweet
salt salt salt			salt		salt	salt
sour sour sour			sour		sour	sour
bitter bitter	bitter		bitter		bitter	bitter
astringent astringent	astringent		astringent		astringent	astringent
pungent			pungent		pungent	pungent
savory						
dry			dry			dry
			vinous		vinous	
f		atty	fatty (oily)			fatty
insipid					insipid	
acrid					acrid	acrid
					alkaline	
					unctuous	
						aqueous
						mucous
						styptic

Table 1: Taste vocabularies (adapted from Myers 1904)

Previous research has focused on the evaluative dimension of basic taste qualities challenging the assumption that taste preferences are a part of our genetic disposition, with sweetness being pleasant, bitter and sour unpleasant and salt pleasant at low concentrations but unpleasant at high concentrations. Indian laborers, unlike Westerners or even Indian medical students, rate sour and bitter tastes to be much more pleasant (Moskowitz, Kumariah, Sharma et al. 1975). Similarly in comparison to Australians, the Japanese rate umami substances to be more pleasant (Prescott, Laing, Bell et al. 1992). These differences can be traced to differences in diet, with Indian laborers consuming high quantities of tamarind (a sour fruit), and Japanese people lots of foods such as seaweed and shitake mushrooms (which contain umami).

Over 100 years ago Myers (1904) described taste terms across a range of different languages. Myers found that the most common way to describe sweetness and saltiness was to use an evaluative term, such as "tastes good". Where a descriptive term was used for salt, it was often derived from sea-water. He also found that salt and sour tended to be confused, and that bitter often did not receive a specific word (see also Chamberlain 1903 for a summary of taste terms in Algonkian languages). These generalizations can be tested in our sample.

Generally, the domain of taste appears to be a good candidate for an ineffable. Experimental studies in the food sciences assume that individuals perceive a large variety of distinct tastes, that they experience them in the same way, but that they lack a vocabulary for expressing them. Different individuals appear to use synonymous adjectives with quite different meanings and different adjectives with the same meaning (e.g. Jenkins 1980, Ishii & O'Mahony 1987).

Research questions
Do all languages distinguish between the basic tastes? What are the general resources for describing tastes? Is there a dedicated vocabulary, and if so what types of distinctions are encoded? How much consistency is there within a speech community for describing taste experiences?

Task
The task is designed to elicit taste vocabulary from speakers using a standardized kit. The primary goal is to establish how people describe de-contexualized tastes and to document the general resources the language has for encoding this domain.

Consultants
Aim to test 12 participants. Please keep a note of participants age (approximate age is fine), gender, and full linguistic background. It may also be useful to note whether your consultant smokes, and if so how many cigarettes/cigars they consume a day.

Stimuli [6]
The Taste Kit consists of:
(1) 4 small white plastic containers with red caps with 10 grams of sucrose (sweet), 7.5 grams of sodium chloride (salty), 0.05 grams of quinine hydrochloride (bitter), 5 grams of

---

citric acid monohydrate (sour), an d a big white plastic contai ner with a re d cap with 20 capsules filled with glutamate (umami).
(2) 4 bottles labeled sweet, sour, bitter, and salty and a black 100 ml content marking.
(3) 4 plastic syringes and 4 adhesive paper labels (sweet, sour, bitter, salty).
(4) 4 white bottles with black caps and 4 adhesive paper labels (sweet, sour, bitter, salty).
(5) 4 spraying devices and 4 pipe ttes that can b e screwed on top of the white bottle s. The spraying device consists of a pump and a device for directing the spray.
(6) 4 small plastic bags with labels sweet, sour, bitter and salty

Procedure
Remember to video~audio-tape your session.

The Kit is used as follows:
(1) Fir st, bo il at lea st h alf a liter of water (500 m l). Use minera l wate r or rain wa ter if possible. The boiled water has to cool down (otherwise it will destroy the bottles).

(2) Unpack the syringes, take the adhesive pa per labels and put them on the syringes. This will ensure that the syringes are not used for different solutions.

(3) Take the syringe labeled "sweet", draw up 100 ml of the boiled but by now cool water and inject about half of the wate r (50 ml) into the bottle that is labeled "sweet". This is the bottle with the black 100 m l m arking. Then take the white plasti c container labeled "sucrose (sweet)" open it and put the conten ts into th e half-filled bottle. Gently sha ke the bottle until the sucrose has dissolved. Take th e s yringe labeled "sweet" again and fill th e bottle with water up to the 100 ml mark. Carefully close this bottle with its lid.

After this repeat this procedure with the syringes and bottles labeled sour, bitter, and salty. **Be careful not to mix up the containers and syringes used – otherwise you have destroyed this experiment.** You have now four 100 m l solutions, one for sweet (10 %), one for sour (5 %), on e for bitter (0. 05 %), and one for salty (7.5 %)and the bag with the capsules filled with glutamate (umami).

Researchers are advised to do this wh en they are in the field just before they start with the data collection. However, experim enters who pr efer to m ake these so lutions before they go to the field should carefully pack the bottles with the solutions and the other parts of the kit.

(4) Before y ou start the taste experiment, carefully open the bo ttles with the so lutions and put on the spraying device. If you think the pipe tte works better in yo ur field situation, then screw on the pipette. Make sure that you store the bottle lids in envelopes or plastic bags that you have marked with the labels "sweet", "sour", "bitter", and "salty". If you use the spraying device, first pump a bit until the device is filled. Then spray the solution onto your consultant's tongue. Make sure that the informant has rinsed his or her m outh with water before you start the experim ent and m ake also sure that s/he has not sm   oked or chewed betelnuts etc. before you start with your session. After every solution and after you have put som e of the glutamate for th e "um ami" se nsation on your consultant's tongue, always make sure that s/he rinses her/his mouth with water.

When you apply the solutions, please hold the bottles in such a way that your hand covers the labels so that literate people cannot read the English labels.

You can also de monstrate that the substan ce is not noxious by placing a s mall amount of the solution in your own mouth before trying it on the consultant.

(5) If you interrupt your data collection, carefully close the bottles with the solutions with the lid that was stored in the labeled plastic bag or envelope – and put the spraying device or the pipette in the envelope. Only the car eful separation of the lids and the spraying devices will ensure that the experiment is carried out properly.

HANDLE AND USE THE KIT WITH UTMOST CARE.

Analysis
Each consultants response will be coded fo r word/phrase/constructio n used to describe taste. This will then be analyzed for (1) consistency across consultants and (2) category of response, i.e., are responses (a) evaluative, (b) descriptive, or (c) source-oriented.

Outcome
Data will co ntribute to a description of the grammar of pe rception in the field language, intended for a collected volum e. The pooled cr oss-linguistic data will also contribute to an overview publication on the encoding of the senses across languages.

Optional post-task elicitation
As with s mell, you m ay wish to conduct furthe r elicitation with your consultants. Free-listing may be one good m ethod to use – ask your consultant *What are all the different tastes an object can have*? Or if you have already elicited specific terms you can use them as the basis of the question *Things can taste salty, bitter – how else can things taste?* Another approach is to go th rough different foodstuff and ask *What does X taste like?* What are possible answ ers to this ? *Sweet, smoky, crunchy, lovely.* W hat are the sorts of attributes encoded in such answers? Basic taste? Texture? Olfactory components?

Myers claim ed that taste nam es for salt and sour tend to ge t confused. Could this be because there is a general term for savorines s? Or is this g enuine category confusion? If you have such a collapsing in your la nguage, you may want to conduct f urther investigation on this issue.

References
Chamberlain, A. F. (1903). Prim itive taste-words. *The American Journal of Psychology*, *14*, 146-153.
Ishii, R. & O'Mahony, M. (1987). Taste sort ing and nam ing: Can taste concepts be misrepresented by traditional psychophysical labeling system s? *Chemical Senses*, *12*, 37-51.
Jenkins, L. A. (1980). Finding the comm on underlying continua from individual vocabularies. *Journal of the Science of Food and Agriculture*, *31*, 622.
Moskowitz, H. W., Kumariah, V ., Sharma, K. N., Jacobs, H. L. & Sharm a, S. D. (1975). Cross-cultural differences in simple taste preferences. *Science*, *190*, 1217-1218.
Myers, C. S. (1904). The taste-names of prim itive peoples. *British Journal of Psychology*, *1*, 117-126.
Prescott, J., Laing, D., Bell, G., Yoshida, M., Gillm ore, R., Allen, S., Ya mazaki, K., & Ishii, R. (1992). Hedonic responses to ta ste solutions: A cross-cultural study of Japanese and Australians. *Chemical Senses*, *17*, 801-809.