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CHAPTER 7

Clear is sweet

Defining aesthetic *sake* taste terms with a usage-based approach

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Taste terms such as *soft* for wine often have a special meaning that differs from their general definition. This chapter proposes a way to define terms of Japanese *sake* taste by employing (1) a usage-based approach, (2) “encyclopedic semantics” rather than a “dictionary view,” and (3) sense-making theory (Fukaya & Tanaka, 1996; Tanaka & Fukaya, 1998), drawing on data from a “*sake* tasting description corpus.” Sixteen high-frequency adjectivals (e.g., *yawarakai* ‘soft’) are selected and their sense(s) defined in a bottom-up and abductive fashion based on scores indicating the strength of co-occurrence between terms. The suggestion is that the target terms can have a sense related to taste, flavor, texture, time flow, etc. not normally provided by an ordinary dictionary.

Keywords: sense-making theory, encyclopedic semantics, taste, flavor, corpus, Japanese

1. Introduction

Taste terms have attracted a great deal of scholarly attention, especially with respect to English wine taste (e.g., Caballero, 2007, 2017; Lehrer, 1978, 2009; Lopez-Arroyo & Roberts, 2014; Paradis & Eeg-Olofsson, 2013, among others). Japanese scholars have produced some linguistic studies on *sake* taste terms (e.g., Matsuura, 1992; Otsuka, 2004; Utsunomiya, 2006; Otsuka, Suwa & Yamaguchi, 2015), but the investigation is in its infancy, largely because of the historical context of the *sake* brewing industry.

Sake (Japanese *sake*, also spelled *saké*) is a fermented alcoholic beverage made from rice and is commonly referred to as Japanese rice wine. *Sake* is a fermented food product like soy sauce, miso, and *katsuobushi* ‘dried bonito’, standard seasonings for Japanese foods. Premium *sake* uses special rice called *sakamai* ‘*sake* rice’

that is especially suitable for brewing premium *sake* (Gauntner, 2011). Just as there are various types of wine, there are various types of *sake*. Red wine can be roughly divided into three categories: full-bodied, medium-bodied, and light-bodied. For white wine, the gradation from sweet to dry is generally used. In the case of Japanese *sake*, sweet types (*amakuchi*) and dry types (*karakuchi*) are the most common. Light, pale types (*tanrei*), and full, rich types (*nōjun*) are also available. In the 1980s and 1990s, pale and dry (*tanrei-karakuchi*) types of *sake* were popular (and remain so). However, around 2000, there was a boom in *ginjō-shu* (premium *sake* made from highly polished rice using a special technique). *Ginjō-shu* has a floral and fruity flavor.

The basic taste terms for *sake* are (1) umamiful acidity, (2) bitterness, and (3) astringency:

- (1) Jōhin-na san-mi ga shita o arai...
'Elegant acidity washes the tongue...'
for 'Hakurakusei Premium-Junmai' (SSI, 2010)
- (2) Jukuseikan no naka, nigami sanmi ga kōgo ni kao o nozokase
'In the aging flavor, bitterness and acidity appear alternately'
for 'Hanano Tsuyu, Junmai-Ginjo' (Matsuzaki, 1995)
- (3) Fukunda sai ni sanmi to shibumi ga kurosu suru
'When I put *sake* in the mouth, acidity and stringency crosses'
for 'Kagami yama, limited Ginjo' (Matsuzaki, 1995)

As the flavors of *sake* have expanded, more expressions have been required. However, the study of the development of verbal expressions for *sake* has generally been neglected. Technical terms for brewing and descriptive terms used to indicate some of the off-flavors of a *sake* are emphasized, leaving terms to describe appealing flavors unstudied. In response, Fukushima (2013) compiled a small encyclopedia, listing *sake* taste words. Considered epoch-making in the *sake* industry,¹ this work has inspired other work, leading to the development of a method for defining taste terms.

This chapter advances this line of research by examining the technical details of how to define taste terms, drawing on insights from Cognitive Linguistics (Langacker, 2008) and the theory of sense-making (Fukaya & Tanaka, 1996; Tanaka & Fukaya, 1998), a theory in phenomenology of communication. First, I propose a new model of expressing *sake* taste that relies on a subjective construal which I call an "emergence-motivated event construction." Then, I apply it to a "sake tasting comment corpus" (Sake Corpus) consisting of approximately 120,000 words, containing texts compatible with the "emergence-motivated event

1. In 2014, this work received the Good Design Award in Japan.

construction.” Specifically, I propose a method to define *sake* taste terms based on the co-occurrence patterns between the target term and the other terms in the construction, defining 16 adjectivals (a combined group of adjectives and adjectival nouns),² such as *karui* ‘light’ and *marui* ‘round’, considered “aesthetic” in the sense of Sibley (1959). This method allows me to offer a richer analysis of taste terms, covering both off-flavors and appealing flavors.

The remainder of the chapter is organized as follows: Section 2 introduces the theoretical notions upon which the chapter draws and explains the epistemological stance taken to describe the taste; Section 3 describes the method; Section 4 contains an analysis of 16 taste terms; Section 5 offers a discussion, followed by concluding remarks in Section 6.

2. Theoretical background

2.1 Sense-making theory and epistemological background: How is taste as an event constructed in the mouth?

To define the aesthetic *sake* taste terms, I draw on “sense-making theory” (Fukaya & Tanaka, 1996; Tanaka & Fukaya, 1998), arguing that the meaning of a word is determined through various levels of interaction. The interaction includes the relationships among words (i.e., co-occurrence), between words and sentence or context, and even between humans (i.e., communication level). Fukaya and Tanaka claim the sense of a single word cannot be determined *a priori*; rather, the sense is cooperatively “made” during the communication process. The chapter concurs with sense-making theory on this dynamic aspect of word sense.

I propose to define *sake* taste by focusing on adjectivals as an alternative to a dominantly used method focusing on nouns. I call this latter way of verbalization an “object-motivated event construction,” where the experiencer primarily uses nouns to describe the event of tasting. This is commonly found in English tasting comments by wine sommeliers, as in, “I realize a note of black cherry, cassis, and the rich flavor of the oak,” where the sommelier detects the elements of the flavor and verbalizes them, perhaps selecting the terms from his or her list of tasting words.

This is analogous to “audio” or “visual event construction,” where an event is reported objectively. For instance, if an individual witnesses a traffic accident, he or she might construct the event as follows:

2. Japanese adjectives end in /i/, as in *yawarakai aji* (soft taste), whereas adjectival nouns require /na/ (a derived form of copular) to be placed at the prenominal position, as in *odayaka na aji* (calm taste).

(4) “there are two cars” → “two cars collide”

The example in (4) is illustrative of “object-motivated event construction,” where the focus is placed on identifying the event participants (i.e., cars), in the same manner as the sommelier identifies the flavors.

An alternative way of reporting the same scene is shown in (5). I call this “emergence-motivated event construction.”

(5) “something happened!” → “something crashed!” → “Oh, two cars crashed.”

This sequence might be thought of as merely a playful flipping of things. However, the portrayal of the scenes in (4) and (5) is epistemologically distinct. Object-motivated event construction (4) and emergence-motivated event construction (5) take opposite approaches. If language interacts with cognition, or if language forms our thoughts, then having the correct cognition theory is indispensable to proper language analysis.

In what follows, I adopt emergence-motivated event construction to define *sake* taste. Modeling (5), the sequence of cognizing tasting experience can be presented as in (6):

(6) “taste emerges” → “I wonder what this taste is.” → “I can taste X and Y.”

The proposed analysis of the event construction of tasting is not the same as that of the visual event construction. When we taste something – that is, when we have an event construction of tasting or when we conceptualize what we taste in our mouths – what we realize first is not the element of taste, such as sweetness, acidity, apple flavor, or other flavors in *sake* (as expressed by nouns), but the emergence of the tasting event itself.

Supporting emergence-motivated event construction means that adjectives, adjectival nouns, and verbs (but not nouns) take the leading role in the tasting description. The recognition of the emergence of an event is primarily expressed by adjectives and adjectival nouns. They are no longer merely modifiers but play a critical role, enabling us to encode the inceptive stage of our tasting experience.

To make the image of this process more concrete, let us consider an example of a dark, haunted house attraction. In that dark space, an experience arises suddenly:

“Something happened!” → “Chilly!” → “Oh, a wet sponge!”

You can see that it is nonsense to take the existence of “myself” and “sponge” as a starting point in this haunted house experience. This model represents a way of cognition that starts from the “experience itself” rather than describing the situation from an “objective,” subject-independent perspective.

The starting point of the gustatory representation construction is the experience itself; that is, how a drink “emerges” on the perception of the subject. Simply put, “emerging” is knowing “something happened!”.

Then, when does the wet sponge (and the subject, “I”), or the two cars in the example of the collision, come out after the “emergence”? After the emergence, the “object” (and the “self”) will stand out by asking reflectively (introspectively) what has happened. To quote Ichikawa (1990, p. 192), the emergence of immediate experience (unmittelbare Erfahrung) (i.e., “Something happened!”) is an event before reflection, but through the reflection (i.e., by thinking about what happened, or what it tastes like) our connection to the world itself is grasped. In this point, the two terms of connection, “object” and “self,” will stand out.

2.2 Usage-based approach

The chapter’s proposed method of defining taste terms has the following characteristics, in harmony with the themes of Cognitive Linguistics:

- the dynamic aspect of word senses
- usage-based
- “encyclopaedic semantics” rather than a “dictionary view”

The meaning of a taste term is often different from the word’s general definition. For example, when *tōmei* ‘clear’ is used to express the taste of Japanese *sake*, it could represent (or modify) the lightness of the body, or its clean sweetness, or a quick fading of the aftertaste. However, ‘light body’, ‘sweetness’, or ‘aftertaste’ would never be listed in the definition of *tōmei* ‘clear’ in general dictionaries. As illustrated in this example, I am emphasizing the dynamic aspect of word senses. The “sense of a word” is not fixed and static as in a dictionary. It varies, depending on the context; it is *made* dynamically in communication. This is the dynamic aspect of a word’s meaning.

To clarify the dynamic sense of a word, I apply a method called the “usage-based approach” (Langacker, 2008). In the usage-based approach, the sense of a word is determined, in a bottom-up way, from the language used. The usage-based approach is wholly compatible with corpus linguistics and other quantitative approaches (Tummers, Heylen, & Geeraerts, 2005). In the lexicon of the domain of taste, Lehrer’s (2009) study on wine terms is a milestone in the development of quantitative techniques and the usage-based approach. Lehrer argues:

Although someone unfamiliar with wine talk may be perplexed, amused, or even irritated by some of the metaphors, people can learn to figure out their meanings via the intralinguistic relationships of words. (Lehrer, 2009, p. 256)

By “the intralinguistic relationships,” Lehrer means the semantic relations of such terms as synonyms, antonyms, association, and hyponyms. For instance, a “feminine” wine can be associated with descriptors such as “*soft*, *perfumed*, and *delicate*” (Lehrer, 2009, p. 256).

I agree with Lehrer’s point that the meaning of words can be understood from “the intralinguistic relationships of words,” but I depart from Lehrer’s intention to cover such relationships as antonyms and synonyms. I propose defining the terms of taste based on the co-occurrence relationships of the terms appearing in a *sake* tasting comment. Stated differently, the meaning of a term is defined based on what words are used with the term and what words are modified by the term in a *sake* tasting comment.

2.3 The terms under investigation: Aesthetic terms

The expressions that appear as taste descriptors include adjectivals that can be characterized as “aesthetic terms” or as representing the “quality of taste,” especially the aesthetic quality of taste.

What is “beauty” as we feel it? Alternatively, how can we appreciate an aesthetic quality? Frank Sibley has proposed a methodology to answer such questions. His method is to interpret aesthetic concepts using words. In “Aesthetic Concepts” (1959), he discusses the kinds of words used when experts appreciate paintings and asks how they put their appreciation into words or explain it to novices who do not understand the focal point of their appreciation.

Sibley calls terms that express aesthetic concepts “aesthetic terms.” An aesthetic term (or an aesthetic expression) is a word requiring *taste* or perceptiveness in order to be applied.³ For example, aesthetic terms include terms such as *unified*, *balanced*, *integrated*, *dynamic*, *vivid*, etc. Note that “blue line” or “straight line” or “good picture” is not an aesthetic term (each of these is a “non-aesthetic term”), because no *taste* or perceptiveness is needed to apply it.

Aesthetic terms can be found in a description of taste, as well as in the explanatory notes of drawings. Aesthetic terms for the sense of taste exist in various parts of speech, including verbs and mimetics (see also Fukushima, 2019), but adjectives and adjectival nouns are dominant. Table 1 shows adjectivals (adjectives and adjectival nouns) that frequently appear in *sake* descriptions (*Sake Corpus*, see Section 3). The aesthetic terms appear in bold text.

Among the adjectivals, some terms are regarded as aesthetic, but others are not. According to Sibley’s (1959) definition, such terms as *nai* ‘not exist’, *amai* ‘sweet’, and

3. “Taste” in this context is an academic term in the domain of philosophy and aesthetics (it does not mean the sense of taste). Rather, “taste” is the ability to make an intellectual judgment of an object’s aesthetic merit.

Table 1. Frequent adjectivals in *Sake* Corpus

N	Adjectives			Adjectival nouns		
	Japanese	English trans.	freq.	Japanese	English trans.	freq.
1	nai	no	329	kirei	clean	140
2	amai	sweet	297	odayaka	calm	134
3	yoi	good	283	sawayaka	fresh	106
4	yawarakai	soft	239	fukuyoka	plump	96
5	karui	light	172	tōmei	clear	96
6	tsuyoi	strong	137	yuruyaka	slow and soft	66
7	katai	hard	103	maroyaka	mellow	62
8	takai	high	98	hanayaka	gorgeous	55
9	karai	dry	95	fukuzatsu	complex	47
10	marui	round	94	sumāto	smart	46
11	usui	thin	94	shāpu	sharp	43
12	futoi	bold	83	kasuka	faint	41
13	koi	dense	74	sumūzu	smooth	38
14	kōbashii	roasted aromatic	73	nōmitsu	dense	37
15	nagai	long	72	furesshū	fresh	35
16	mizumizushii	fresh	71	nameraka	smooth	35
17	yasahii	tender	66	tansei	neat	35
18	wakai	young	57	nobiyaka	easy	34
19	wakawakashii	youthful	55	keikai	jaunty	30
20	chikarazuyoi	powerful	54	sunao	smooth	30

yoi ‘good’ are not aesthetic terms because no *taste* or perceptiveness is needed to call a *sake* ‘sweet’ or ‘good’. Likewise, *takai* ‘high’ is not an aesthetic term; it merely indicates the percentage of alcohol.

Of course, there are some problematic cases. One example is *tsuyoi* ‘strong’. In the general case, *tsuyoi* ‘strong’ is used as the indicator of the alcohol percentage (*tsuyoi* ‘strong’ means a high percentage). However, *tsuyoi* ‘strong’ can be used as an aesthetic term, as in (7).

(7) Aji no oshi wa tsuyoi ga atokire wa yoku...

‘The volume of the taste is strong, but the finishing is clear...’

for ‘*Nishinoseki, Honjōzō*’ (Matsuzaki, 1995)

On the one hand, in this case, *tsuyoi* ‘strong’ may represent an aesthetic quality as it refers to perceptiveness, although in most usages, *tsuyoi* ‘strong’ just describes the degree. On the other hand, a word with a similar meaning, *chikarazuyoi* ‘powerful’, has more expressive meanings than its core meaning, ‘high degree’, as shown in (8).

(8) oku kara oshiage-te kuru yō na chikarazuyoi umami

‘powerful umami pushing up from the back of the mouth’

for ‘*Azuma-ichi, Super Premium Ginjō*’ (Matsuzaki, 1995)

In this chapter, I analyze the meanings of 16 adjectivals. In their description of the taste of *sake*, these words produce more complex meanings than their literal meanings.

- (9) Adjectives:
karui 'light', *katai* 'firm', *marui* 'round', *futoi* 'bold', *yawarakai* 'soft', *kōbashii* 'roasted aromatic', *yasashii* 'tender', and *chikarazuyoi* 'powerful'
- (10) Adjectival nouns:
kirei 'clean', *odayaka* 'calm', *sawayaka* 'fresh', *tōmei* 'clear', *fukuyoka* 'plump', *hanayaka* 'gorgeous', *maroyaka* 'mellow', and *fukuzatsu* 'complex'.

Note that these 16 adjectivals do not constitute the entire list of the aesthetic terms for *Sake* tasting. As we have seen in the example of strong and powerful, whether an adjectival word is an aesthetic term can depend on the context. I have listed 16 terms based on their (high) frequency in the *Sake* tasting corpus. But of course, other words (e.g., slow, balanced, thick, and so on) can be listed as aesthetic terms.

3. Method

3.1 Corpus and text coding (mining) tool

3.1.1 Corpus

For this analysis, I use a *Sake* Corpus, a corpus of Japanese *sake* tasting expressions primarily taken from *sake*-reviewing books and magazines written in Japanese. The *Sake* Corpus also includes tasting comments and expressions provided by six tasters, myself included. Table 2 summarizes the details. Note that the paragraphs refer to the different *sake* brand descriptions. In total, the *Sake* Corpus consists of 120,789 words.

Table 2. Details of the *sake* corpus

	Details
Tokens	120,789
Types	6,018
Type Token Ratio	20.07
Sentences	5,582
Paragraphs (brands of <i>sake</i>)	2,388
Average Frequency	10.50
Standard Deviation	64.55

The *Sake* Corpus draws on data from 11 books and magazines, as well as data from a tasting experiment. At first glance, the number of consulted books may seem limited. However, the books or magazines for *sake* tend to introduce the brewing

method of *sake* brands, not the taste or flavor. Thus, eliciting the “tasting comment data” from published material is a difficult task. (11) is a typical example of flavor description in a *sake* magazine. Figure 1 shows an image where such descriptions appear (basic translations are given in the bottom part of the image).

(11) a. Kajitsukei no hanayaka-na kaori to,
‘Fruity, elegant flavor and’
b. pukkuri-to-shita umami ga kōchū de fukurami,
‘pulump-umami swells in the mouth,’
c. taoyaka ni nagare-te iku. Hōrei na *sake* o jikkan.
‘then it calmly flows. (I) realized the rich, splendid taste.



Figure 1. A standard style of tasting comment description in Japanese *sake* books and magazines.⁴

Note. [1] Brand name, [2] Brewery info, [3] Introduction of the brewery and flavor descriptions, [4] Sake rice, [5] Rice-polishing ratio, [6] Alcohol content, [7] Yeast, [8] Price, [9] Seasons on the market, [10] How to buy, [11] Flavor: Apple-type / Banana-type / other types, [12] Taste: Fresh type- Rich type, [13] Gas: Yes / No / slightly, [14] Recommended temperature range: Chilled – room – hot

3.1.2 Coding tool

As a text-mining tool, I used KH Coder (Higuchi, 2004) for the entire process of corpus analysis (i.e., word extraction with ChaSen, PoS tagging, listing word frequency, making KWIC concordance, and drawing word networks).⁵

4. Captured from *Sake Competition 2019*. Copyright (2019) by Pia Corporation. Adapted with permission.

5. KH Coder is free software for quantitative content analysis or text mining. It is also used for computational linguistics and can be used to analyze Catalan, Chinese (simplified), Dutch, English, French, German, Italian, Japanese, Korean, Portuguese, Russian, Slovenian, and Spanish text (“KH Coder Index Page,” 22-09-2019).

3.2 How to define adjectives and adjectival nouns

3.2.1 Calculation of the co-occurrence score with KWIC

Using KWIC, we can calculate the “score” for determining what words most frequently co-occur with the target term. The calculated “score” is used to indicate the strength of co-occurrence relationships. For a detailed explanation of KWIC, see Appendix 1; the protocol for calculating a score is shown in Appendix 2.

In this analysis, I considered the words with a score of over 1.000 in defining the target term (i.e., approximately the top 30 words in the concordance list). As an example, Table 3 (excerpt from Table 4) shows the words that co-occur with the term *yawarakai* ‘soft’. From left to right, the columns in the table give the (1 through 21) ranking of the score (N) of the co-occurring words, the co-occurring words (Word), the English translation of the co-occurring words (Eng. Trans.), pronunciation of the co-occurring words (Pron.), the part of speech (PoS) of the words, the total number of co-occurrences (Total), the number of occurrences to the left of the target term (LT), the number of occurrences to the right side of the target term (RT), and the scores.

Table 3. Concordance list for *yawarakai* ‘soft’ (excerpt from Table 4)

N	Word	Pron.	Eng. Trans.	PoS	Total	LT	RT	Score
1	甘み	amami	sweetness	noun	10	4	6	5.617
2	口当たり	kuchiatari	mouthfeel	noun	5	2	3	2.95
3	舌	shita	tongue	noun	7	2	5	2.767
4	舌先	shitasaki	tip of tongue	noun	7	4	3	2.733
5	甘味	amami	sweetness	noun	4	1	3	2.7
6	甘い	amai	sweet	adj.	4	2	2	2.667
7	丸い	marui	round	adj.	4	1	3	2.583
10	酸味	sanmi	acidity	noun	6	3	3	2.35
12	口腔	kōkū	oral cavity	noun	5	1	4	2.233
13	酸っぱい	suppai	sour	adj.	3	1	2	2
15	香り	kaori	flavor	noun	3	1	2	1.833
16	辛味	karami	dryness	noun	3	0	3	1.833
20	包む	tsutsumu	wrap	verb	2	1	1	1.333
21	優しい	yasashii	tender	adj.	2	1	1	1.333

Table 3 shows that *yawarakai* ‘soft’ co-occurs with several different types of words, including words for flavor (*kaori* ‘flavor’ [15]), taste (*amami* ‘sweetness’ [1] [5] [6], *sanmi* ‘acidity’ [10], *suppai* ‘sour’ [13], *karami* ‘dryness’ [16]), parts of the mouth (*shita* ‘tongue’ [3] [4], *kōkū* ‘oral cavity’ [12]), and organoleptic feel (*kuchiatari* ‘mouthfeel’ [2], *marui* ‘round’ [7], *tsutsumu* ‘wrap’).

These semantic categories are important to the model of “emergence-motivated event construction,” introduced in Section 2.1. In this model, the taste (of a cup of *sake*) is described as a personal experience. The emergence of the taste is experienced in the mouth cavity of the taster, and the experience of the taste unfolds in time and space in his or her mouth. If a taster wants to describe the personal story, the words for time and space, namely, the words for describing the timeline of the changing process of the taste and the words for pointing out the spot (where the taste is felt), are indispensable.

In this chapter, I shed light on the “story of the taste.” To describe the story of taste is to tell the personal experience, including organoleptic feelings, texture, structure, and movements of the taste. These feelings are never objectively measured with taste sensor machines.

3.2.2 Defining the target terms

The terms to be used to define the target term are selected from the list of the top words in the concordance. This task relies on the knowledge and skill of the individual producing the definition. If the person knows very little about *sake* or lacks tasting skill or does not understand the meaning of the words in the list, he or she will clearly be unable to define the target term properly. Moreover, a different person is likely to define the same term differently.⁶

Although the method is not fixed or rigidly defined, I set the following tags (in square brackets and bold text) as the point to be defined.

[Flavor] or [Taste]: [Flavor] or [Taste] terms describe which the target term tends to modify, taste, or flavor (e.g., Words for [Taste] include: taste, sweetness, bitterness, acidity, etc.; Words for [Flavor] include: flavor, scent, floral, fruity flavor, etc.).

[Dominance]: [Dominance] describes which tastes among the basic tastes (i.e., sweetness, acidity, umami, bitterness, astringency, and dryness) are more likely to co-occur with the target term.⁷

[Structure]: [Structure] terms include words for the structure or physical texture of the *sake* (e.g., *bodi* ‘body’, *waku* / *wakugumi* / *kokkaku* ‘frame’, *rinkaku* ‘contour’,

6. This type of subjective approach may be avoided in some research fields such as experimental psychology and cognitive science. However, the sense of taste itself is firmly in the subjective domain. It cannot be shared directly with another person, nor can it be represented by sensor information from a “tasting machine,” as the sense of taste cannot be reduced to the sum of its component elements.

7. Astringency and dryness are not basic tastes in an anatomical context (they are algesthesia), but in this chapter, I regard them as “basic tastes.” Note that a salty taste will almost never be noted in the taste of *sake*.

katamari ‘lump’, *futoi* ‘bold’). Examples of the usage of the [Structure] terms include instantiations of a “conceptual metaphor” (Lakoff & Johnson, 1980), “TASTE IS BUILDING” or “TASTE IS BODY.”

An example of the two conceptual metaphors is given in (12), where *kokkaku* literally means the skeleton structure.

(12) kokkaku ga shikkari-shita, futoi umami
(I feel) the firm-framed, bold umami’

The first part of the phrase *kokkaku ga shikari-shita* ‘firmly framed, or firm physique’ involves the equation of “building” or “human body” with “taste,” where the elements of “taste” are conceptualized as corresponding to (or “mapped onto”) those of “building.” Stated differently, the taste is conceptualized as having a frame, just like a building or human body has a frame, and the stability of the “frame” of the taste is expressed by *shikari-shita* ‘firm’. The conceptual metaphor takes over in the latter part of (12), where the elements of “taste” are conceptualized as corresponding to those of the “human body.” Because of this correspondence, the taste term *umami* can accompany a modifier *futoi* ‘(lit.) fat’ (See Sakaguchi, this volume, for the opposite direction of metaphorical mapping: i.e., to use taste terms such as *amai* ‘sweet’ to express a concept in other domains such as emotion).

[Organoleptic Feelings]: [Organoleptic Feelings] terms include terms on [Texture]: The majority of [Organoleptic Feelings] are words for [Texture] or mouthfeels (e.g., *kanshoku* ‘feeling’, *tacchi* ‘touch’, *sofuto* ‘soft’, *kurimī* ‘creamy’). Words like *marui* ‘round’, *tsutsumu* ‘wrapping’, *naderu* ‘stroking’, and other words for stimulus are not tagged as [Texture], but as [Organoleptic Feelings]. For [Organoleptic Feelings], mimetics are often used (e.g., *zara-zara* ‘rough texture’, *suru-suru* ‘smooth’).⁸

[Parts of the mouth]: [Parts of the mouth] terms refer to the words for the parts of mouth used to indicate the point or the place where the taste or flavor is felt (e.g., *kuchi* ‘mouth’, *oku* ‘back (of the mouth)’, *hanasaki* ‘nose tip’, *shita* ‘tongue’). These words can be found in expressions like the one in (13), an instance of *shitasaki* ‘tip of the tongue’.

(13) Shitasaki de amami o kanjiru
(I feel) sweetness on the tip of the tongue’

8. Note that mimetics (also known as ‘ideophones’) depict broad sensory imagery that involve auditory, visual, tactile, or other types of perception (cf. Dingemanse, 2011, 2012).

[Timeline]: [Timeline] terms describe the timeline of the tasting experience, from beginning to end (i.e., in my “emergence-motivated event construction” model, from the emergence of the taste to its disappearance). In the tasting comment, describing the way the taste or flavor appears and disappears is very important. The words for appearance are, for example, *saisho* ‘beginning’, *arawareru* ‘appear’, *tatsu* ‘stand’ (cf. Section 4.2.6), and *hanasaki* ‘tip of the nose’. The words for disappearance include *kieru* ‘fade’, *kireru* ‘finish’, *nokoru* ‘remain’, and *atokuchi* ‘aftertaste’. It is notable that some words for the part of the mouth often (indirectly) refer to the point of the timeline (e.g., ‘nose tip’ = ‘the starting point’, or ‘back of the mouth’ = ‘the last point’).

[Movement]: [Movement] terms include verbs modified by adjectivals expressing the movement of the taste. Representative examples include: *fukuramu* ‘swell’, *hirogaru* ‘spread’, *nagare* ‘flow’, *tadayou* ‘drift’, and *osamaru* ‘subside’ (see Yoshinari, this volume, for motion verbs in Japanese wine taste descriptions).

[Characteristic Words]: [Characteristic Words] terms include words that supplement the information of the target terms but are important to feature the characteristics of the taste, such as *sukoshi* ‘a little’.

[Related Words] : If the PoS of the word is the same as the PoS of the target term (i.e., adjectives or adjectival nouns in the concordance list), and if the word has an intralinguistic relationship with the target term, such as synonymy, antonymy, hyponymy, or gradable antonymy (cf. Lehrer, 2009), then the word should be included. For example, if the description includes *yawarakaku marui* ‘soft and round’, and the target term is *yawarakai* ‘soft’, *marui* ‘round’ should be listed as a related word, as it expresses a synonymous meaning as ‘soft’ in the *sake* tasting context.

4. Results

This section reports the results of my analysis of the target aesthetic taste terms (shown in italics as in *yawarakai* ‘soft’), applying the method described in Section 3. Each subsection starts with a table showing a concordance list containing the top 20 words that co-occur with the target term,⁹ followed by the definitions under the tagged categories such as [Taste] and [Dominance]. Within the descriptions of the definitions, square brackets are used to indicate the rank of the word score (“N” in Table 3), as in *amai* ‘sweet’ [6]. Due to space limitations, not all terms are listed in the tables (the full concordance list can be seen on my website),¹⁰ but some are

9. If there is a “tie score” for the 20th word, all words with the same score are listed.

10. <http://www.hiroki.fukushima.jp>

included in the descriptions with the ranks, as in *haneru* ‘spring’ [27], for specificity, although the table may list just up to [20] or so. Wherever appropriate, sentence examples are included. Section 4.1 provides the results for eight adjectives and Section 4.2, the results for eight adjectival nouns.

4.1 Adjectives

4.1.1 *Yawarakai* ‘soft’

Table 4. Concordance list for *yawarakai* ‘soft’

N	Word	Pron.	Eng. Trans.	PoS	Total	LT	RT	Score
1	甘み	amami	sweetness	noun	10	4	6	5.617
2	口当たり	kuchiatari	mouthfeel	noun	5	2	3	2.95
3	舌	shita	tongue	noun	7	2	5	2.767
4	舌先	shitasaki	tip of tongue	noun	7	4	3	2.733
5	甘味	amami	sweetness	noun	4	1	3	2.7
6	甘い	amai	sweet	adj.	4	2	2	2.667
7	丸い	marui	round	adj.	4	1	3	2.583
8	一瞬	ishshun	momentary	adv.	3	3	0	2.5
9	感じる	kanjiru	feel	verb	5	2	3	2.5
10	酸味	sanmi	acidity	noun	6	3	3	2.35
11	塊	katamari	lump	noun	3	0	3	2.25
12	口腔	kōkū	oral cavity	noun	5	1	4	2.233
13	酸っぱい	suppai	sour	adj.	3	1	2	2
14	入る	hairu	enter	verb	4	2	2	2
15	香り	kaori	scent	noun	3	1	2	1.833
16	辛味	karami	dryness	noun	3	0	3	1.833
17	細い	hosoi	thin	adj.	3	1	2	1.7
18	上品	jōhin	elegance	AN	3	1	2	1.7
19	主張	shuchō	assertion	noun	2	0	2	1.333
20	包む	tsutsumu	wrap	verb	2	1	1	1.333
21	優しい	yasashii	tender	adj.	2	1	1	1.333

Note:

“AN” stands for “adjectival noun.”

As Table 4 shows, *yawarakai* ‘soft’ co-occurs with a variety of taste terms (e.g., *yawarakai amami* ‘soft sweetness’), flavor terms (e.g., *yawarakai kaori* ‘soft flavor’), or words that express an aesthetic sense (e.g., *yawarakaku jōhin* ‘soft and elegant’). (13) provides a sentence example from the corpus.

(13) Kome no yawarakai umami ya amami to kankitsukei no yōna sanmi...
 ‘Soft umami and sweetness of rice, and the citrus-like acidity...’
 for *Tatenokawa, Super premium Ginjo* (Hasegawa, 2015)

Given the co-occurrence pattern, *yawarakai* ‘soft’ can be defined as follows:

[Flavor or Taste] The term *yawarakai* ‘soft’ is used more frequently to describe “taste” than “flavor,” as evidenced by the higher token frequency of the taste terms covering ‘sweetness’ [1, 5, 6] and ‘acidity’ [10, 13] versus one use of *kaori* ‘flavor’ [15].

[Dominance] Among the taste descriptors, sweetness and acidity are the dominant tastes for the feelings of ‘soft’, as indicated by the higher token frequency of the terms expressing ‘sweetness’ [1, 5, 6] and ‘acidity’ [10, 13], versus one use of ‘dryness’ [16].

[Organoleptic feel] *Yawarakai* ‘soft’ describes texture in the entire oral cavity and on the tongue, as indicated by terms such as *kuchiatarī* ‘mouthfeel’ [2] (*kuchiatarī ga yawarakai* ‘it has soft mouthfeel’), *shitasaki* ‘tip of the tongue’ [4], and *kōkū* ‘oral cavity’ [12]. It may represent the mouthfeel as a liquid stream (e.g., *yawarakai seiryū* ‘soft clear stream’ [24]) or as a sense of springing (*yawarakaku haneru* ‘springs up softly’ [27]).

[Related words] *Yawarakai* ‘soft’ is considered to be related to words expressing similar quality, such as *marui* ‘round’ [7] (e.g., *yawarakaku marui* ‘soft and round’), *hosoi* ‘thin’ [17], *jōhin* ‘elegance’, and *yasashii* ‘tender’ [21].

4.1.2 Karui ‘light’

Table 5. Concordance list of *karui* ‘light’

N	Word	Pron.	EngTrans	PoS	Total	LT	RT	Score
1	刺激	shigeki	stimulus	noun	23	1	22	19.933
2	感じる	kanjiru	feel	verb	32	8	24	9.75
3	舌	shita	tongue	noun	32	26	6	9.483
4	痺れ	shibire	numbness	noun	8	0	8	8
5	奥	oku	back	noun	18	15	3	7.567
6	苦味	nigami	bitterness	noun	7	1	6	6.25
7	上顎	uwaago	maxilla	noun	18	14	4	6.217
8	甘み	amami	sweetness	noun	8	1	7	6.2
9	引く	hiku	fade	verb	9	9	0	5.917
10	左右	sayū	right and left	noun	12	11	1	4.917
11	酸味	sanmi	acidity	noun	6	2	4	4.75
12	全体	zentai	full	adv.	10	7	3	4.2
13	香り	kaori	scent	noun	12	9	3	3.65

(continued)

Table 5. (continued)

N	Word	Pron.	EngTrans	PoS	Total	LT	RT	Score
14	印象	inshō	impression	noun	7	4	3	3.5
15	飲む	nomu	drink	verb	7	2	5	3.45
16	痺れる	shibireru	numbness	verb	4	1	3	3.333
17	口中	kōchū	mouth	noun	8	5	3	3.167
18	ピリピリ	piripiri	stimulus	onoma	3	0	3	3
19	後口	atokuchi	aftertaste	noun	5	2	3	3
20	その後	sonoato	later	adv.	11	8	3	2.967

[Organoleptic Feelings] *Karui* ‘light’ represents a lesser degree of sensations. It can describe ‘alcohol’ (*arukōru* [41]), ‘stimulus’ (*shigeki* / *piripiri* [1, 18]), and numbness (*shibire* / *shibireru* [4, 16]) to the ‘tongue’ (*shita* [3]), as seen in (14).

(14) Akarui inshō ga hirogari, uwa-ago ni karui shigeki ga hirogaru
 ‘Bright impression expands, and light stimulus spread on the maxilla’
 (comment from tasting experiment data, 2017)

[Taste] Among basic tastes, *karui* ‘light’ represents the degree of ‘stimulus’ (*shigeki* [1]). Here it means the ‘bitterness’ (*nigami* [6]) and ‘acidity’ (*sanmi* [11]) felt on the ‘tongue’ (*shita* [3]). (15) is illustrative of this taste definition.

(15) nōmitsu na tōn no naka de karui sanmi ga akusento ni...
 ‘during the dense tone, the light acidity gives some accent...’
 for ‘Aratama, DEWA33’ (Matsuzaki, 1995)

[Related words] *Karui* ‘light’ is considered related to words such as *sawayaka* ‘refreshing’ [25] and *kirei* ‘fine’ [37]. Note that *karui* ‘light’ is used as a euphemistic expression for thin (*usui* ‘thin’ [43]) or weak *sake*.

4.1.3 Katai ‘firm’

Table 6. Concordance list of *katai* ‘firm’

N	Word	Pron.	Eng Trans.	PoS	Total	LT	RT	Score
1	感じる	kanjiru	feel	verb	10	2	8	3.65
2	香り	kaori	scent	noun	8	3	5	3.55
3	苦味	nigami	bitterness	noun	5	2	3	3.45
4	印象	inshō	impression	noun	5	0	5	3.4
5	少々	shōshō	a little	adv.	4	3	1	3.333
6	触手	shokushu	tentacle	noun	2	0	2	2
7	水	mizu	water	noun	2	0	2	2
8	味	aji	taste	noun	4	2	2	1.95

Table 6. (continued)

N	Word	Pron.	Eng Trans.	PoS	Total	LT	RT	Score
9	少し	sukoshi	a little	adv.	5	3	2	1.65
10	刺激	shigeki	stimulus	noun	3	1	2	1.583
11	鼻腔	bikū	nasal cavity	noun	4	2	2	1.583
12	舌	shita	tongue	noun	4	2	2	1.367
13	全体	zentai	full	adv.	4	3	1	1.333
14	冷たい	tsumetai	cold	adj.	2	2	0	1.333
15	立つ	tatsu	stand	verb	2	2	0	1.2
16	引き締まる	hikishimaru	tighten	verb	1	0	1	1
17	岩	iwa	rock	noun	1	0	1	1
18	中央	chūō	middle	noun	2	2	0	1
19	透明	tōmei	transparent	AN	1	0	1	1
20	平板	hiraban	flat plate	AN	1	0	1	1
21	螺旋	rasen	spiral	noun	1	0	1	1
22	立方体	rippōtai	cube	noun	1	0	1	1

[Dominance] [Taste] *Katai* ‘firm’ seems to primarily describe the quality of [Taste]. It characteristically co-occurs with *nigami* ‘bitterness’ [3] and *sanmi* ‘acidity’ [23].

[Parts of the mouth] Words expressing the parts of the mouth include: *bikū* ‘nasal cavity’ [11], *shita* ‘tongue’ [12], *zentai* ‘whole’ [13], and *uwaago* ‘maxilla’ [25]. These words indicate the points in the mouth where elements such as ‘bitterness’, ‘acidity’, and other ‘stimuli’ (*shigeki* [10]) emerge. (16) shows one example, with ‘the top of the mouth cavity’ as the focus.

(16) kuchi no ue no hō ni aru ita no yō na katai aji
 ‘board-like firm taste, existing at the top of the mouth cavity’
 (comment from a tasting experiment data, 2017)

[Characteristic words] Other characteristic words are adjectival nouns such as *shōshō* / *sukoshi* ‘a little’ [5, 9]. Basically, *katai* ‘firm’ is not a word to use when speaking well of a *sake*. Thus, adverbs that mitigate the degree are used with *katai* ‘firm’ to modify the tone of the description (giving a less harsh nuance).

To describe “firmness” in more detail, similes such as ‘like a rock’ (*iwa* ‘rock’ [17]) or mimetics (sound symbolic words) such as *gigigi* (scratching sound) [34] or *zara-zara* (rough texture) [35] are used.

[Related words] *Katai* ‘firm’ is considered related to words such as *hikishimaru* ‘tighten’ [16], *tōmei* ‘transparent’ [19], and *heiban* ‘flat plate’ [20].

A few more notes on related words are in order:

- *Tsumetai* ‘cold’ [14] has an important relationship with *katai* ‘firm’. *Sake* that feels too firm at a cold temperature may lose its firmness and soften when warmed.
- *Tōmei na sake* ‘transparent sake’ (cf. [19]) would not mean the color of the *sake*, but would refer to a clear, clean, and light type of *sake* (see also the definition of *tōmei* ‘clear’ in Section 4.2.4). Transparency has the nuance of being ineffectual or simplistic. In general, a pure taste is welcomed for the taste of *sake*, but too much simplicity may mean *katai* ‘firm’ *sake* that will not swell in the mouth and be felt like a ‘flat plate [20]’ in the mouth (note that *heiban* ‘flat plate’ [20] is a metaphor for ‘dead’ in Japanese, indicating flatness or monotony).

4.1.4 Marui ‘round’

Table 7. Concordance list for *marui* ‘round’

N	Word	Pron.	EngTrans	PoS	Total	LT	RT	Score
1	味	aji	taste	noun	13	5	8	6.417
2	甘味	amami	sweetness	noun	7	2	5	4.917
3	甘い	amai	sweet	adj.	5	0	5	4.333
4	広がる	hirogaru	spread	verb	5	1	4	3.583
5	収まる	osamaru	subside	verb	4	1	3	3.5
6	輪郭	rinkaku	contour	noun	4	0	4	3.25
7	残る	nokoru	remain	verb	5	2	3	3.2
8	練れる	nereru	knead	verb	3	0	3	3
9	甘み	amami	sweetness	noun	5	3	2	2.75
10	丸い	marui	round	adj.	4	2	2	2.667
11	柔らかい	yawarakai	soft	adj.	4	3	1	2.583
12	口	kuchi	mouth	noun	5	1	4	2.033
13	ふっくら	fukkura	plump	noun	2	0	2	2
14	厚み	atsumi	thickness	noun	2	0	2	2
15	留まる	tomaru	stay	verb	2	0	2	2
16	舌	shita	tongue	noun	6	3	3	1.867
17	感じる	kanjiru	feel	verb	6	2	4	1.7
18	増す	masu	increase	verb	4	3	1	1.667
19	後口	atokuchi	aftertaste	noun	4	4	0	1.533
20	口先	kuchisaki	lips	noun	2	1	1	1.5

[Dominance] [Taste] As indicated by the higher token frequency of the terms expressing *amai* / *amami* ‘sweetness’ [2, 3, 9], the target term *marui* ‘round’ primarily expresses taste, especially sweet taste: e.g., *marui amami* ‘round sweetness’.

[Structure] *Marui* ‘round’ represents the physical form of *sake* in the mouth: e.g., *kyūtai* ‘sphere’ [31], *katamari* ‘lump’ [30], *rinkaku* ‘contour’ [6], or *atsumi* ‘thickness’ [14].

[Movement] As well as the physical form, *marui* ‘round’ represents the way the *sake* moves: e.g., *hirogaru* ‘spread’ [4], *osamaru* ‘subside’ [5].

[Timeline] Words describing the last part of the mouth are characteristic: e.g., *nokoru* ‘remain’ [7], *todomaru* ‘stay’ [15], *atokuchi* ‘aftertaste’ [19], and *oku* ‘back’ [29]. An example expressing timeline with *nokoru* ‘remain’ is given in (17).

(17) *saigo, marui karami ga shita ni nokoru*

‘finally, round-shaped dryness stays on the tongue’

(comment from a tasting experiment data, 2017)

[Related words] *Marui* ‘round’ is considered related to expressions such as *nereru* ‘matured’ [8], *yawarakai* ‘soft’ [11], and *fukkura fukuyoka* ‘plump’ [13, 28].

4.1.5 Futoi ‘bold’

Table 8. Concordance list for *futoi* ‘bold’

N	Word	Pron.	EngTrans	PoS	Total	LT	RT	Score
1	味	aji	taste	noun	24	15	9	11.867
2	味わい	ajiwai	taste	noun	11	1	10	9.75
3	酸味	sanmi	acidity	noun	11	3	8	7.233
4	練れる	nereru	knead	verb	6	1	5	5.25
5	香り	kaori	scent	noun	11	5	6	5.067
6	力強い	chikarazuyoi	forceful	adj.	5	2	3	3.533
7	旨味	umami	umami	noun	3	0	3	2.333
8	醇味	junmi	rich taste	noun	3	0	3	2.25
9	酒	sake	<i>sake</i>	noun	9	3	6	2.183
10	音色	neiro	tone	noun	2	0	2	2
11	口中	kōchū	in the mouth	noun	6	4	2	1.9
12	流れ	nagare	flow	noun	4	2	2	1.783
13	気流	kiryū	airflow	noun	3	1	2	1.75
14	酸	san	acid	noun	4	2	2	1.65
15	練る	neru	knead	verb	5	2	3	1.583
16	伸びやか	nobiyaka	smooth	AN	2	1	1	1.5
17	濃密	nōmitsu	dense	AN	2	1	1	1.5
18	コク	koku	knock	noun	2	0	2	1.333
19	横たわる	yokotawaru	lie down	verb	2	0	2	1.333
20	強い	tsuyoi	strong	adj.	2	2	0	1.333

Futoi ‘bold’ co-occurs with terms such as *junmi* ‘rich’ [8] and *nōmitsu* ‘dense’ [17], or is used to describe full-body [31] type *sake* with ‘acidity’ (*san* / *sanmi* [3, 14]) and *umami* [7] (e.g., *umami ga futoi* ‘umami is bold (rich)'). This term is especially well-used for *junmai* ‘pure rice’ [21], a kind of rice with rich umami.

[Structure] *Futoi* ‘bold’ is used to note the terms covering structure or “body-build” of *sake*, co-occurring with terms such as *body* ‘body’ [31], *rinkaku* ‘contour’ [23], and *kokkaku* ‘frame’ [37].

[Movement] *Futoi* ‘bold’ co-occurs with the words describing the fluid movement of the *sake*. This is evidenced by the higher token frequency of such words as *nagare* ‘flow’ [12], *kiryū* ‘airflow’ [13], and *nobiyaka* ‘smooth’ [16]. (18) shows an example with *nagare* ‘flow’.

(18) *zentai ni tappuri to shita futoi nagare o miseru*
 ‘on the whole, a full-bold stream is felt’ for *Kinmon-Aizu* (Matsuzaki, 1995)

[Related words] *Futoi* ‘bold’ is considered related to terms such as *chikarazuyoi* ‘forceful’ [6], *nōmitsu* ‘dense’ [17], *tsuyoi* ‘strong’ [20], and *koi* ‘thick’ [35].

4.1.6 Kōbashii ‘roasted aromatic’

Table 9. Concordance list for *kōbashii* ‘roasted aromatic’

N	Word	Pron.	EngTrans	PoS	Total	LT	RT	Score
1	香り	kaori	flavor	noun	13	1	12	11.7
2	風味	fūmi	flavor	noun	9	0	9	8.2
3	甘味	amami	sweetness	noun	16	4	12	6.283
4	甘い	amai	sweet	adj.	6	5	1	5.333
5	ナツツ	nattsu	nuts	noun	11	10	1	3.7
6	タッチ	tacchi	touch	noun	4	0	4	2.75
7	味	aji	taste	noun	3	0	3	2.25
8	酒	sake	sake	noun	7	5	2	2.15
9	ヨーグルト	yōguruto	yogurt	noun	2	0	2	2
10	様	sama/yō	-like	noun	4	3	1	2
11	旨味	umami	umami	noun	3	2	1	1.833
12	感触	kanshoku	feel	noun	3	1	2	1.583
13	アーモンド	āmondo	almond	noun	3	2	1	1.5
14	抜ける	nukeru	go through	verb	5	2	3	1.4
15	ふくよか	fukuyoka	plump	AN	2	1	1	1.25
16	感じる	kanjiru	feel	verb	4	3	1	1.25
17	深み	fukami	depth	noun	2	0	2	1.2
18	果実香	kamika	fruit fragrance	noun	1	0	1	1
19	甘み	amami	sweetness	noun	1	0	1	1
20	甘酸っぱい	amazuppai	sweet and sour	adj.	1	0	1	1
21	香味	kōmi	flavor	noun	1	0	1	1
22	旨い	umai	delicious	adj.	1	1	0	1
23	複雑	fukuzatsu	complex	AN	1	0	1	1
24	余韻	yoin	aftertaste	noun	1	0	1	1

[Dominance] *Kōbashii* ‘roasted aromatic’ is used to describe the total experience in the mouth, both flavor (*kaori* / *fūmi*) and taste (*aji*) [1, 2, 7]: e.g., *jukusei shita kōbashii kaori* ‘aged, roasted-aroma’.

[Texture] *Kōbashii* ‘roasted aromatic’ co-occurs with words expressing texture (*tacchi* ‘touch’ [6], *kanshoku* ‘feel’ [12]), but *kōbashii* ‘roasted aromatic’ itself does not directly modify the texture: e.g., **kōbashii tacchi* (intended: ‘roasted aromatic touch’).

[Taste] As for the basic tastes, *kōbashii* ‘roasted aromatic’ mainly represents sweetness and umami, as indicated by *amai* ‘sweet’ [3], *amami* ‘sweetness’ [4], *amazuppai* ‘sweet and sour’ [20], and *umami* [11, 22].

[Flavor] *Kōbashii* ‘roasted aromatic’ tends to co-occur with concrete words that specify the meaning of fragrance (*nattsu* ‘nuts’ [5], *yōguruto* ‘yogurt’ [9], and *āmondo* ‘almond’ [13]). *Jukusei* ‘aging’ [29] and *kogasu* ‘burn’ [30] are also words specifying fragrance. (19) is illustrative.

(19) Goma o abutta yō na kōbashii kaori ni meron no fūmi ga nozoku
 ‘Flavor like melon peeks out from the roasted sesame-like aroma’
 for *Kunimare Juku* (Matsuzaki, 1995)

[Parts of the mouth] *Hana* ‘nose’ [27] and *nukeru* ‘go through’ [14] suggest fragrance is perceived retro-nasally; “retro-nasal olfaction” refers to the perception of odors emanating from the oral cavity during eating and drinking, as opposed to *orthonasal olfaction*, which occurs during sniffing.

[Related words] *Kōbashii* ‘roasted aromatic’ is considered related to *fukami* ‘depth’ [17], *fukuyoka* ‘plump’ [15] (see also the definition of ‘plump’ in Section 4.2.5), and *fukuzatsu* ‘complex’ [23] (similar but only mildly related).

4.1.7 Yasashii ‘tender’

Table 10. Concordance list of *yasashii* ‘tender’

N	Word	Pron.	EngTrans	PoS	Total	LT	RT	Score
1	甘味	amami	sweetness	noun	12	2	10	10.2
2	舌	shita	tongue	noun	7	5	2	4.333
3	タッチ	tacchi	touch	noun	5	2	3	3.75
4	口あたり	kuchiatari	mouthfeel	noun	5	2	3	3.4
5	きれい	kirei	clean	AN	5	3	2	3.167
6	広がる	hirogaru	spread	verb	5	3	2	3
7	引く	hiku	fade	verb	4	1	3	2.533
8	酒	sake	sake	noun	6	2	4	2.533
9	包み込む	tsutsumikomu	wrap	verb	4	3	1	2.533
10	撫でる	naderu	stroke	verb	3	1	2	2.25

(continued)

Table 10. (continued)

N	Word	Pron.	EngTrans	PoS	Total	LT	RT	Score
11	甘み	amami	sweetness	noun	3	1	2	2.2
12	全体	zentai	full	adv.	5	3	2	2.2
13	包む	tsutsumu	wrap	verb	2	0	2	2
14	感触	kanshoku	feel	noun	3	2	1	1.833
15	柔らかい	yawarakai	soft	adj.	2	1	1	1.333
16	印象	inshō	impression	noun	2	0	2	1.25
17	感じる	kanjiru	feel	verb	4	1	3	1.25
18	可憐	karen	pretty	AN	2	0	2	1.2
19	舌先	shitasaki	tip of tongue	noun	3	2	1	1.2
20	流れ	nagare	flow	noun	4	2	2	1.117

[Taste] *Yasashii* ‘tender’ is exclusively modified by one of the basic taste terms, *amami* ‘sweetness’ [1, 11]. *Sanmi* ‘acidity’ [21] appears on the list, but its rank is rather low. Generally speaking, if *amami* ‘sweetness’ is on a concordance list, *umami* is also expected, because sweetness and umami are both the primary tastes of *sake*. The fact that only sweetness appears on the list means sweetness is characteristically modified by the target term, *yasashii* ‘tender’.

[Organoleptic Feelings] Describing a texture-related word seems to be a significant function of *yasashii* ‘tender’. *Tacchi* ‘touch’ [3], *kuchiatarī* ‘mouthfeel’ [4, 30], and *kanshoku* ‘(haptic) feeling’ [14] are directly related to the texture of *sake* (e.g., *yasashii kanshoku* ‘tender feeling’).

The taste elements are sometimes felt as something moving, and *yasashii* ‘tender’ is used to detail the manner of the movements, expressed by such verbs as *tsutsumu* ‘wrapping’ [9, 13] (e.g., *shita o yasashiku tsutsumu* ‘wrap the tongue tenderly’) or *naderu* ‘stroking’ [10], both of which express the feelings on the tongue. Related to texture, *yasashii* ‘tender’ refers to a weakness of the *shigeki* ‘stimulus’ [31] of the *arukōru* ‘alcohol’ [22].

[Related words] *Yasashii* ‘tender’ is considered related to *kirei* ‘clean’ [5], *yawarakai* ‘soft’ [15], *kurīmī* ‘creamy’ [24], and *jūnan* ‘flexible’ [34]. It may be further noted that *karen* ‘pretty’ [18] and *josei* ‘lady (feminine)’ [35] may be considered synonymous in the context of a *sake* description.

4.1.8 Chikarazuyoi 'powerful'

Table 11. Concordance list of *chikarazuyoi* 'powerful'

N	Word	Pron.	EngTrans	PoS	Total	LT	RT	Score
1	味	aji	taste	noun	5	1	4	4.25
2	押し	oshi	pushing	noun	4	0	4	4
3	切れ	kire	clearing	noun	6	4	2	4
4	感じる	kanjiru	feel	verb	11	4	7	3.617
5	太い	futoi	thick	adj.	5	3	2	3.533
6	切れ味	kireaji	sharpness	noun	5	2	3	3.333
7	押し上げる	oshiageru	push	verb	6	5	1	3.117
8	飲む	nomu	drink	verb	3	1	2	2.2
9	旨味	umami	umami	noun	3	0	3	2.2
10	酸味	sanmi	acidity	noun	3	2	1	1.45
11	辛い	karai	dryness	adj.	3	0	3	1.45
12	全体	zentai	full	adv.	5	2	3	1.317
13	渋味	shibumi	astringency	noun	4	1	3	1.167
14	酒	sake	sake	noun	5	1	4	1.05
15	コク	koku	rich taste	noun	1	0	1	1
16	ボリューム感	boryūmukan	volume	noun	1	0	1	1
17	圧す	assu	press	verb	1	0	1	1
18	応える	kotaeru	respond	verb	2	0	2	1
19	押し味	oshiaji	lasting taste	noun	1	0	1	1
20	甘み	amami	sweetness	noun	1	0	1	1
21	剛直	gōchoku	fortitude	AN	1	0	1	1
22	持つ	motsu	hold	verb	1	1	0	1
23	切り口	kirikuchi	cut	noun	1	0	1	1
24	側面	sokumen	Sides	noun	1	0	1	1
25	張り	hari	tension	noun	1	0	1	1
26	入る	hairu	enter	verb	1	0	1	1
27	抜ける	nukeru	go through	verb	1	1	0	1
28	密度	mitsudo	density	noun	1	0	1	1
29	立ち上がる	tachiagaru	rise	verb	1	0	1	1

[Dominance] *Chikarazuyoi* 'powerful' tends to be used to describe taste [1] rather than flavor [102].

[Taste] Along with *futoi* 'bold', *chikarazuyoi* 'powerful' is used to describe the dense, plump (*boryūmukan* 'volume' [16]) *sake* with *umami* [9], *sanmi* 'acidity' [10], or *shibumi* 'astringency' [13]. (20) gives one of the characteristic usages.

(20) Gut-to semaru sanmi to chikarazuyoi ajiwai ga nihonshu fan ni ureshii
'pressing acidity and the powerful taste are the joy of the *sake* funs'

for *Tabito* (SSI, 2010)

[Timeline] It is interesting that *chikarazuyoi* ‘powerful’ co-occurs with expressions for a clear finish, as indicated by *karai* ‘dryness’ [11], *kire* ‘breaking’ [3], and *kireaji* ‘sharpness’ [6], and with expressions for a long aftertaste, as indicated by *oshi-aji* ‘lasting taste’ [19].

[Related words] *Chikarazuyoi* ‘powerful’ is considered related to *futoi* ‘bold’ [5] and *gōchoku* ‘fortitude’ [21].

4.2 Adjectival nouns

4.2.1 Kirei ‘clean’

Table 12. Concordance list of *kirei* ‘clean’

N	Word	Pron.	EngTrans	PoS	Total	LT	RT	Score
1	味	aji	taste	noun	24	9	15	10.05
2	甘味	amami	sweetness	noun	17	4	13	8.2
3	香り	kaori	scent	noun	14	8	6	6.183
4	酒	sake	sake	noun	16	5	11	5.9
5	果実香	kajitsuka	fruit fragrance	noun	8	4	4	3.75
6	口	kuchi	mouth	noun	10	6	4	3.617
7	流れ	nagare	flow	noun	8	5	3	3.2
8	優しい	yasashii	tender	adj.	5	2	3	3.167
9	引き	hiki	fading	noun	6	3	3	3
10	たなびく	tanabiku	trail	verb	5	4	1	2.95
11	良い	yoi	good	adj.	6	4	2	2.933
12	口あたり	kuchiatari	mouthfeel	noun	6	4	2	2.75
13	広がる	hirogaru	spread	verb	5	1	4	2.75
14	飲む	nomu	drink	verb	7	4	3	2.7
15	少ない	sukunai	less	adj.	4	4	0	2.583
16	旨味	umami	umami	noun	7	0	7	2.533
17	引く	hiku	fade	verb	6	1	5	2.333
18	後口	atokuchi	aftertaste	noun	6	6	0	2.15
19	引き方	hikikata	way of fading	noun	5	4	1	1.783
20	漂う	tadayou	drift	verb	4	4	0	1.783

[Dominance] *Kirei* ‘clean’ co-occurs with both [Taste] and [Flavor].

[Taste] Taste expressions include: *aji* ‘taste’ [1], *amami* ‘sweetness’ [2], *umami* ‘umami’ [16], *sanmi* ‘acidity’ [30], and *shibumi* astringency [34] (e.g., *kirei na shibumi ga kokochi ii* ‘the clean astringency is comfortable’).

[Flavor] Flavor expressions include: *kaori* / *kōmi* ‘flavor’ [3] [29], *kajitsuka* ‘fruity fragrance’ [5], *kōki* ‘aroma’ [26] (e.g., *kirei na kōki ni michiru* ‘clean flavor fills my mouth’), and *fukumiga* ‘first flavor’ [27].

[Movement] *Kirei* ‘clean’ often co-occurs with words expressing a metaphorical motion, in particular, of fluidity and airy movement, such as *nagare* ‘flow’ [7], *tanabiku* ‘trailing’ [10], *hirogaru* ‘spread’ [13], *tadayou* ‘drift’ [20], and *fukuramu* ‘swell’ [21]. One instance of *tanabiku* ‘trailing’ is shown in (21).

(21) honnori tanabiku kireina ringo-ka
 ‘slightly trailing, clean flavor of apple’

for *Ohmon Tojinohana* (Matsuzaki, 1995)

[Timeline] *Kirei* ‘clean’ modifies a smooth and quickly fading sensation (*hiki* / *hiku* / *hikikata* ‘fading’ [9, 17, 19]) at the last point of taste (*atokuchi* ‘after taste’ [18]).

[Texture] As well as modifying taste, *kirei* ‘clean’ modifies texture, as in *kuchiatarī* ‘mouthfeel’ [12] and *tacchi* ‘touch’ [31]. In this case, it represents the smoothness and low stimulation of alcohol; e.g., *kirei na kuchiatarī* ‘clean mouthfeel’.

[Related Words] *Kirei* ‘clean’ is considered related to *yasashii* ‘tender’ [8], *karui* ‘light’ [22], and *kihin* ‘elegant’ [28].

4.2.2 Odayaka ‘calm’

Table 13. Concordance list for *odayaka* ‘calm’

N	Word	Pron.	EngTrans	PoS	Total	LT	RT	Score
1	香り	kaori	flavor	noun	36	29	7	16.233
2	酒	sake	sake	noun	19	13	6	5.9
3	甘み	amami	sweetness	noun	11	3	8	4.533
4	酸味	sanmi	acidity	noun	9	4	5	3.65
5	味	aji	taste	noun	8	0	8	3.45
6	落ち着く	ochitsuku	calm	verb	6	3	3	2.667
7	印象	inshō	impression	noun	7	2	5	2.5
8	果実香	kajitsuka	fruit fragrance	noun	5	0	5	2.5
9	熟成感	jukuseikan	ripening	noun	6	2	4	2.45
10	甘味	amami	sweetness	noun	6	2	4	2.15
11	引く	hiku	fade	verb	4	3	1	2.083
12	共に	tomoni	together	adv.	2	2	0	2
13	口あたり	kuchiatarī	mouthfeel	noun	6	2	4	2
14	香味	kōmi	flavor	noun	4	2	2	2
15	帯びる	obiru	wear	verb	4	2	2	2
16	流れ	nagare	flow	noun	5	0	5	2
17	酸	san	acid	noun	4	2	2	1.667
18	ゆっくり	yuttari	slow	adv.	4	1	3	1.533
19	口	kuchi	mouth	noun	4	1	3	1.5
20	奥	oku	back	noun	6	2	4	1.45

[Dominance] *Odayaka* ‘calm’ can modify almost any domain, as seen in the section on [Taste] and [Flavor].

[Taste] In the taste domain, various kinds of taste co-occur with *odayaka* ‘calm’, such as *aji* ‘taste’ [5], *amami* ‘sweetness’ [3, 10], *sanmi / san* ‘acidity’ [4, 17], *umami* ‘umami’ [33], *shibumi* ‘astringency’ [34], and *karami* ‘dryness’ [35] (e.g., *Odayaka na sanmi to umami* ‘Calm acidity and umami’).

[Flavor] Flavor terms include *kaori / kōmi / kōki* ‘flavor’ [1, 14, 24] and *kajitsuka* ‘fruity fragrance’ [8]. *Odayaka* ‘calm’ can express the overall impression (*insho* ‘impression’ [7], *tōn* ‘tone’ [30]) rather than the detailed flavor.

[Timeline] In addition to denoting tastes and flavors, *odayaka* ‘calm’ denotes the states of the timeline flow (*nagare* ‘flow’ [16]) of the taste, as evidenced by the higher token frequency of the following words: *hiku* ‘fading’ [11], *yuttari* ‘slow’ [18], and *shūshi* ‘whole time’ [26]. It is also used for the overall spatial points (*kuchi* ‘mouth’ [19], *oku* ‘back’ [20], *hanasaki* ‘nose tip’ [38]). (22) gives an example of a case of *shūshi* ‘from start to finish’.

(22) atokuchi ni sanmi ga o o hiku mono no shūshi odayaka na...
 ‘Acidity aftertaste lasts longer, but it’s calm from first to last...’

for *Mansaku no Hana, Nama* (Matsuzaki, 1995)

4.2.3 Sawayaka ‘fresh’

Table 14. Concordance list for *sawayaka* ‘fresh’

N	Word	Pron.	EngTrans	PoS	Total	LT	RT	Score
1	香気	kōki	aroma	noun	20	3	17	8.3
2	香り	kaori	flavor	noun	16	4	12	6.4
3	リンゴ	ringo	apple	noun	17	10	7	5.767
4	酸味	sanmi	acidity	noun	10	2	8	3.833
5	甘み	amami	sweetness	noun	7	0	7	3.25
6	果実香	kajitsuka	fruity fragrance	noun	6	0	6	3
7	メロン	meron	melon	noun	8	6	2	2.65
8	酒	sake	sake	noun	6	5	1	2.533
9	感じる	kanjiru	feel	verb	7	3	4	2.25
10	軽い	karui	light	adj.	3	3	0	2.25
11	口中	kōchū	mouth	noun	7	3	4	2.233
12	広がる	hirogaru	spread	verb	6	3	3	2.233
13	果実	kajitsuka	fruit	noun	6	4	2	1.983
14	思う	omou	think	verb	5	5	0	1.95
15	立つ	tatsu	stand	verb	7	2	5	1.833
16	飲む	nomu	drink	verb	4	1	3	1.7
17	甘味	amami	sweetness	noun	4	0	4	1.7
18	口	kuchi	mouth	noun	6	3	3	1.7
19	大吟醸	daiginjō	daiginjo	noun	4	3	1	1.583
20	梨	nashi	pear	noun	4	1	3	1.5

[Dominance] *Sawayaka* ‘fresh’ describes both flavor [1, 2, 6] and taste [4, 5, 17, 22]. In the context of *sawayaka* ‘fresh’, *sanmi* ‘acidity’ [4] means fruity [6, 13] acidity, as in (23).

(23) Gurēpufurūtsu no yō na sawayaka na sanmi ga tanoshimeru
‘fresh acidity like grapefruit can be enjoyed’

for *Atagonomatsu*, *Hitonatsu no Koi* (Hasegawa, 2015)

[Flavor] Many words describe the kind of fruit: *ringo* ‘apple’ [3], *meron* ‘melon’ [7], *nashi* ‘pear’ [20], *aoringo* ‘green apple’ [37], *ichigo* ‘strawberry’ [46], and *kankitsu* ‘citrus’ [77].

[Characteristic words] As well as names of fruits, the names of other foods are listed: *ramune* ‘ramune-soda’ [32], *minto* ‘mint’ [74], and *yōguruto* ‘yogurt’ [75]. These fruits and foods in the collocation list are typically linked with *sawayaka* ‘fresh’.

[Related words] *Sawayaka* ‘fresh’ is considered related to *ereganto* ‘elegant’ [30], *karui* ‘light’ [10], *wakai* ‘young’ [21], *uiuishii* ‘innocent’ [23], *keikai* ‘nimble’ [27], *syāpu* ‘sharp’ [31], *hosoi* ‘thin’ [35], and *wakawakashii* ‘youthful’ [36].

4.2.4 Tōmei ‘clear’

Table 15. Concordance list of *tōmei* ‘clear’

N	Word	Pron.	EngTrans	PoS	Total	LT	RT	Score
1	味	aji	taste	noun	24	6	18	8.85
2	感じる	kanjiru	feel	verb	16	8	8	5.05
3	甘い	amai	sweet	adj.	6	4	2	3.45
4	甘味	amami	sweetness	noun	5	2	3	2.5
5	甘み	amami	sweetness	noun	7	2	5	2.283
6	清らか	kiyoraka	cleanness	AN	5	4	1	2.2
7	糖	tō	sugar	noun	5	1	4	2.083
8	辛味	karami	dryness	noun	5	2	3	1.95
9	液体	ekitai	liquid	noun	4	1	3	1.75
10	清流	seiryū	clear stream	noun	4	1	3	1.75
11	酒	sake	sake	noun	5	4	1	1.7
12	サステイン	sasutein	sustain	noun	3	2	1	1.5
13	消える	kieru	disappear	verb	4	4	0	1.4
14	薄い	usui	thin	adj.	3	2	1	1.333
15	否や	inaya	soon	noun	2	2	0	1.333
16	まとまり	matomari	unit	noun	3	1	2	1.25
17	少し	sukoshi	a little	adv	2	1	1	1.25
18	あっさり	assari	simple	adv.	3	2	1	1.167
19	広がる	hirogaru	spread	verb	3	2	1	1.083
20	層	sō	layer	noun	3	1	2	1.033
21	粒子	ryūshi	particle	noun	4	2	2	1.033

Tōmei ‘clear’ in a *sake* description has three usages: (1) as a description of the transparent appearance of the liquid, (2) as a synesthetic expression of the taste of the *sake*, and (3) as a metaphorical expression of cleanliness. Of course, the boundaries of these classifications are often fuzzy.

Tōmei literally means the visual appearance of the liquid of the *sake* in the glass, i.e., ‘transparent’, ‘colorless’, or (liquid being) ‘not cloudy’. In the evaluation of a *sake*, transparency is often emphasized, for transparency indicates good quality and condition. A special small cup called *janome* (meaning ‘double circle’, or literally, ‘snake-eye’) is used to judge the condition of *sake* (see Figure 2). A navy-blue double circle is painted on the bottom of a *janome*. *Sake* tasters check the color (i.e., colorlessness) and transparency of *sake* by setting it against the whiteness of the bottom of the *janome*. They judge its condition by checking the sharpness of the boundary of the double circle. If the boundary contrast is sharp, the *sake* is in sound condition.



Figure 2. *Janome*: A traditional *sake* tasting cup¹¹

[Taste] As a metaphorical expression, *tōmei* ‘clear’ primarily represents the cleanliness (*kiyoraka* [6]) of the sweet taste [3, 4, 5]. The sweetness is often directly called ‘caster (superfine) sugar’ [7] (‘brown sugar’ [37] implies a roasted sweet aroma).

Note that *tōmei* ‘clear’ is often used as a euphemistic expression for a taste which is too light, thin, or faint.

[Characteristic words] The image of *seiryōkan* ‘cooling’ [28] or *seiryū* ‘clear stream’ [14] is included in this category.

[Related Words] *Tōmei* ‘clear’ is considered related to expressions such as *assari* ‘simple’ [18], *karui* ‘light’ [25], and *awai* ‘faint’ [31].

11. Photo: Copyright (2019) by shige hattori / PIXTA. Adapted with permission.

4.2.5 Fukuyoka 'plump'

Table 16. Concordance list for *fukuyoka* 'plump'

N	Word	Pron.	EngTrans	PoS	Total	LT	RT	Score
1	旨味	umami	umami	noun	16	0	16	7.4
2	味	aji	taste	noun	17	2	15	7.183
3	香り	kaori	scent	noun	16	3	13	5.983
4	甘い	amai	sweet	adj.	8	4	4	4.45
5	口あたり	kuchiatari	mouthfeel	noun	8	1	7	3.5
6	やわらかい	yawarakai	soft	adj.	6	4	2	3.1
7	香味	kōmi	flavor	noun	7	3	4	2.75
8	印象	inshō	impression	noun	6	1	5	2.7
9	広がる	hirogaru	spread	verb	5	2	3	2.4
10	厚み	atsumi	thickness	noun	7	2	5	2.283
11	感触	kanshoku	feel	noun	5	1	4	2.2
12	酒	sake	<i>sake</i>	noun	6	4	2	2.067
13	立つ	tatsu	stand	verb	8	5	3	1.8
14	生	nama	raw	noun	5	3	2	1.75
15	甘味	amami	sweetness	noun	4	2	2	1.7
16	思う	omou	think	verb	4	4	0	1.583
17	感じる	kanjiru	feel	verb	5	4	1	1.533
18	広がり	hirogari	spread	noun	5	2	3	1.533
19	味わい	ajiwai	taste	noun	3	0	3	1.5
20	純米	junmai	pure rice	noun	5	5	0	1.417

A scent expressed by *fukuyoka* 'plump' may be associated with a floral scent. However, in the description of *sake* taste, *fukuyoka* 'plump' mainly represents the umamiful [1] taste or flavor of the fermented rice and koji [24]. In this respect, *fukuyoka* 'plump' may be considered a technical term. (24) gives an example.

(24) Omachi naradewa no kome no ajiwai no fukuyoka-sa
'the plumpness of the rice-taste, unique for *Omachi* (a rice variety)'
for *Seikō* (SSI, 2010)

[Texture] *Fukuyoka* 'plump' co-occurs with words expressing texture and structure, as shown in (25). For texture, it mainly describes a texture of softness (*yawarakai* 'soft' [6]), roundness (*marui* 'round' [22]), and mouthfeel [5, 11].

[Structure] For structure, *fukuyoka* represents the swelling and spreading (*hirogari* [18]) or feelings of thickness (*atsumi* [10]) associated with a umamiful taste.

(25) *marumi* ga ari fukuyoka na ajiwai no naka ni mizumizushii san ga...
'(I feel) roundness, and juicy acidity in the plump taste...'
for *Sekai-Ittō*, Kumakusu (Matsuzaki, 1995)

4.2.6 Hanayaka 'gorgeous'

Table 17. Concordance list for *hanayaka* 'gorgeous'

N	Word	Pron.	EngTrans	PoS	Total	LT	RT	Score
1	香り	kaori	scent	noun	22	0	22	9.7
2	香気	kōki	aroma	noun	15	1	14	7.033
3	立つ	tatsu	stand	verb	12	6	6	6.95
5	イチゴ	ichigo	strawberry	noun	6	3	3	1.9
6	印象	inshō	impression	noun	5	2	3	1.75
7	口中	kōchū	mouth	noun	6	3	3	1.65
8	香味	kōmi	flavor	noun	3	0	3	1.5
9	甘み	amami	sweetness	noun	3	1	2	1.25
10	メロン	meron	melon	noun	3	2	1	1.083
12	若々しい	wakawakashii	youthful	adj.	1	1	0	1
13	桃	momo	peach	noun	3	2	1	1
14	インパクト	inpakuto	impact	noun	4	0	4	0.95
15	感じる	kanjiru	feel	verb	3	0	3	0.95
16	とばくち	tobakuchi	beginning	noun	3	3	0	0.833
17	みずみずしい	mizumizushii	juicy	adj.	2	0	2	0.75
18	鼻先	hanasaki	nose tip	noun	2	2	0	0.75
19	ふくらむ	fukuramu	bulge	verb	2	2	0	0.667
20	最初	saisho	first	noun	2	2	0	0.667

[Dominance] *Hanayaka* 'gorgeous' is mainly used for flavor [1, 2, 8] rather than taste (*amami* 'sweetness' [9]).

[Flavor] In the context of a *sake* description, *hanayaka* 'gorgeous' implies the 'sharp' (*shāpu* [24]) and 'fresh' (*furesshu* [25]) flavor of the 'fruit' (*kajitsuka* [28]). There are many names for fruits on the concordance list: *ichigo* 'strawberry' [5], *meron* 'melon' [10], *momo* 'peach' [13], *ringo* 'apple' [26] (e.g., *hanayaka na meron no kaori* 'gorgeous flavor of melon').

[Timeline] The words for indicating time, especially the beginning point of the taste, are characteristic: *tobakuchi* 'beginning' [16], *saisho* 'first' [20]. *Tatsu* [3] (literal translation = stand) means the appearance of the flavor. *Hanasaki* 'tip of the nose' [18] indicates the entrance point of the flavor, that is, the first point of the chronological order of the flavor. An example is given in (26).

(26) Hanasaki ni tatsu ringo no yo na hanayaka de shāpu na kaori
 'around the tip of the nose, apple-like gorgeous and sharp flavor appear'
 for *Wakamidori, Nama* (Matsuzaki, 1995)

[Related words] *Hanayaka* 'gorgeous' is considered related to *shāpu* 'sharp' [24] and *furesshu* 'fresh' [25].

4.2.7 Maroyaka ‘mellow’

Table 18. Concordance list for *maroyaka* ‘mellow’

N	Word	Pron.	EngTrans	PoS	Total	LT	RT	Score
1	旨味	umami	umami	noun	6	0	6	2.833
2	酒	sake	sake	noun	6	5	1	2.833
3	感じる	kanjiru	feel	verb	6	3	3	2.25
4	印象	inshō	impression	noun	4	0	4	1.7
5	甘味	amami	sweetness	noun	4	0	4	1.5
6	風味	fumi	flavor	noun	3	0	3	1.5
7	味わい	ajiwai	taste	noun	3	1	2	1.5
8	酸味	sanmi	acidity	noun	4	1	3	1.45
9	熟成	jukusei	aging	noun	4	4	0	1.417
10	少ない	sukunai	less	adj.	2	2	0	1.333
11	くるりと	kururito	kururi	onomat	2	2	0	1.2
12	甘み	amami	sweetness	noun	4	0	4	1.15
13	そのもの	sonomono	itself	noun	1	0	1	1
14	なんとなく	nantonaku	vaguely	adv.	1	1	0	1
15	もたらす	motarasu	bring	verb	1	1	0	1
16	甘い	amai	sweet	adj.	2	0	2	1
17	口当たり	kuchiatari	mouthfeel	noun	2	2	0	1
18	思う	omou	think	verb	2	1	1	1
19	小さい	chiisai	small	adj.	1	1	0	1
20	流れ	nagare	flow	noun	2	0	2	1

[Dominance] In its literal meaning, *maroyaka* ‘mellow’ is a word for texture [17].

[Taste] When *maroyaka* ‘mellow’ modifies the basic taste, it represents a ‘well-united’ (e.g., *matomaru* [21]) taste with multiple elements, e.g., *umami* [1], *amami* ‘sweetness’ [5, 12, 16], and *sanmi* ‘acidity’ [8]. (27) gives an example with *ketsugō suru* ‘unite’.

(27) *amami to sanmi ga umaku ketsugō shite maroyaka na atokuchi...*
 ‘sweetness and acidity are well-united and mellow aftertaste (lasts)...’
 for *Shokō* (Matsuzaki, 1995)

[Related words] *Maroyaka* ‘mellow’ is considered related to *odayaka* ‘mild’ [30] and *yawarakai* ‘soft’ [32].

4.2.8 Fukuzatsu ‘complex’

Table 19. Concordance list for *fukuzatsu* ‘complex’

N	Word	Pron.	EngTrans	PoS	Total	LT	RT	Score
1	味	aji	taste	noun	15	2	13	7
2	香味	kōmi	flavor	noun	4	0	4	1.7
3	酸味	sanmi	acidity	noun	4	2	2	1.533
4	現われる	arawareru	appear	verb	2	2	0	1.5
5	なんだか	nandaka	somehow	adv.	1	1	0	1
6	含む	fukumu	contains	verb	1	1	0	1
7	香ばしい	kōbashii	fragrant	adj.	1	1	0	1
8	細かい	komakai	fine	adj.	1	1	0	1
9	多面性	tamensei	multifaceted	noun	2	0	2	1
10	感じる	kanjiru	feel	verb	3	1	2	0.917
11	混ざる	mazaru	mix	verb	2	2	0	0.833
12	印象	inshō	impression	noun	3	3	0	0.783
13	旨い	umai	delicious	adj.	2	1	1	0.75
14	苦味	nigami	bitterness	noun	3	2	1	0.733
15	渋味	shibumi	astringency	noun	3	3	0	0.733
16	見る	miru	look	verb	2	2	0	0.7
17	味わい	ajiwai	taste	noun	2	1	1	0.7
18	香り	kaori	scent	noun	2	2	0	0.667
19	少し	sukoshi	a little	adv.	2	0	2	0.667
20	混じる	majiru	mix	verb	2	2	0	0.533

[Dominance] *Fukuzatsu* ‘complex’ co-occurs with both taste [1, 3, 13, 14, 15, 17] and flavor [2, 7, 18, 26], e.g., *fukuzatsu na umami to shibumi* ‘complex umami and astringency’.

[Taste] Terms expressing acidity, bitterness, and astringency often co-occur with the basic taste terms. These tastes may be thought of as the off-flavor. However, a small amount of ‘acidity’ (*sanmi* [3]), ‘bitterness’ (*nigami* [14]), and ‘astringency’ (*shibumi* [15]) can be ‘mixed’ (*mazaru* [11]) to produce a complex taste in an advantageous sense. One example with a few taste terms is given in (28).

(28) *sanmi, nigami ga karan-de fukuzatsu na tenshon o...*
 ‘acidity and bitterness are mixed, and (rise) complexed tension’
 for *Bizen no Sake-hitosuji, Hiden* (Matsuzaki, 1995)

[Related words] Several words to describe the delicacy of the *sake* are found in the list: *komakai* ‘fine’ [8], *sensai* ‘delicate’ [33], and *meikai* ‘with clarity’ [37]. At first sight, these words seem contradictory to a ‘complex’ (*fukuzatsu*) taste. However,

to produce well-mixed [11], ‘interlocked’ (*irikun-da* [35]), multifaceted tastes and flavors, delicacy and fineness are essential. If a complex-taste *sake* loses its delicacy, the taste will have a complicated, cluttered feeling.

4.3 Summary

The chapter gives specialized definitions for 16 adjectives and adjectival nouns, clarifying their peripheral senses. It finds that aesthetic terms (the target terms in this chapter) can have a sense related to taste, flavor, dominance, structure, organoleptic feelings, texture, parts of the mouth, timeline, and movement. Although an ordinary dictionary does not provide these peripheral senses, understanding them is key to building up encyclopedic semantics.

5. Discussion

5.1 Clear is sweet

This chapter proposes a new method to abductively define the sense of aesthetic terms using words co-occurring with the target terms (the terms to be defined, i.e., aesthetic terms). More specifically, I adopt a *usage-based approach* to analyze the meanings of words depending on their domain (object), co-occurrence relationships, cultural backgrounds, or context.

What my corpus-based study shows is that in the domain of *sake* taste terms, the target term can acquire a nuanced meaning when one term frequently co-occurs with another. For example, if the word *tōmei* ‘clear’ has a strong co-occurrence tendency with the word *amami* ‘sweetness’, *tōmei* is expected to obtain the meaning of “sweet taste,” beyond the literal meaning of “clear” or “transparent.” This point is elaborated below in a comparison of the sense of *futoi* ‘bold’ and *tōmei* ‘clear’. I argue there are two steps in these types of sense extensions (see Figure 3).

The Japanese word *futoi* ‘bold’ is a basic adjective, literally meaning “large in diameter or width,” as in *futoi kubi* ‘a thick neck’. It also has a metaphoric usage, *futoi koe* ‘bold voice’. This usage suggests *futoi* is first extended to mean “large in degree”; in the next step, this is applied to the quality of voice to achieve the meaning “low and grave.” If *futoi* is used to describe a taste, *futoi* must first refer to “strong in degree (of something),” assuming the same metaphoric extension takes place. So if we say *futoi umami* ‘(lit.) thick *umami*’, we mean the *umami* taste is strong. If we disregard the frequency, it is possible to describe various degrees of taste, such as *futoi sanmi* ‘bold acidity’ or *futoi shibumi* ‘bold astringency’. These expressions are generally understandable and not very poetic.

Interestingly, when these uses are encountered in the speech community of *sake*, *futoi* obtains the meaning of the word that frequently co-occurs with it. For instance, *futoi* ‘bold’ inherits the sense of *umami* from the entrenched use of *futoi umami* ‘bold umami’ or *tōmei* ‘clear’, the sense of sweetness from the entrenched use of *tōmei na amami* ‘clear sweetness’.

This is not simply speculation but is corroborated by the following examples.

(29) marumi no aru futoi aji
 ‘bold taste with roundness’ For ‘Tenpo-isui, Junmai-Ginjo’ (Matsuzaki, 1995)

(30) zentai ni dossiri to shita futoi aji
 ‘massive and bold taste as a whole’ For ‘Ten-on, Ginjo’ (Matsuzaki, 1995)

These examples are taken from reviews of *sake* in books and magazines. They are not very poetic, and readers can readily grasp their meaning. Notably, *futoi* ‘bold’ does not co-occur with *umami* (*futoi umami* ‘bold umami’) but with *aji* (*futoi aji* ‘bold taste’). Critically, *futoi aji* ‘bold taste’ implies “*umami*,” or to be more precise, “a strong degree of *umami*,” showing that the sense of *umami* in *futoi* cannot be explained if only the first step of the metaphoric extension has been taken.

With some certainty, I can say readers in the *sake* community will agree the use of *futoi* ‘bold’ in (29) and (30) represents the sense of *umami*. Whether the use actually signifies *umami* itself must be verified by interviewing the tasters. Notably, this pattern of sense extension is not limited to *sake*. For example, in wine descriptions, *smooth* expresses that the degree of astringency is mild, whereas *rough* expresses that the astringency is strong. Likewise, *delicate* indicates a (low) degree of astringency, not saltiness or sweetness in wines, although none of the terms literally denotes the sense of “astringency” (cf. Broadbent, 1975/2020). In Cognitive Linguistics, this phenomenon is called conventionalization (or entrenchment in a person); that is, a word conventionally acquires a special meaning in the language use of a speech community (cf. Langacker 1987).

The process of how *futoi* ‘bold’ and *tōmei* ‘clear’ acquire new meanings is summarized in Figure 3.

As shown in Figure 3, the sense extension process has two stages. First a regular metaphor is used. Then, as a certain collocation (e.g., *futoi* ‘bold’ and *umami*, or *tōmei* ‘clear’ and sweetness) is more frequently used by the speech-community, a new shade of meaning “slides” from the word (*umami*; *amami* ‘sweetness’) that co-occurs with it. This becomes conventionalized, yielding a new meaning (*futoi* ‘bold’; *tōmei* ‘sweet’). As it is conventionalized, it becomes jargon.

The important point is that *futoi* ‘bold’ is jargon, and its meaning comes from the word *umami* (umamiful) that co-occurs with it. When the meaning of *futoi* ‘bold’ develops from the literal meaning via a metaphor, the meaning of “strong degree of taste” can be understood even by those unfamiliar with *sake* tasting.

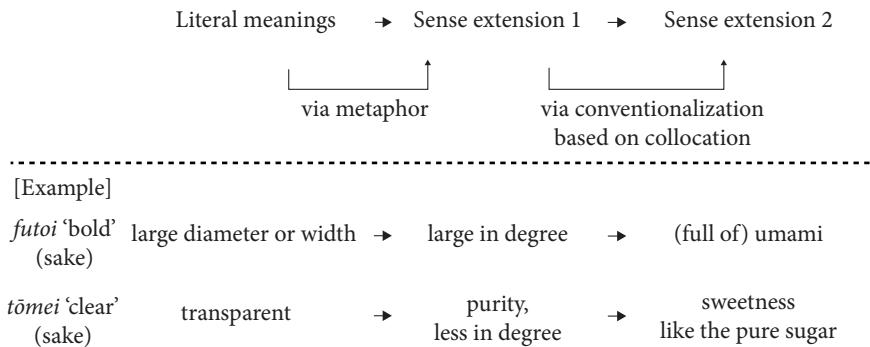


Figure 3. Sense extension when creating jargon

However, the nuance generated by “*umami*” appearing with *futoi* ‘bold’ cannot be understood by those outside the *sake* community, making it community-specific jargon. Similarly, when they use the wine-tasting term *rough*, wine tasters intend “tannic (not alcoholic) taste” and by *sharp wine*, they mean “fresh acidity.” These meanings are jargon and, as such, are only valid in the wine community. Thus, in the context of wine, *futoi* ‘bold’ does not have a meaning of *umami*, although it can have the regular metaphorical sense of ‘strong’ or another specialized meaning in the wine community. In short, *tomei* ‘(literally) clear can mean ‘sweet’ in the *sake* community, but this may not necessarily apply to a coffee community.

5.2 On Lehrer's approach to lexical relationships

This study seeks to grasp the peripheral senses of 16 adjective and adjectival nouns, meanings not likely found in a general dictionary. Relevant words for the target terms can be identified using a concordance list (i.e., words that co-occur with the target term). In general, the relevant words tend to be adjectivals on a concordance list; e.g., *karui* 'light' or *wakai* 'young' for the target term *furesshu* 'fresh' are both adjectives.

Lehrer (2009) points out that among the wine terms, those involving lexical relationships (synonymy, antonymy, class inclusion, and association) play a major role in understanding the meanings of wine vocabulary. I argue that the type of relationship is not especially critical in defining the tasting term. The important thing is that there is **some** relationship. The type of relationship cannot be determined *a priori* by the co-occurrence patterns or general determination. It might be argued that the specific relationship is not in one's knowledge, but can be understood through an experience of drinking a cup of *sake*. For a certain *sake*, *eregantō* 'elegant' may be a synonym of *furesshū* 'fresh', but for another, it may represent the

opposite quality. We cannot determine the type of relationship unless we drink the *sake*, and we cannot tell whether there are any relationships at all in a couple of words without actually drinking. For this reason, I have used only the “relative words” for each target term.

6. Conclusion

In the description of taste, a word often has a unique sense in a specific context; e.g., *fukuyoka* ‘plump’ means ‘umamiful flavor’ in descriptions of *sake*. Applying a usage-based approach, in this chapter, I investigated whether the meaning of adjectives and adjectival nouns can be defined by examining a co-occurrence relationship of the terms that appear in a *sake* description corpus (120,000 words in Japanese). I first calculated the strength of the co-occurrence between the target term (the term to be defined) and the other words in the text. To measure the strength, I computed a concordance “score” using KH Coder, a text mining software package. Then, based on the computed co-occurrence scores, I defined the referent and the sense of the target term in a bottom-up and abductive fashion.

Using this approach, I defined 16 target terms (adjectives and adjectival nouns). Nearly all of the definitions are consistent with my language intuition for the target term in the context of *sake* description, affirming (at least in a subjective way) the validity of the approach. At the same time, the defining process described here depends on my (i.e., the taster’s) language sense and tasting sense. Another individual may well give an alternative definition based on the same concordance list. However, if we accept a sense-making theory (Fukaya & Tanaka, 1996; Tanaka & Fukaya, 1998), such variation in making language sense is natural to human communication. The new approach presented in this chapter can be readily extended to an analysis of other drinks (and food), including wine and coffee, both Japanese and non-Japanese.¹²

Through its analysis of *sake* tasting terms, this chapter supports the idea that the definitions of terms are “encyclopaedic” rather than dictionary-based, a major theme of Cognitive Linguistics. It also corroborates the view that food-related media, such as *sake* tasting comments, function as a valuable source of information, especially in the domain of aesthetics.

12. I have been building corpora of *sake* (in Japanese), wine (JP / EN), chocolate (JP), ramen: also known as ‘Chinese noodle’(JP), and perfumes (EN). These corpora can be shared with other researchers under particular conditions.

The sense of taste has long been neglected by aesthetic studies, and research on “verbalizing the sense of taste” seems to have taken a wrong turn. The tasting words lists created by sommeliers may help us articulate the tacit feelings of the taste, but their “object-motivated event construction” or “nominal way” of describing something (cf. Section 2.1) trivializes our personal experience of taste. To better describe the aesthetic quality (Sibley, 1959) of taste, I argue that we should use the theoretical lens of “emergence-motivated event construction” and study the functions of adjectives (and adjectival nouns). I believe the usage-based, encyclopaedic semantics of the adjectives for taste will open the door to the aesthetics of taste.

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Appendix 1

In order to clarify what words co-occur with the target words (the adjectives and adjectival nouns listed above), KWIC (Key Words in Context), or simply “concordance,” is used. With KWIC, we can analyze how a target word is used in the corpus. In this appendix, an example of KWIC using KH Coder, a text mining application, is shown. Figure AP-1 illustrates the KWIC for the word “flavor” in a wine tasting corpus.

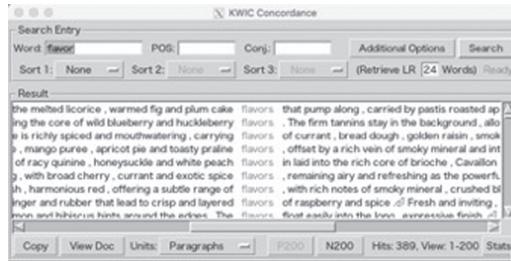


Figure AP-1. Window showing KWIC concordance results¹³

KH Coder is a very useful text mining tool. It provides statistics, multi-dimensional scale (MDS), word networks, and other helpful visuals.

Using the Collocation Stats window in KH Coder (Figure AP-2), it is easy to determine which words frequently appear before and after the target word (or node word). In Figure AP-2, the statistics show that the word “hear” appears thrice in a position two words before (L2) and twice just before (L1) the node word “say.” In addition, we see clearly that words like “Red,” “Shirt,” and “Porcupine” are often used in association with “say.”

(*KH Coder Reference Manual*: Higuchi, 2016, Revised)

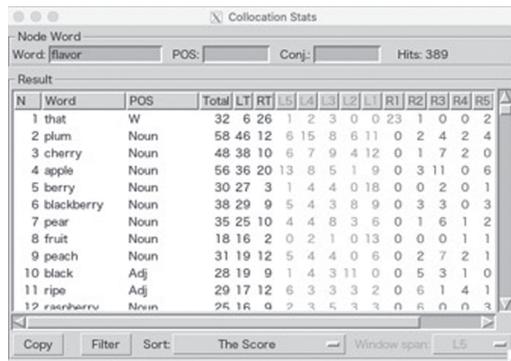


Figure AP-2. Collocation statistics window

13. AP-1 and AP-2 are the screenshots of KH coder, captured by the author.

Appendix 2

Concordance *score* is calculated following. In the function $f(w)$ shown below (from Higuchi, 2016, pp. 39–40), where l_1 is the frequency of a certain word w that appears just before the node word; l_2 is its frequency, two words before the node word; r_1 is its frequency just after the node word; and r_2 is its frequency, two words after the node word.

$$f(w) = \sum_{i=1}^5 \frac{(l_i + r_i)}{i}$$

In general, the greater the frequency that a certain word w appears before or after the node word ($l_i + r_i$), the larger the value $f(w)$. In calculating the value $f(w)$, frequencies ($l_i + r_i$) are divided by “ i ,” which weighs the frequencies according to their distance from the node word. Thus, words that appear nearer to the node word (i.e., with a smaller “ i ”) have greater weight than those that occur five words before or after the node word. In this formula, the frequencies of words that appear just before and after are simply added, since they are divided by unity.