

# Pairing Situation of Soundscape and Flavors from Integrative Medicine (IM) Point Of View

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## Abstract

For Integrative medicine (IM), the authors have continued to practice music therapy and manage the Integrative Medicine Japan (IMJ), Shikoku Island Division for years. This article describes the pairing situation of soundscape/hearing and flavor/smell. Several crossmodal correspondences include flavorful stimuli, sound stimuli, shapes, colors, textures, and so on. Various kinds of food include chocolate, coffee, wine, whiskey, cognac and others. The perceptual association between them is called sonic seasoning. When tasting wine with music, possible perspectives include pleasure, response, analysis and description. Basic perceptual similarities in the olfactory and auditory stimuli show high or low notes, harmonies and chords.

**Keywords:** Integrative Medicine Japan (IMJ); Soundscape; Flavorful stimuli; Crossmodal correspondence; Sonic seasoning

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## Commentary

Integrative medicine (IM) includes a wide range of medical care, including complementary and alternative medicine (CAM) in addition to Western Medicine (WM) [1]. The authors have continued to practice music therapy and manage the Integrative Medicine Japan (IMJ), Shikoku Island Division for years [2]. Among them, two types of simultaneous practice have been recently attracting attention, such as music therapy and aromatherapy. This article describes the relationship between soundscape/hearing and flavor/smell.

From various studies, the focus would be the pairing situation of soundscape and flavors [3]. Recent interests include some pairings of aromas, tastes and oral somatosensory food [4]. They have creaminess, a flavor with stimuli, trigeminal stimuli, synesthesia [5]. Several crossmodal correspondences are observed among some components [6]. For concrete factors, flavorful stimuli, sound stimuli, shapes, colors and textures are found [7]. The definition of the crossmodal correspondences would be surprising associations, such as various attributes, stimuli, and dimensions of experience [8,9].

The relationship between soundscapes and flavorful foods would be important. Among the several human senses, the combination of hearing and taste has attracted attention in various combinations of modality [8]. Specifically, it means the experience of tasting a musical piece and also the flavor of food at the same time. The various kinds of food include chocolate, coffee, wine, whiskey, cognac and others [10]. Factors such as time, place, mood, color, shape, and texture stimulus are involved in these occasions as a

whole. Moreover, the two senses of listening and tasting have been traditionally considered unrelated, but they are mutual interaction each other. The perceptual association between them has been investigated with interest, which is called “sonic seasoning” [11]. Semantic priming research has been continued for long concerning music and food. Some examples include the episodes of listening of French music and taking French wine in the shop. Similar phenomenon was found, in which flamenco Spanish music may bring people choosing paella menu rather than Italian spaghetti [12]. Thus, back ground music (BGM) may give some bias to our choices for foods or beverages. However, some extensive evidence suggested that such music changing our behavior would not usually recognize unconscious influence so much [8]. Furthermore, some attributes for music associated with emotional feeling can bring some bias for personal comments about the tasting experience [13]. One example showed the evidence that playing classical music can provide the impression associated with prime quality. It is often noted that people tend to spend more for drink and food when classical music is actually playing [14]. This approach of pairing of music and food seems to be similar to the perspective way about intellectual and cognitive stream.

By the presence of pleasant music, crossmodal influence on tasting experience has been studied [15]. The more he likes the music on playing, the more he gives report of tasting the paired experience of music and food. Especially, in the case of flavorful stimuli to related music, several reports showed a robust relationship between mediating emotional role and a certain music [16]. Although emotional factors cannot explain all opportunities, it is often regarded as a main explanatory variable in the light of crossmodal

correspondences.

How will the presence of music affect the wine tasting experience? [17]. For example, we can guess about four aspects in the following [18]. They are i) Pleasure: how much pleasure do you feel for drinking wine?, ii) Response: How much levels of alcohol, acidity, sweetness of the wine, and how much impact did the wine give the drinker?, iii) Analysis: What is the content of the wine such as price, quality, balance, complexity and so on?, iv) Description: How does the drinker describe the wine such as light or heavy, lush or zingy, feminine or masculine ?

Concerning the crossmodal correspondence of flavorful stimuli and musical stimuli, common perspective may be present. Some terms can be used for basic perceptual similarities in the olfactory and auditory stimuli. They are high or low notes, harmonies and chords [19]. It is not easy to explain all the similarity and difference of both flavor and musical information, but some feeling or impression can be expressed using these terms.

There is an example case in the coffee shop. When a coffee is served, a pair of wireless headphones are also brought simultaneously. The point is to deliver and provide a true multisensory tasting experience [20]. In another café, augmented glassware was served with reduction of sugar, in order to provide sweet music and to make the guests keeping seated for long [21]. The pairing of flavor and music can be spread through several experiential events and apps.

For the relationship between soundscape and food/beverage stimuli, there have been various impressive cases. They are interesting perspective in the light of research [8]. A variety of factors are present such as tasting rating, sweetness, acidity, fruitiness and musical sensation. Actually, however, it is not so easy to conduct the research in our daily lives at the restaurant and café [22]. The reasons include i) protocol is rather complex from the researcher, ii) the results cannot be obtained as a digit number, iii) explanation to the subjects is needed concerning the study.

As to the crossmodal pairing, “sonic seasoning” has been widely known colloquially and been growing academic and commercial interest [23]. There has been already evidence for such crossmodal associations, which are related to the combined situation of soundscape and flavorful stimuli. This combination can enhance our multi-sensory tasting experience [24]. The paired matching of flavor and music was found as possible development [16]. It is interesting to observe how lots of food designers, artists and personnel in social media are exploring the perspectives between soundscape and flavor experience in the future [25].

## References

1. Bando H, Yoshioka A, Nishikiori Y. Various Care Option of Integrative Medicine from the Viewpoint of Patient-Oriented Medicine. *Int J Conf Proc*. 2020; 2.
2. Yoshioka A, Nishikiori Y, Bando H. Music Therapy Session with Various Elements for Clinical Effects and Comfortable Mood. *Biomedical Science Journal*. 2020.
3. Spence C. Multisensory Flavour Perception: Blending, Mixing, Fusion, and Pairing Within and Between the Senses. *Foods*. 2020; 9:

- 407.
4. Reinoso Carvalho F, Wang Q, Van Ee R, Persoone D, Spence C. “Smooth operator”: Music modulates the perceived creaminess, sweetness, and bitterness of chocolate. *Appetite*. 2017; 108: 383-390.
5. Burzynska J. Assessing oenosthesia: Blending wine and sound. *Int J Food Design*. 2018; 3: 83-101.
6. Turoman N, Velasco C, Chen YC, Huang PC, Spence C. Tasting transformations: Symmetry and its role in the crossmodal correspondence between shape and taste. *Att Percept Psychophys*. 2018; 80: 738-751.
7. Wang Q, Reinoso-Carvalho F, Persoone D, Spence C. Assessing the effect of shape on the evaluation of expected and actual chocolate flavour. *Flavour*. 2017; 6: 2.
8. Spence C, Sathian K. Audiovisual crossmodal correspondences: Behavioral consequences and neural underpinnings. *Multisensory Perception*. 2020; 239-258.
9. Pramudya RC, Choudhury D, Zou M, Seo HS. “Bitter touch”: Cross-modal associations between hand-feel touch and gustatory cues in the context of coffee consumption experience. *Food Qual Pref*. 2020; 83: 103914.
10. Wang QJ, Frank M, Houge B, Spence C, LaTour KA. The influence of music on the perception of oaked wines-A tasting room case study in the Finger Lakes Region. *J Wine Res*. 2019; 30: 312-321.
11. Reinoso-Carvalho F, Gunn LH, Horst ET, Spence C. Blending Emotions and Cross-Modality in Sonic Seasoning: Towards Greater Applicability in the Design of Multisensory Food Experiences. *Foods*. 2020; 9: 1876.
12. Zellner D, Geller T, Lyons S, Pyper A, Riaz K. Ethnic congruence of music and food affects food selection but not liking. *Food Qual Pref*. 2017; 56: 126-129.
13. North AC. The effect of background music on the taste of wine. *Brit J Psychol*. 2012; 103: 293-301.
14. Spence C, Reinoso-Carvalho F, Velasco C, Wang QJ. Extrinsic auditory contributions to food perception and consumer behaviour: An interdisciplinary review. *Multisens Res*. 2019; 32: 275-318.
15. Reinoso-Carvalho F, Dakduk S, Wagemans J, Spence C. Not just another pint! Measuring the influence of the emotion induced by music on the consumer’s tasting experience. *Multisens Res*. 2019; 32: 367-400.
16. Wang Q, Spence C. Assessing the role of emotional associations in mediating crossmodal correspondences between classical music and wine. *Beverages*. 2017; 3: 1.
17. De Luca M, Campo R, Lee R. Mozart or pop music? Effects of background music on wine consumers. *Int J Wine Business Research* 2019; 31: 406-418.
18. Wang Q, Spence C. Assessing the influence of music on wine perception amongst wine professionals. *Food Sci. Nutr*. 2017; 6: 295-301.
19. Deroy O, Crisinel AS, Spence C. Crossmodal correspondences between odors and contingent features: Odors, musical notes, and geometrical shapes. *Psych Bull Rev*. 2013; 20: 878-896.
20. Jeon S, Park C, Yi Y. Co-creation of background music: A key to innovating coffee shop management. *Int J Hospital Manag*. 2016; 58: 56-65.
21. Lowe M, Ringler C, Haws K. An overture to overeating: The cross-modal effects of acoustic pitch on food preferences and serving behaviour. *Appetite*. 2018; 123: 128-134.
22. Mitchell CAA, Maybery MT, Russell-Smith SN, Collerton D, Gignac GE, Waters F. The structure and measurement of unusual sensory experiences in different modalities: The Multi-Modality Unusual

- Sensory Experiences Questionnaire (MUSEQ) *Front Psychol.* 2017; 8: 1363.
23. Reinoso-Carvalho F, Gunn L, Molina G, Narumi T, Spence C, Suzuki Y, et al. A sprinkle of emotions vs a pinch of crossmodality: Towards globally meaningful sonic seasoning strategies for enhanced multisensory tasting experiences. *J Bus Resea.* 2020; 117: 389-399.
  24. Burzynska J, Wang QJ, Spence C, Bastian SEP. Taste the bass: Low frequencies increase the perception of body and aromatic intensity in red wine. *Multisens Res.* 2019; 32: 429-454.
  25. Arellano-Covarrubias A, Gomez-Corona C, Varela P, Escalona-Buendía HB. Connecting flavors in social media: A cross cultural study with beer pairing. *Food Res Int.* 2019; 115: 303-310.