Softness in the Ear: How Musical Sophistication Influences the Interaction Between Music and Expected Haptic Softness

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This research investigates the impact of musical sophistication on the interaction between music and expected haptic softness. While our results suggest that soft (vs. hard) music increases the expected haptic softness for products for which haptic softness is diagnostic, we show that musically sophisticated people are better at recoding music into semantic associations related to haptic softness.

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EXTENDED ABSTRACT

Auditory atmospherics such as background music in the shopping environment are one of the most investigated elements of the store atmosphere. However, also in the online context, the frequently demanded strategic implementation of sensory stimulating marketing strategies (Krishna 2010, 2012) represents a promising approach to respond to the challenge of selling products for which sensory information is diagnostic. Consequently, retailers and other service providers are constantly interested in utilizing new findings in order to create a distinctive brand experience (Hultén, Broweus, and van Dijk 2009). Although existing research has widely investigated crossmodal interactions involving the auditory modality, it still leaves many important questions unanswered; for instance, can musical sophistication influence the interaction between music and haptics? Prior work rarely looked specifically at the underlying mechanisms of individual differences in multisensory perceptions. In view of the fact that the capability to decode musical meaning is assumed to be a function of musical background (Knöferle et al. 2015), how would musically sophisticated consumers respond to soft (vs. hard) music when shopping for textiles compared to consumers with low levels of musical sophistication?

In this research, we contribute to furthering such understanding by providing three experiments demonstrating how musical sophistication affects audio-tactile interactions. In particular, we show how higher musical sophistication enhances consumers’ expectations about the haptic softness of products after listening to soft (vs. hard) music. Musical sophistication is defined here as “psychometric construct that can refer to musical skills, expertise, achievements, and related behaviours” (Müllensiefen et al. 2014, p. 2).

Extant research has established that perceptual information in different sensory modalities can be recoded into abstract formats whose semantic dimensions partly overlap (Martino and Marks 1999; Melara and Marks 1990). In addition, marketing research on the crossmodal effect between music and haptics indicated that music is, in fact, translated into semantic associations related to musical as well as haptic softness (Imschlöfl 2014). Integrating the findings from these research streams, there are three main ways as to how musical sophistication can affect audio-tactile interactions: (1) impact on strength of semantic associations related to musical softness, (2) impact on strength of semantic associations related to haptic softness, or (3) both. We predict that musically sophisticated consumers are better at decoding soft (vs. hard) music into semantic associations related to musical softness. In comparison to consumers with low levels of musical sophistication, these associations may be recoded and lead to stronger semantic associations related to haptic softness, which result in an increased expected haptic softness (EHS). Based on previous findings on the influence of tactile information on evaluations (Grohmann, Spangenberg, and Sprott 2007), especially for products for which haptic information is diagnostic, we also expect increased levels of EHS to affect product evaluations. Thus, musical sophistication may also have an indirect positive impact on product evaluations.

Three studies tested our predictions: Study 1 employed a 3 (music: soft vs. hard vs. no) × 4 (product category: scarf vs. tablet vs. chair vs. book) mixed factorial design with music as between-subjects factor. Participants evaluated the EHS of four unbranded pictured products after listening to two pretested song excerpts that were either perceived as soft or hard; whereas, participants in the control condition listened to no music. We further tested the moderating effect of musical sophistication on audio-tactile interactions. The results showed that after listening to the soft (vs. hard) song version, participants only expected products for which softness is diagnostic to be softer, in our case a scarf. Moreover, musical sophistication significantly moderated this effect of soft (vs. hard) music on consumers’ EHS.

Study 2 was designed to examine the underlying mechanism of the positive influence of musical sophistication on audio-tactile interactions. Similar to Study 1, after participants were presented with a picture of the scarf from Study 1 and listened to either soft or hard music, we asked them to evaluate the strength of their associations related to musical as well as haptic softness (Imschlöfl 2014). A moderated serial multiple mediation (Hayes 2015) with strength of associations related to musical softness ($M_1$) and strength of associations related to haptic softness ($M_2$) as mediators, and musical sophistication as the moderator, revealed that musical sophistication significantly moderated the indirect effect of soft (vs. hard) music on EHS through $M_1$ and $M_2$ in serial (95% CI: .008, .193). This suggests that musically sophisticated people are better at recoding auditory cues (e.g., soft music) into semantic associations related to haptic dimensions. However, results of Study 2 also generally revealed that music is not translated into semantic associations related to haptic softness without being previously decoded into semantic associations related to musical softness.

As our theory assumes that musical cues of haptic softness can influence product evaluations since they may serve as quality indicators for products for which haptic information is diagnostic (Grohmann et al. 2007), in Study 3, we tested a moderated mediation model. Results supported previous findings that EHS fully mediates the effect of soft (vs. hard) music on product evaluations (intention to purchase, attitude towards the product, willingness to pay) (Imschlöfl 2014). Consistent with our prediction, this mediation was stronger among participants with higher levels of musical sophistication.

The current research is the first that provides insights about the conditions for crossmodal interactions involving the auditory and haptic modalities. In particular, products for which haptic softness is diagnostic are most likely to be subject to audio-tactile interactions. In addition, we contribute to sensory marketing literature by considering the potential impact of individual differences on the ability to match auditory and haptic dimensions with respect to the interactive nature of music and personality (Rentfrow and Gosling 2003).

REFERENCES


