Introduction to the Special Issue on Synaesthesia and Cross-Modal Perception

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Synaesthesia has been known for centuries but the last 20 years in particular has seen a renewed interest in the condition within the scientific community. This Special Issue of the journal Multisensory Research, entitled ‘Synaesthesia and Cross-Modal Perception’ stemmed from a meeting on this topic held in Dublin last year, hosted by Kevin Mitchell, Smurfit Institute of Genetics and Fiona Newell, School of Psychology at Trinity College Dublin. We were particularly keen to bring together researchers investigating multisensory processes in the general population with researchers specifically interested in synaesthesia. We, and many others, felt that it was timely that both communities came together to perhaps learn from the latest advances in each of the respective fields. The meeting attracted researchers from all over the world, with approximately 50 presentations, and there were lively discussions between delegates from a wide variety of disciplines on the nature of synaesthesia.

A number of pertinent issues emerged from the discussions at the Dublin meeting, which are largely reflected in the contents of this Special Issue. First, was the importance of taking account of phenomenological experiences into our scientific investigations. Whilst these are of great interest, it could be argued that first-hand accounts have been one of the casualties of a more recent focus on broad empirical investigations of synaesthesia. As researchers, we can learn a lot from synaesthetes themselves, and indeed the meticulous descriptions they provide of their condition may introduce new and important research questions.

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To that end, first-hand accounts from three individuals who experience different types of synaesthesia, are included in this issue. All synaesthetes were kind enough to agree to describe their experiences and how these are manifested in their own professional interests. Carol Steen describes her new synaesthetic experience of hypnagogic visions, which are triggered in specific circumstances but mainly when her eyes are closed, and how she expresses these experiences in her art. The music composer and concert pianist, Svetlana Rudenka, describes how her synaesthetic associations between vision and sound influence her music. Carolyn Hart provides a detailed account of how her experience of mirror-touch synaesthesia influences her profession as a massage therapist. Also, Dyedra Just presents new evidence from the writings of Wassily Kandinsky, arguably the founder of abstract art, to support the notion that he was a genuine synaesthete. One significant outcome from documenting synaesthetes’ descriptions is that the variation of synaesthetic experiences across individuals can be better appreciated, particularly the quality and extent of their experiences. These accounts question the notion of whether synaesthetes can even be reliably categorised into strict sub-types of synaesthesia.

A second important issue discussed during the Dublin meeting related to the specificity of synaesthesia itself, particularly with regards to the cognitive processing underpinning the condition. Indeed, there has been a shift in emphasis in the literature from single-case studies of synaesthesia to population studies that attempt to abstract common genetic, physiological, neural or behavioural mechanisms that characterise different types of synaesthesia. Different approaches have been taken to address this topic, and are reflected in many of the articles contained in this Special Issue. For example, Bankieris et al. took a Bayesian approach to assess multisensory integration in synaesthetes and reported no difference between synaesthetes’ and non-synaesthetes’ ability to merge information across vision and audition, with both groups integrating information in a statistically optimal manner. This finding adds to growing evidence that multisensory processes are normal in synaesthetes. Two other articles explore the role of attention on synaesthesia, with Arend and Henik reporting that synaesthetic features are processed independently prior to feature binding, as is typically found in studies on the role of attention in perception, but the findings of Mas-Casadesús and Gherri suggest that synaesthetes are better than non-synaesthetes at inhibiting cross-modal distractors in a spatial task. Other articles included in this Special Issue take a different approach by focussing on evidence for learned associations across the senses in non-synaesthete participants. A number of articles provide evidence for consistent correspondences across modalities, including between auditory pitch and visual elevation (Jamal et al.), auditory pitch/tempo and temperature perception (Wang and Spence), musical instruments and taste perception (Watson