

Image/Imagery/Imagination in Psychology [†]

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Nowadays, scientific research is more and more specialized and the same is true for scientific meetings and workshops. Small groups of experts tend to meet themselves, speaking a “secret” language and often sharing the same experimental procedure. This is exactly the reason why I decided to attend this workshop and to involve the Italian Association of Psychology to spread this information to the whole psychological community: this congress was as far as possible from such a perspective. Architects, psychologists, anthropologists, designers, philosophers, all sharing the interest and the curiosity of talking about images.

Images, or better imagery, for psychologists, is a broad area of research in Psychology. Francis Galton was probably one of the first to make an attempt to propose a theoretical framework to formalise the structure and use of this human ability. In his book “Inquires into Human Faculty and its Development”, originally published in 1883 with a new version in 1907, an entire chapter was devoted to Mental Imagery. At this stage, imagery was mainly defined as a form of visual memory and this allowed researchers to understand what is still considered one of the main characteristics of mental images: its vividness. How vivid is a mental image? Can we speak of vividness of a more general mental representation? Can the vividness of a mental image be compared to that of a real visual stimulus? These are the questions that were looking for an answer at that time. Moreover, these questions were not exactly new ones!

When the Romans started to formalise human psychological functions, they tended to focus on memory and to understand how memory can be facilitated using mnemonics. They immediately understood that human memory may be facilitated by generating visual representations of the material to be remembered. Twenty centuries after that empirical observation, a Canadian psychologist, Allan Paivio, suggested that the facilitation association to visual images may be related to a variable that he defined as imagery value (concrete objects—a chair—have a higher imagery value than abstract words, such as ethics or consciousness). Higher values are associated with an easier recall. Further, he created a model defined dual-coding theory, postulating that images of concrete words are always associated with the corresponding word, but not the contrary. Thus, images may benefit from dual coding (visual + word) that in turn facilitates learning and memory.

Since then, the investigation of human images has been a major area in psychological research, exploring different perspectives. For example, mental representations are not only visual, but can also be associated with many different forms of external stimuli or to material that we already have in long-term, semantic memory. We may have tactile or auditory images, and often all stimuli are processed in an integrated fashion. Other studies demonstrated that visual perception is not necessary for having a mental representation sharing visual or spatial characteristics: blind people do have mental images. These lines of research have often been integrated with the investigation of cognitive and neural plasticity or of multisensory integration: two hot topics of the last decades.

This is a clear example of the specialization characterizing our research projects. In Galton's time, the notion of imagery was shared by many different disciplines: these days, the psychological study of human imagery requires an understanding of the underlying neural mechanisms associated with the generation of these representations, the interaction with vision and other sensory inputs, the mechanisms of neural and cognitive plasticity, and so forth. This theoretical perspectives surely helped to understand the nature of human cognitive processes, at the same time limiting the interactions with the other disciplines.

At the beginning, as I acknowledge above, I was surprised by the structure of this meeting; surprised by the difficulty to frame the topics in a structured well-known theory. This was a challenge and probably the main reason for accepting to get involved in this event. At the same time, it also represented a difficulty: what do I have to talk about? An additional doubt came to my mind. In Italian, we have a single word, *immaginazione*, to describe two very different mental processes. The first one is imagery, the ability to generate and use a mental representation often involving visual characteristics ("try to generate the mental representation of your city and describe the shortest way to the train station": that is, generation, scanning, and processing of a mental representation). The second one is imagination, often referring to dream-like thoughts, fantasies, something that is not real, a kind of wishing ability. Cognitive psychologists usually refer to imagery and, on the contrary, have some problems in defining imagination!

I am now revising this short introduction a long time after the meeting and I must say that all positive feelings were completely confirmed and the doubts disappeared in the first session. I discovered that a single font may induce very strong psychological feelings; that comics evolved over time to adjust to socio-cultural transformation and that representations of images printed on paper may be as interesting as the ones embodied in our brain. In a word, I rediscovered the old feeling of sharing ideas just for the curiosity to learn something new, for the pleasure to meet interesting people, or for the willingness to organise other interesting workshops. This was *Immagini* 2017 and thus we cannot help but look forward to a new *Immagini* meeting!



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