

INTRODUCTION

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Paolo Bozzi (1930–2003) was one of the most fully-rounded and subtle thinkers in Italian experimental psychology, who, in addition to his laboratory work, was a philosopher, a violinist, a musical composer and an essayist.

After graduating in philosophy from the University of Trieste, Paolo Bozzi began as an assistant to the leading Italian Gestalt psychologist Gaetano Kanizsa (1913–1993) in the Institute of Psychology at Trieste, around which his academic career was centred (though he also taught for brief periods at Padua and Trento), where he occupied the Chair of Methodology of the Behavioural Sciences, from which he retired in 1990. Throughout his career, he kept close ties with the laboratory at Trieste in a series of experiments that were the first outings in what later came to be known as “naïve physics” beginning in the late 1950s, with studies of the perception of pendular motion and of bodies in free fall. In collaboration with his friend and colleague Giovanni Bruno Vicario (1932–), Bozzi published a seminal paper in 1960 on auditory streaming and on factors for the unification of musical notes. In the early 1960s, he isolated the function of directionality as a factor in the unification of visual events. In the 1970s, he proposed and defended the method of interobservation as an experimental approach to the study of vision, and in the following decades, he continued to bring to light interesting perceptual behaviours, such as achromatic transparency using simple lines and the dynamic behaviour of coloured after-images.

In parallel with this rich range of experimental discoveries concerning sight and hearing, of which we reproduce some of the leading results in Part IV, Bozzi was continuously engaged in elaborating a theoretical programme for his research. The resulting anti-metaphysical and anti-psychophysical stance underpinned an Experimental Phenomenology *iuxta propria principia* (“by means of its own principles”). As a point of methodology, his approach was to view his experimentation as an ethology of objects and events, and, as a point of epistemology, he regarded his results as a branch of natural science, of a piece with and a foundation for a naturalistic conception of knowledge. In what we might think of as an extreme version of Bozzi’s view, for all that it is balanced and thoroughly argued for, Experimental Phenomenology is neither a science of the perceptual process nor indeed a science of the appearances, but is rather a science of how things are.

In Bozzi's writings, descriptions of phenomena are intertwined with descriptions of methodological matters and with theoretical elaborations of those very descriptions. Likewise, the observations that he made "in the laboratory" are intertwined with the observations that he made in the natural laboratory that is the world outside the laboratory, for Paolo Bozzi was an experimental phenomenologist in life as lived outside the walls of academe. As we gather from his writings, he was an acute observer of the passing scene, an attentive reader of the classics and a day-to-day experimenter so that a characteristic move in his writing and in his theoretical thought is a recurrent back-and-forth between laboratory observations and observations of everyday life.

The reciprocity between experimentation and reflection is perhaps the architectonic feature of Bozzi's approach to his chosen field of study. Just as he loved to manipulate the look of the facts under observation ("I change this here, to see what will happen there."), with the same pleasure and sense of need that a musician varies the ways of plucking the strings of a violin, with the fingers or with the bow, so as to hear what difference it makes, so he always kept before his mind the motto that "experiments are bits of reasoning". And these reasonings and reflections, binding together his experimental procedures, are of interest not only to the vision scientist who is seeking to manipulate the structure of the facts so as to bring out the perceptual structure or to the cognitive psychologist who is looking for the perceptual grounding of various cognitive phenomena concerning imagination, language, memory and thinking, but also to the thinker who is seeking a theoretical understanding of the reality of the perceived world. They are likewise of interest to philosophers of perception who are concerned with teasing apart (theoretically and methodologically) cognitive and phenomenal dimensions in visual experience, with the role of introspective reports, understood as descriptions of direct experience of the world in contemporary vision science as well as to anyone committed (for theoretical or practical reasons) to bringing out the structural isomorphism between any given conceptual field and what is often these days rather vaguely known as "common sense".

Out of Bozzi's output of about 100 articles, book chapters and monographs, the present anthology presents a selection of 18 items aimed at giving a taste of the complexity and richness of his thought. Only three of the papers have previously appeared in English, and are here presented in slightly revised form. Some of the others have appeared in various versions in Italian, in journals and in anthologies, or as re-worked by Bozzi himself in his most accessible and wide-ranging statement of his overall position in *Fisica ingenua* [Naïve Physics] (Garzanti, Milan, 1990), a work that brings together, as its subtitle says, "studies in the psychology of perception", with many more personal musings on Bozzi's practical and theoretical engagements with music as well as with the questions that he already posed for himself as a child about the relation between words and things, between meaning and value, between sounds and objects, between observation and deduction, and between perception and imagination.

In his lifetime, Bozzi was reluctant about having his works translated out of the supple and trenchant Italian that is so noteworthy a feature of his performances – and so rare a feature of academic writing, not only in Italian. In collaboration with the translators, the editors have reviewed and revised all the texts singularly and as a whole, with a view to ensuring not only closeness to Bozzi's originals but also a certain degree of stylistic and terminological consistency from one chapter to the next. Despite the inevitable loss of some literary merit, we trust that our efforts will be redeemed by making his thought accessible to

a wider readership. By “a wider readership”, we mean not only the larger Anglophone world to which the name of Bozzi may be little known, but also a disciplinary broadening beyond the confines of the specialist publications in which many of the items first appeared, primarily dedicated to technicalities of the psychology of vision science. For those working in that field, many of these contributions to Experimental Phenomenology will suggest fresh theoretical ideas and methodological insights that call out to be integrated with the theories of perception of Gestalt and neo-Gestalt psychology (for a review, see Wagemans, Elder et al. 2012; Wagemans, Feldman et al. 2012), of Michotte (1946; see also Wagemans, van Lier and Scholl, 2006) and Gibson (1950 1968, 1979), as well as to be brought into dialogue with the more recent debates about the possible profiles for a science of experience that are also reflected in the current renewal of interest in Experimental Phenomenology as evidenced, for instance, by the reprint of the invaluable volume first edited in 1990 by Thiné, Costall and Butterworth, *Michotte’s Experimental Phenomenology of Perception* (2014), by Albertazzi’s *Handbook of Experimental Phenomenology* (2013), by the new edition of Don Ihde’s *Experimental Phenomenology: Multistabilities* (2012) and by Niveleau and Métraux’s *The Bounds of Naturalism: Experimental Constraints and Phenomenological Requiredness*. Bozzi’s Experimental Phenomenology can contribute to investigating the structures and functions of mental simulation, commonly understood as “the re-enactment of perceptual motor, and introspective states, acquired during experience with the world, body and mind” (Barsalou, 2008, p. 618, 2010). In particular it can contribute to exploring the distinctiveness and at the same time “derivative” relationship between perception and imagination, perception and language (discussed, for example, in Gallagher and Zahavi, 2008; Thompson, 2007a, b; Bloomberg, and Zlatev, 2014; and empirically addressed in Pecher and Zwaan, 2005, but also in most of the psychological literature on naïve physics or naïve optics). It offers a useful perspective for those engaged in the development of experiential view in cognitive semantics and in promoting a cross-fertilisation between cognitive linguistics and phenomenology (e.g. Bloomberg, and Zlatev, 2014; Zlatev, 2010; Woelert, 2011). Moreover Bozzi’s approach may be a source of stimulus in neighbouring research projects, such as those into visual and auditory scene analysis of complex environments or into robotics that use naïve-physics models rather than AI. Further afield, researchers with other interests in naïve observers’ experiences, will find much that favours a realist theory of experience and a realist ontology, as well as providing thought-provoking insights into experimental philosophy and experimental epistemology.

The scheme of the present anthology aims at giving pride of place to Bozzi’s own words and thus to open a free dialogue between the author and the reader in the hope of stimulating fresh thoughts and new ways of understanding whole sets of questions – or reinforcing reasons for dissent from the views that Bozzi put forward. The team of experimental psychologists and philosophers who collaborated on the anthology offered brief comments on the texts, in many cases continuing discussions that they had been carrying forward with Bozzi himself. The approaches taken in these comments have been left entirely up to the single scholars, so as to reflect the very different ways one might “dive into” these writings and come up with new observations, reflections and ideas for further research work. The hope is that these *intermezzi* will help the reader to get a feel for the debates to which the papers are still vibrant contributions.

The lead editor, Ivana Bianchi, is responsible for the selection and structuring of the material here presented, which is articulated into four parts plus a section of “afterthoughts”.

The basis for this choice of the core themes derives from suggestions that Bozzi made in the course of a cycle of discussions held with a select group of friends and collaborators at the University of Verona in 2001 (two years before his death) focusing in each session on one or other of the writings that Bozzi had chosen to be commented on by and with him. It may be helpful to summarise the underlying architecture and some of the many interconnections that hold the parts together as follows.

The three papers that open the volume in Part I delineate an overall picture of Bozzi's standpoint. They set out the framework for the writings that follow and that go more deeply into one or another issue. Experimental phenomenology (Chapter 1) is one of Bozzi's last writings, to which the Verona discussions we have just mentioned were a spur. It is certainly *the* paper in which he presents an overview of his Experimental Phenomenology of Perception (henceforth, EPhP). If Chapter 1 defines what Bozzi expects EPhP to do, in Chapter 2, On some paradoxes of current perceptual theories, he highlights the drawbacks of alternative perceptual theories. He does this by discussing the paradoxes that are embedded in these alternative theoretical positions. Once the programme of Bozzi's EPhP has been clarified, one still needs to understand what "phenomenal experience" means for him. In Chapter 3, Phenomenal experience, epistemic experience and psychological experience. Notes towards an epistemology of the phenomenological experimental method, he sets out the differences among phenomenal experience (i.e. direct experience or "reality"), epistemic experience (i.e. the kind of experience described by means of operations or measurements, which is the object of a specific discipline) and psychological experience (i.e. the biological and psychological processes occurring in the brain).

One of the main conclusions reached at the end of Part I is that the contents of EPhP are "what is directly under observation" (i.e. "phenomenal experience" or "reality"). The next chapters in Part II define what is "under observation" according to Bozzi. Chapter 4, The stream of consciousness, or the events under observation, answers the question: what is "under observation" in temporal terms? This is a brilliant discussion of the temporal edges of the phenomenal present full of interesting references and observations. Chapter 5, Untimely meditations on the relation between self and non-self, clarifies what is "under observation" in spatial terms. Is it just what is strictly speaking "visible" (meaning the portion of space that occupies my visual field right now, given the position of my head and my eyes)? Or does it extend to the space which is not in front of my body but is behind me or out in the corridor which is just beyond the door of the room where I'm sitting and so on? The relation between these facts and the psychophysical chain, which is apparently the necessary framework for any analysis of the perceptual process, is addressed in chapter 6, Logical analysis of the psychophysical (L-R) scheme. In discussing the independence of the phenomenal world from the underlying mechanical processes, Bozzi adds a strong argument in support of his idea of an EPhP *iuxta propria principia* and at the same time provides a strong logical argument to avoid any type of physical reductionism or neuro-reductionism.

Related to the idea of EPhP *iuxta propria principia* are the two warnings that he gives in the next two chapters: Do not confuse what we see (phenomenal experience) with the "stimulus" (Chapter 7) and do not confuse seeing with interpreting (Chapter 8). In Chapter 7, Five varieties of stimulus error, five variants of the stimulus error are presented and discussed. As often happens with Bozzi's writings, this paper highlights both the methodological implications for the experimental researcher of what is being pointed at and the epistemological implications of the issue discussed for a theory of perception. Chapter 8, Seeing As, presents

Bozzi's discussion of one of the descriptions Wittgenstein gives in *Remarks on the Philosophy of Psychology I* §1–29. The distinction between what we see and what we know about what we see is a key point in Bozzi's definitions of "phenomenal reality", i.e. the world that we interobserve and inter-subjectively share, over against the "cognitive integrations" or interpretations of it (which might indeed be subjective) that we apply to it.

Once Parts I and II have clarified what "phenomenal experience" (the subject of EPhP) is, according to Bozzi and what it must not be confused with, we can take a step further and define the basic tools to be used in order to produce an uncontaminated analysis of phenomenal experience. This is what is developed in Part III. Chapter 9, Phenomenological descriptions and physical-geometrical descriptions, defines the minimum criterion to be applied in describing the characteristics of the phenomenal world. The discussion focuses on the basic geometry of the phenomenal world, but the issues addressed here lead to a more general question concerning the relation between formalisms, technical constructs and vocabularies in the EPhP. Since the phenomenal world is not one's private world, it can be interobserved. In Chapter 10, Interobservation as a method for Experimental Phenomenology, Bozzi puts forward a new experimental approach, which he calls "interobservation", as an alternative to the classic experimental method adopted in psychology prescribing reports from independent subjects. He discusses the bases of this method, its advantages and the conditions under which its use is recommended.

With all these premises and tools in hand, which define the theoretical and methodological background of Bozzi's EPhP, we follow him into the laboratory in Part IV and consider some specific phenomena that he brought into focus.

Chapter 11, Phenomenological analysis of pendular harmonic motion and the conditions for "natural" motion along inclined planes presents two studies of the phenomenology of motion which are two inaugural works in what, twenty years later, came to be called Naïve (or Intuitive) Physics (McCloskey 1983; McCloskey, Caramazza and Green, 1980). Chapter 12, A new factor of perceptual grouping: demonstration in terms of pure Experimental Phenomenology, is an excellent discussion that adds a new law of unification to the list of factors initially identified by Wertheimer (1923/1938). The structure of its arguments emphasises the role of perception of couplings (i.e. direct relationships) in EPhP demonstrations. If the foregoing chapter represents an example of how Bozzi contributed to the development of Wertheimer's laws of organisation in vision, Chapter 13, Two factors of unification for musical notes: closeness in time and closeness in tone, shows an innovative development of these laws in the field of acoustics. Here Bozzi analyses two factors separately and in conflicting conditions: proximity in time and proximity in tone.

In Chapter 14, Observations on some cases of phenomenal transparency obtained with line drawings, in the tradition of Metelli's transparency law (Metelli 1974, 1985), Bozzi draws attention to another way of conveying the perception of transparency that derives from outlines rather than grey surfaces. Besides providing an opportunity to demonstrate the spectacular behaviour of chromatic after-effects (which led Bozzi to talk of a "hydraulic model"), Chapter 15, Original observations on certain characteristics of afterimages, shows EPhP at work on observations that lie at the boundary of the genuinely phenomenal distinctions between what appears to be subjective and what appears to be objective. This is a descriptive distinction in Bozzi's view.

In Chapter 16, Tertiary qualities, Bozzi addresses two questions. The first is: What is the place of tertiary qualities (or expressive qualities) in phenomenal experience? Drawing on

Gibson's account of affordances (1979), Bozzi suggests that these qualities cut across the traditional subjective-objective divide. The second: Do they share the same factual identity of what we mean by "reality"? Bozzi's answer is "yes".

The last section, Afterthoughts, is aimed at those readers who, having got to the end of the book, might be wondering how Bozzi located himself relative to the traditions of experimental psychology of which he was undoubtedly an heir. In Chapter 17, Experimental Phenomenology: a historical profile, Bozzi presents a look backwards over his discipline, tracing its philosophical roots in post- (and, in some key moments, anti-) Kantian philosophy as well as stressing the wealth of laboratory results on which the experimental programme was based; and Chapter 18, What is still living and what has died of the Gestalt approach to the analysis of perception, clarifies his relationship with key theoretical presuppositions of classical Gestalt psychology and at the same time as relaunching its methodological approach as a contribution to new trends.

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