

Introduction

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Consciousness in Interaction: The role of the natural and social context in shaping consciousness

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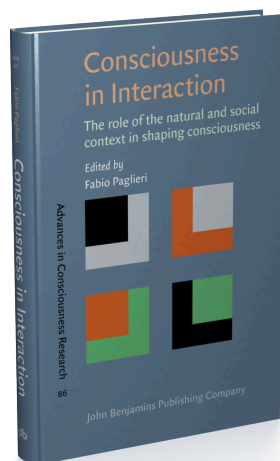
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Introduction

What does it mean to study consciousness in interaction?

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For a long time, consciousness has been characterized as a private, inner, interior faculty, relating to the mental life of the individual, and thereby in principle inaccessible to inter-personal scrutiny and insulated from external influences. This view is still dominant in the commonsense use of the notion, and it colors also the philosophical debate between reductionists and dualists on phenomenal consciousness, inasmuch as the latter naturally assign stronger emphasis to the irreducibly private character of conscious experience, as opposed to the former. This volume challenges the individualistic view of consciousness, presenting a collection of research articles based on the assumption that consciousness, on the contrary, is best understood as emerging from, and impacting on, our skilled interactions with the natural and social context.

All contributions originate from a 3-year long, Europe-wide collaboration within a research project aimed at developing precisely that kind of approach, and thereby named *Consciousness in interaction: The role of the natural and social context in shaping consciousness* (CONTACT). The CONTACT research project was funded through the European Science Foundation within the EuroCORES programme CNCC: *Consciousness in Natural and Cultural Context* (<http://www.esf.org/cncc>), and coordinated by the Editor of this volume together with Cristiano Castelfranchi. This book reflects both the ample scope and tight interconnections characteristic of the project, with an emphasis on interdisciplinary research at the interface between philosophy, psychology and neuroscience. It features the work of some leading scholars in each field, alongside younger researchers with promising careers ahead of them.

This results in a unique collection of essays on a specific, still largely unexplored approach to consciousness research: the view that, in order to understand various forms of conscious experience, we need to look beyond the mind and brain of individual subjects, studying also their sensory-motor interactions with the environment and their social life. This interactive approach to consciousness is gaining widespread recognition worldwide, and this book provides the first attempt of collecting and comparing different versions and facets of it. The volume also offers, in the last section,

a much needed analysis of how this approach originated in the history of European thought, putting the rest of the book in an historical perspective that is typically (and sadly) lacking in recent works on consciousness.

Among the new findings and theoretical breakthroughs presented in this book, the following are the most prominent:

- Refinement of the extended mind hypothesis and detailed discussion of its contentious application to consciousness, with an emphasis on the role of inter-subjectivity in defending various forms of externalism on consciousness.
- Critical assessment of various enactive approaches to cognition, focusing on their adequacy to account for phenomenal consciousness.
- Exploration of the role of motor intentionality, and in particular of the “mirror system”, in shaping social cognition, action understanding and emotion recognition.
- Development of a multiple selves analysis of personal identity and evaluation of its repercussions on action control and behavioral coherence.
- Historical analysis of how the concept of consciousness evolved in Western modern philosophy, especially during the 17th and 18th centuries, and the implications of this evolution for our current views of conscious experience in relation to social interaction.

The volume is divided in three broad thematic sections. The first section, “Phenomenal consciousness: brain, action and interaction”, is dedicated to explore how phenomenal consciousness and subjective self-hood are grounded on natural and social interactions. This section comprises six contributions.

Adrian Alsmith critically examines the legitimacy of pre-reflective bodily consciousness (PBS) as a useful concept for the study of conscious experience. The aim of his paper is not to make a conclusive case for PBS, nor to provide a detailed description of its phenomenology, but rather to preliminary assess whether taking seriously PBS is warranted on rational grounds. After characterizing the essential features of PBS and placing the notion in its proper historical context, Alsmith argues that evidence based on self-reports cannot either verify or falsify PBS, precisely because this form of consciousness is defined as pre-reflective, hence beyond what can be accessed through self-reflection. However, Alsmith suggests that PBS provides the best possible explanation for some essential aspects of conscious experience, such as the identity of perceived objects in spite of continuous changes in their perceptual appearance. The abductive plausibility of PBS is thus sufficient to rationally justify making use of the notion, according to Alsmith, even though further work will be needed to ascertain its true explanatory power.

Julian Kiverstein and *Mirko Farina* discuss sensory substitution devices (SSDs) in relation to the extended mind hypothesis, first formulated by Andy Clark and David Chalmers (1998), and to dynamic sensorimotor theories of consciousness (DSM),

as articulated for instance by Susan Hurley and Alva Noë (2003). Proponents of DSM argue for some version of vehicle externalism on consciousness, maintaining that the relevant substrate sufficient to produce a conscious experience needs not be confined within the brain, but rather extends to include also the proper sensorimotor interactions between body and world. In contrast, Clark maintains that the extended mind hypothesis is valid only for the unconscious mind and should not be generalized to conscious experience. Within this debate, Kiverstein and Farina focus on a specific argument of DSM proponents, the variable neural correlates argument, and on Clark's recent criticism of it (2009). Kiverstein and Farina concede that such criticism is well founded in general, but argue that SSDs provide a real world example of variable neural correlates that circumvent the criticism, thus providing a partial defense of the argument and lending some support to the kind of vehicle externalism on consciousness endorsed by DSM.

Nivedita Gangopadhyay argues that instances of embodied intersubjectivity, such as gestures and facial expressions in emotions, may provide robust support to the extended mind hypothesis (EM). However, whether or not these case-studies can be regarded as genuine forms of EM depends on what view of action-understanding we endorse, and Gangopadhyay discusses two options on offer: some version of the simulation theory (ST), e.g. Hurley's shared circuits model (2008), and the perceptual account (PT) proposed by Gallagher (2008). Both can characterize embodied intersubjectivity as an instance of EM, but there is a price to pay: if ST is correct, then representationalism needs to be abandoned for EM, contra Clark (1997); if PT is correct, then the basic functional dichotomy between perception and action has to go, again contra Clark (2006; 2010). Either way, according to Gangopadhyay, enlisting embodied intersubjectivity to support EM implies a radical change in the conceptual framework that we use to think about EM, along lines already suggested by Chalmers (2008).

Michael Madary focuses on vehicle externalism of perceptual states (EVPS), of the kind endorsed by Hurley (1998) and Noë (2004): the claim that the vehicles of human perceptual states can sometimes include the body and environment in addition to the brain. Madary observes that proponents of EVPS ought to (and do) reject both the Cartesian Theater (Dennett 1991) and temporal atomism, to wit, the view that the static configuration of subpersonal processes at any given instant is sufficient to determinate the conscious experience occurring at that time. Madary shows that three of the most prominent objections against EVPS, respectively by Block (2005), Prinz (2006), and Adams and Aizawa (2008), are all committed to the Cartesian Theater, temporal atomism, or both – hence showing a lack of appreciation for the assumptions of EVPS, and ultimately falling short of their target. Finally, Madary discusses also the charge of confusing constitution with causation, often levied against EVPS: he emphasizes the dubious nature of the distinction in contemporary science, and shows its inapplicability to dynamical explanations of perceptual states. This gives reason for

using dynamical explanations to articulate EVPS in precise and non-trivial terms, and as a way out of the somewhat sterile debate observed so far on EVPS.

Bryony Pierce takes a broader view of phenomenal consciousness and discusses its functional role in action control. She speculates that consciousness acts as an interface between the physical body and cognitive processes: more exactly, conscious sensations are hypothesized to ground the evaluation of external state of affairs as either positive or negative, thus enabling rational goal-directed action. This approach has much in common with the hedonic interface theory of consciousness (Balleine & Dickinson 1998; Dickinson 2008): Pierce highlights similarities and differences between such theory and her own approach, arguing that these two views are fully compatible but differ in motivation and method. Whereas Balleine and Dickinson are primarily interested in providing an evolutionary justification of phenomenal consciousness and base their conclusions on empirical findings, Pierce is attempting to ground rational action in conscious sensations and thus uses conceptual arguments to prove such point.

Dave Ward and *Mog Stapleton* articulate a view of the interrelation among different claims about cognition that are often discussed in connection with each other: the idea that cognition is, respectively, enactive, embodied, embedded, affective, and extended. Ward and Stapleton briefly introduce three variants of enactivism, roughly corresponding to the analysis of autopoietic systems originally championed by Varela, Thompson and Rosch (1991), various sensorimotor theories of perception (Hurley 1998; Noë 2004), and the action-space view of perceptual experience (Ward, Roberts, & Clark 2011). Having highlighted the tight connections between these different versions, Ward and Stapleton present several arguments to show that, if the enactivist approach is right, then considering cognition as embodied, embedded, affective, and (potentially) extended is also correct. This places enactivism, i.e. the view that perception and cognition essentially depend upon the agent's interactions with the environment, at the core of the ongoing revolution in how the mind is conceived in philosophy and cognitive science.

The second section of the volume, "Social cognition, self-control, artifacts and emotions: the role of consciousness", is devoted to analyze how interactions with external objects (artificial or natural) and other human beings contribute to shape our understanding of ourselves, and how consciousness changes key areas of human cognition, such as social interaction, self-control and emotions. This section comprises eight contributions.

Tillman Vierkant and *Andreas Paraskevaides* discuss the plausibility of mind-shaping, i.e. the tendency to conform one's behavior and interpretations to socially learned norms and habits, as a mechanism through which we achieve self-understanding and self-regulate our conduct. They agree that approaches based on mindshaping (e.g. McGeer 2007; Hutto 2008; Zawidski 2008) offer a viable and attractive alternative to standard views of folk psychology as mindreading – be it understood as a theory or

as a simulation. However, Vierkant and Paraskevaides also insist that there is still a crucial role for a theoretical understanding of psychological states in human cognition, to wit, enabling intentional control of one's mental states, thus granting greater flexibility to behavioral control. In particular, they distinguish narrative control from intentional control, show that only the latter applies to mental states, highlight the implication it has for future oriented self-control, and explain why this view does not lead us back to a Cartesian homunculus, but simply adds another layer of control to our fundamentally social mind.

In his paper, *Cristiano Castelfranchi* provides a bird-eye view of the many ways in which skills honed for social cognition are re-used internally, to create and negotiate both a stable sense of identity, and a superior ability to control one's own conduct. He labels this broad family of phenomena as reflexive sociality, and discusses both its functions and its mechanisms. Concerning functions, Castelfranchi argues that we interpret our own behavior in mental terms (self-directed mind-reading) not only to better make sense of our deeds and improve our predictive capacities on what we will do in the future, but also (and mostly) to devise new ways of manipulating our actions via suitable changes in our internal attitudes (self-influence). This enables us to collaborate or compete with both future and past interests that we attribute to ourselves, by imposing upon us preferences and aims that we expect to differ from those we would develop spontaneously, and to fight and suppress unwanted needs or dangerous desires. Since our capacity for self-influence is parasitic on our capacity for social influence, its mechanisms consist of intrapersonal variations of the most typical interpersonal influence strategies: among others, the use of duties, emotions, communicative acts, image concerns, self-imposed external constraints, and the like.

In a similar vein but with a more focused approach, *Maria Miceli* and *Cristiano Castelfranchi* show how coherence of conduct (or lack thereof) impacts on the agent's self-image. They define coherence of conduct in terms of persistence in the pursuit of one's main goals in life, as well as having a coherent set of such goals, and they show how this does not entail behavioral fixity or stereotypy. Miceli and Castelfranchi borrow from the rich literature in social psychology to disentangle different facets of the self-image: persistence, social and personal identity, self-efficacy, general self-esteem, self-evaluation, and compliance with one's values. They discuss what impact coherence has on each of these aspects of our self-understanding, and through which cognitive mechanisms this impact is achieved. This helps detailing a basic circularity between behavioral stability and personal identity: coherence of conduct plays a crucial role in strengthening one's self-image, and in turn a robust self-image is likely to improve coherence of conduct. Sadly, this wheel might spin also downward: lack of coherence is easily taken as diagnostic of poor personal qualities, and the resulting blow in one's self-image is likely to further undermines one's coherence of conduct.

Fabio Paglieri explores another set of strategies to improve self-control and persistence over prolonged periods of time: the use of various forms of external constraints, designed to prevent unwanted changes of preferences or to impede acting upon them, as in the famous episode of Ulysses with the Sirens (Elster 1979, 2000; VanFraassen 1984, 1995; Schelling 1984). Paglieri argues that using external constraints to influence one's own conduct is ubiquitous and constitutes a proper manifestation of self-control, but not of willpower. He analyzes the difference between these two concepts and the possibility of considering the use of external constraints as a way of externalizing self-control, in the vein of the extended mind hypothesis (Clark & Chalmers 1998). He also offers two alternative game-theoretic characterizations of constraint-based self-control: either as sequential games where players have limited control over the game structure, or as enlarged standard sequential games. These characterizations have similar explanatory power and can explain some common failure at self-control via external constraints, thus suggesting possible remedies. This has deep implications for how rationality should be assessed in intertemporal decisions, i.e. choices that involve trade-offs between subsequent selves (see Parfit 1984; Van Fraassen 1984, 1995; Hájek 2005): Paglieri develops a critique of existing principles of diachronic rationality, and proposes expected utility maximization over a collectivity of temporal selves as a viable alternative.

Erik Rietveld analyzes unreflective social action, such as keeping a certain distance from others within an elevator, as being based on responsiveness to social affordances, intended as action possibilities that a given situation, person or action invite from those who perceive it: this type of affordances are presented as a sub-class of the general notion discussed, mostly with respect to object affordances, by Gibson (1979). Rietveld argues that unreflective responsiveness to social affordances constitutes a form of bodily intentionality, in the vein of Merleau-Ponty (1945) and in line with evidence from the psychology of emotions (Frijda 2007), and can account not only for skillful coping with our social environment, but also for pertinent switches from one social activity to another. According to Rietveld, this has implications for the interpretation of neuroscientific findings on the mirror neurons system, in particular for the view that our perception of objects and actions entails specific invitations to act, which are encoded in premotor areas and constitutes a form of motor intentionality (Giorello & Sinigaglia 2007; Rizzolatti & Sinigaglia 2008).

Corrado Sinigaglia discusses how motor cognition, via the mirror system, can be reused for understanding the actions of others, to what extent such reuse is selectively modulated by own and others' motor potentialities, and whether such modulation is also affected by one's space representation. After having contextualized the issue within the large literature on the mirror system and its role for action understanding, Sinigaglia presents a series of recent studies (Costantini & Sinigaglia 2011; Costantini et al. 2011 forthcoming; Ambrosini, Sinigaglia, & Costantini 2011b; Cardellicchio,

Sinigaglia, & Costantini in press), all focused on showing how the mirror activation of motor areas is modulated by the motor potentialities of the observed agent, and not only by those of the observer. This suggests that we experience not only our own body, but also the bodies of other agents as being inherently situated, that is, as a pattern of motor potentialities defined by the other's body and its position in relation to the surrounding environment. In this view, selective reuse of motor cognition via the mirror system gives us an immediate understanding of what other agents can do within the interpersonal space that we share with them.

Nico Frijda investigates how we perceive and make sense of the emotions of others, based on their behavioral display. Building on his previous work on the emotions (in particular, Frijda 1953, 1986, 2007), he distinguishes four modes of emotion recognition: situational referencing, anticipation of forthcoming action, resonance, and emotion categorization. Frijda argues that they all share the same functional core: grasping the relational intent that a certain emotional state or behavior implies. This is further spelled out in terms of states of action readiness, such as wanting to get closer to a person we love, or closing off from external stimuli when frightened, and a substantial body of evidence for that interpretation is reviewed. Finally, the role of the mirror system in emotion recognition is critically discussed, especially in relation with resonance: the author concludes that, even if such system enables the understanding of the motor components of emotional expression in relation to its target object, emotion recognition far exceeds mirror neuron activity.

Finn Spicer examines the nature of the concepts we use to think about the propositional attitudes of others, and presents his own view of propositional attitude ascriptions, called the paratactic account (PA). According to PA, in a propositional attitude ascription a person is described as standing in an attitudinal relation to a representational entity, namely, a content. In making a propositional attitude ascription, then, one refers to a content, and it does so by using a demonstrative concept, which demonstrates a tokening of the target content in one's own thinking. This view is contrasted with three alternative approaches: Peacocke's redeployment view (1999), as well as Russellian and Fregean accounts of propositional attitude ascriptions. Several arguments for the superiority of PA are offered, and an important epistemological point is put forward along the way: the idea that whatever constraints are relevant for a semantic theory of sentence understanding need not be relevant also for a psychological theory of the contents of propositional attitude ascriptions (see also Salmon 1986).

The third and last section, "Historical perspectives on consciousness in interaction", provides historical depth to the previous contributions, by tracing the roots of several key aspects of consciousness in early modern philosophy. This section comprises five essays.

Monica Riccio describes the transformation of the concept of sensation in modern philosophy, with special emphasis on the works of Malebranche and Condillac. She

details what they have in common, to wit, the idea of the fundamental passivity of the sentient subject, coupled with an internalist view of the epistemological role of sensations, which no longer have the power to reliably inform about or bear any resemblance to external objects. However, Riccio also reveals how Malebranche and Condillac arrive to such shared assumptions following very different paths and in the context of completely different theoretical systems: a re-visitation of Cartesian dualism for Malebranche, and a development of Lockean anti-innatism for Condillac. Within the present volume, these modern views of perception provide a fascinating contrast with the contemporary sensorimotor approaches discussed in the first section: whereas nowadays the dominant view of perception emphasizes its active nature and radically rejects the passivity of the sentient subject, the idea that sensations are “modifications of the soul” (in contemporary terms, phenomenological states supervening on brain activation patterns, possibly in conjunction with larger body-world loops) rather than impressions made by external entities is akin to some of the intuitions elaborated by Malebranche, Condillac, and other modern thinkers.

The transformations of the notion of consciousness in early modern philosophy is also the topic of the expertly documented essay by *Roberto Palaia*, where the uses of various expressions relating to consciousness (*conscientia*, *conscience*, *Gewissen*, *Bewusstsein*, *coscienza*) are analyzed in such diverse thinkers as Descartes, Cudworth, Locke, Malebranche, Condillac, Leibniz, Wolff, and others. This is relevant also from a contemporary perspective, since it traces back to the modern period many roots of the polysemous status of the current notion of consciousness, often noted by nowadays commentators (see for instance Chalmers 1996, as well as many contributions in this very same volume). For instance, as noted by Palaia, Cudworth’s idea that in dreams mental activity is unconscious implies a notion of consciousness as metacognitive self-awareness, which is different from the Cartesian emphasis on consciousness as subjectivity; moreover, Locke re-elaboration of the Cartesian paradigm links for the first time subjectivity to personal identity and thus makes it a prerequisite for political, legal, and moral responsibility – a topic very much actual in current philosophical debate, as the work of philosophers like Derek Parfit (1984) clearly demonstrates.

Connecting the conception of consciousness in early modern philosophy with self-hood and personal identity is also one of the key aims of *Antonio Lamarra’s* paper, which focuses on the respective roles of Descartes, Locke and Leibniz in this process. In contrast with the traditional attribution to Descartes of the paternity of the modern notion of consciousness, Lamarra sides with Balibar (1998) in considering Locke as the first author to provide an explicit and fully articulated definition of consciousness as subjective awareness. However, Lamarra also questions Balibar’s view that Locke invented this notion more or less in isolation, and highlights instead the crucial role played by Cartesian and post-Cartesian reflections on Locke’s own thought. Moreover, Lamarra details the complex theoretical triangle between

these two authors and Leibniz, who shared with Locke the idea that consciousness is necessary for personal identity, but inherited from Descartes the belief that such identity also requires a metaphysical foundation, in opposition to the lack of metaphysical claim favored by the English philosopher – and which arguably contributed to the success of Locke's philosophy of mind, and provided the epistemological background for the birth of modern experimental psychology. On the other hand, Leibniz developed a very different metaphysics of consciousness from that of Descartes, in terms of *monads* rather than a generic *res cogitans*, and also refused the Cartesian identification of the mental with the conscious, whereas Locke embraced it. The end result of this complex pattern of mutual influence was the genesis of a notion of consciousness that, according to Lamarra, constitutes an abstraction and generalization of the concept of conscience, which has much older roots in Western philosophy: whereas in the latter awareness was confined to the moral domain, in the former notion moral, cognitive, phenomenological and affective awareness are unified in a single subjective entity (the self), which in turn provides the basis for personal identity and civil rights.

A different and critical elaboration of Cartesian consciousness is discussed in the last two essays of this section, which both focus on the early works of the Italian philosopher Giambattista Vico. *Manuela Sanna* provides a lucid and comprehensive analysis of how the notion of consciousness developed in Vico's writings prior to the *Scienza Nuova*: in these works consciousness was treated in a very different way from Descartes's proposals, first by approaching *verum* to *facere* and, later, *verum* to *conformari*. This displacement occurred by means of a theoretical passage through the level of *conscire*, outlining a deep gap between *feeling* (*sentire*) and *imagining* (*immaginare*). Sanna shows how Vico's developing understanding of consciousness led him to criticize skeptic and neostoic currents, posing the question about how to become able to *feel* something while striving to *imagine* in a conscious way. According to Sanna, the whole anthropological framework which allows Vico to define the human condition is built on this theoretical passage and on the etymological reconstruction of *conscire* as *cum-scire* and of *conscientia* as a part of *scientia*.

Also *Geri Cerchiai* contrasts Vico's early views on consciousness to Cartesian rationalism, focusing in particular on *De antiquissima Italorum sapientia*, where Vico tries to examine pre- and non-reflective aspects of thought. Cerchiai outlines four key points in Vico's critique of Descartes: first, the Cartesian clear and distinct idea cannot originate the *cogito* as a criterion of truth; second, the clear and distinct idea exchanges the *intelligere* of God with the human *cogitare*; third, the method of doubt does not consider the link, in men, of *res cogitans* and *res extensa* and the correlation between mind and body; fourth, this theory arises from a wrong notion of substance. Following these four points, the article analyzes the rejection by Vico of the Cartesian notion of consciousness and reconstructs a possible theory of consciousness as it is implied by Vichian reflections: in doing so, Cerchiai also highlights several suggestive

convergences and echoes between Vico's thought and contemporary issues in the philosophy of mind, such as the active nature of perception (Hurley 1998; Noë 2004) and the embodied approach to cognition (Varela et al. 1991; Damasio 2006).

Taken together, the nineteen essays that comprise this volume are striking both in their variety and in their numerous and deep interrelations. Hopefully, they will provide a comprehensive overview of the interactive approach to consciousness and a proof of concept of its viability and fertility. Besides, this volume is part of a larger wave in consciousness studies, and interested readers will find further elaboration of interactive intuitions on specific topics in other collections originated from the same research project: most notably, the collective volume on *Perception, action, and consciousness* (Gangopadhyay et al. 2010), and the collection on *Decomposing the will* (Vierkant et al. in press), both published by Oxford University Press.

As mentioned at the onset, none of this would have been possible without the amazing intellectual experience of the CONTACT research project. For that, the Editor and all the authors would like to express deep gratitude to the national funding agencies that provided financial support (the CNR in Italy, the AHRC in the UK, and the NWO in the Netherlands), and in particular to the European Science Foundation, for running the CNCC EuroCORES programme, of which our project was a part, so competently and dynamically. Special thanks are due to Eva Hoogland, for her tireless efforts and boundless support in transforming a loose collection of researchers from different disciplines into a tight and affectionate interdisciplinary community, who thrived over dozens of wonderful meetings across Europe in the brief space of three years – too brief, in fact. Thanks also to Maxim Stamenov, the editor of the series *Advances in Consciousness Research*, for inviting us to publish our book in that prestigious context, to all the staff at John Benjamins for their support throughout the publication process, and to Manuela Delfino, for her generous help in formatting and proofreading the volume.

Of the many researchers of the CONTACT consortium, a few ended up being unable to write a paper for this collection. Nonetheless, their contribution is palpable through these pages, either because they are repeatedly cited and discussed by others, or due to the influence their ideas exerted on other members of the consortium. For that, we owe them a debt of gratitude, and the very least we can do is mentioning them here: Andy Clark, Thomas Metzinger, Ed Tan, Enrico Rambaldi, Zoe Drayson, and Alisa Mandrigin.

Most notably and most sadly, Susan Hurley could not directly contribute to this volume, due to her untimely death in August 2007 following a long struggle with cancer. This volume is dedicated to her, as it is natural: not only to celebrate with affection the premature demise of an exceptional mind and a formidable person, who was an outstanding mentor for some of us, an ever-challenging colleague for others,

and an inspiration to all; but also to acknowledge the fact that the CONTACT project, and by extension this volume, would never have existed without Susan's pivotal role. This is no exaggeration, as the following anecdote will show. It was a morning in the Summer of 2005, and at that time we were still brainstorming the essentials of our project proposal, with admittedly vague ideas on how to flesh it out. Out of the blue, Susan (who I had never met before) called me on my private phone, to discuss the possibility of bringing Andy Clark and his crew into the fold of our project. Andy had just contacted Susan, proposing her to join forces for a bid to the same call we were working on, and Susan, ever loyal and correct, informed him she was already part of another consortium and suggested him to join in too. Andy accepted, and from that moment on he and Susan acted as the catalyst who kept all of us together and, more importantly, provided a coherent rationale to the whole project. The rest, as they say, is history.

As a result, Susan's intellectual legacy is everywhere in this volume. Her work is ubiquitously cited and frequently discussed in its finer details, sometimes to express full agreement with her views, at other times to challenge and criticize them, but always with the deepest respect for the clarity and rigour of her philosophical thought. Moreover, the title of this book (and of the project from which it originated) is an intentional and fitting homage to Susan's own key monograph on *Consciousness in action* (1998). But more than any word, the picture of her (courtesy of Nick Rawlins, Susan's husband) that graces the front page of this volume will convey to those who never met her in person all the essential qualities of her mind: inquisitive, keen, precise, thorough, implacably logical and often fiercely critical, and yet with an unerring eye for the underlying symmetry that philosophy is all about. This book is for her, in loving memory.

