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Budermann, Felix

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1

Introduction

Felix Budelmann

1.1 Cognitive literary studies

Along with the cognitive humanities in general, cognitive literary studies are coming of age. What was a number of dispersed activities during the 1980s and '90s has become a thriving field, with an ever-increasing flow of publications, frequent conferences, as well as networks and research projects. In his 2004 'field map', Alan Richardson had provisionally divided the terrain into cognitive rhetoric and conceptual blending theory, cognitive poetics, evolutionary literary theory, cognitive narratology, cognitive aesthetics of reception, and cognitive materialism and historicism.¹ A similar map in 2023 would have to accord a substantial portion of space to approaches that try to get away from the notion that the mind operates in isolation, as a kind of computer in the skull. The slogan of the '4Es', which has in recent years assumed considerable currency across the cognitive humanities, emphasizes that the mind is embodied (with 'Cartesian' mind-body dualism as the go-to villain), embedded (in its various contexts), extended (to prosthetic devices such as the memory encoded in one's mobile phone or shopping list), and enactive (viz. constituted by its interaction with the environment). By labelling these approaches—both the relevant scientific approaches to cognition and in turn the approaches to the cognitive study of literature and other branches of the humanities that draw on them—'second-generation', the field has self-consciously acquired a history.²

Like feminist criticism, poststructuralist criticism, or New Materialism, cognitive literary studies, and indeed the cognitive humanities as a whole, are a set of loosely connected enterprises rather than a focused programme of research. What holds these enterprises together, and justifies the umbrella term, is a shared interest in cognition, and in dialogue with research into cognition in other

¹ Richardson 2004.

² The secondary literature on 4E cognition and the study of literature, history, and culture is already considerable. Two special journal issues provide useful points of entry from a literary perspective: Kukkonen and Caracciolo 2014a and Morgan et al. 2017. For a short account of the history of the field until 2014, see Caracciolo 2014, 16–23. The most significant publication within Classics is the antiquity volume of the *Edinburgh History of Distributed Cognition* (Anderson et al. 2019), which includes introductions to the study of distributed cognition in the humanities in general and Classics in particular.

subjects. It is important to recognize how loose this definition is. Cognition itself is understood very broadly, and has, with the dismissal of computational models of the mind, ceased to stand in opposition to affect: emotions, intuitions, and contextual embedding are all within the remit of cognitive studies, so long as there is a focus on the way agents acquire knowledge of their environment and negotiate their place within it. The particular ‘cognitive’ subjects, moreover, with which cognitive literary studies enter into dialogue, form themselves a wide range that includes philosophy and linguistics as much as neuroscience and cognitive psychology, and the ancestry of the cognitive humanities includes not just fields of study in the sciences but also reader-response criticism in literature and phenomenology in philosophy. For its part, psychology, which has a prominent presence in the cognitive humanities, more prominent certainly than neuroscience,³ opens the door to the social sciences because the dividing line between cognitive and social psychology is often blurry. With this multiplicity of associated disciplines comes a variety of modalities. The engine of much of the work is, as it should be, what scholars of literature are good at—reading texts and exploring issues of methodology—but cognitive literary studies also draw on, and occasionally produce, empirical findings, ranging from psychological questionnaires to fMRI scans. The texts studied are both literary and theoretical, and the work produced variously puts forward readings of specific texts or makes systematic claims about literature and literary reading. Some cognitive critics build on poststructuralism while others position themselves in opposition, some home in on specific texts and their contexts while others foreground transhistorical developments. Even in its second generation, this is still very much a field in flux. A number of thoughtful critiques of the aspirations and achievements of cognitive literary studies are not just testimony to a sense of incipient establishment, but also an indication that a great deal remains to be worked out.⁴ It will be a theme of this Introduction that much of the best work in cognitive literary studies has an air of adventure and experimentation.

Classics has been catching up fast with the cognitive humanities—the publication of three wide-ranging collected volumes in 2018 and 2019 representing a significant milestone—but it is too early still to speak with confidence about the particular shape cognitive literary studies, or indeed cognitive studies in general, will take in Classics.⁵ One tentative suggestion may perhaps be made neverthe-

³ The limited role of neuroscience in cognitive literary studies is bemoaned by Armstrong 2013. His book is a good starting place for thinking about what is and isn't possible. More has been done with performance than with matters of interpretation; see e.g. Falletti et al. 2016.

⁴ For early critiques see Adler and Gross 2002 and Jackson 2003. A more recent account of the challenges faced by the field is Bruhn 2011, and with a focus on spectatorship see McGavin and Walker 2016, ch. 2. Alber et al. 2018 present critical dialogues between cognitive and ‘unnatural’ narratologists. The fullest critical assessment in Classics to date is Sharrock 2018.

⁵ Three volumes: Lauwers et al. 2018, Anderson et al. 2019, Meineck et al. 2019b. For a bibliography of relevant work see <https://cognitiveclassics.blogs.sas.ac.uk/>, which permits some tentative

less: arguably, cognitive frameworks feel less radical and less of a deviation from normal scholarly practices in Classics than they do in some other humanities disciplines, for two reasons. One is that many of them have precursors in antiquity.⁶ Aristotle, with his interest in mimesis and in the formal means that tragedy and epic use to create certain psychological effects, might be regarded as a forerunner of cognitive criticism,⁷ and the point is often made that much ancient psychology is less dualist, and in that sense more in line with current thinking, than the ‘Cartesian’ model that dominated modernity for a long time.⁸ Neither the notion that literature is usefully thought about in terms of mental processing nor the idea that the mind is embodied marks a major change for classicists. The second reason is closely related. Compared to English or Modern Languages, Classics rarely challenges the prevalence of the implicit model according to which the criterion for assessing a reading is whether it is one that (typically ancient, sometimes modern) readers and audiences would have accepted. Radically impersonal and decentred intertextuality à la Kristeva, for example, never properly took hold, especially among Hellenists, and the relation between texts is normally thought of, though not necessarily articulated, as a connection in the mind of the reader (variously conceived) or sometimes the author.⁹ Only rarely does intention altogether leave the picture, even though it usually remains unnamed. In some ways, therefore, cognitive criticism is simply an extension of what classicists like to do with literature anyway. This creates the need to guard against serving old wine in new bottles, but it is also, and above all, an opportunity for sharpening, testing, and extending long-held critical instincts and adding conceptual robustness.

1.2 Greek tragedy and cognition

The majority of collected volumes and special journal issues in cognitive literary studies define their remit in terms of a specific approach or theme, which they explore across a mixed group of texts. Recent examples include: cognitive literary studies and the ethical and pedagogical function of literature, dialogues between

observations, e.g. the prominence of work on metaphor, and the co-presence of first- and second-generation work (on which see further pp. 6–7 below). See also the accounts in Cairns 2019 and Meineck et al. 2019a. Some areas within Classics, notably philosophy and religion, and perhaps also archaeology, have distinctive, and more established, profiles in their modes of engagement with cognitive science.

⁶ Cf. the related remarks, and references, in Cairns 2019, 18–20.

⁷ Note for example the prominence of Aristotle in Lowe 2000.

⁸ See especially Gill 2019, 156–62, comparing embodiment in ancient Stoicism and modern enactivism, and Ostenfeld 2018, who makes the case for the distinctiveness of Aristotle and Plato when viewed in the context of the modern mind–body debate.

⁹ These are of course tendencies rather than universal norms; for key references see Baraz and Van den Berg 2013, 2–3.

unnatural and cognitive narratology, situated cognition and culture, continuities and breaks between cognitive, aesthetic, and textualist approaches to literature, theatre and cognitive neuroscience, second-generation cognitive approaches to literature, and the intersection of cognition, literature, and history.¹⁰ In leaning the other way—specific corpus but varied themes and approaches—this volume is not altogether alone, but the decision requires explanation.¹¹ In part, we are responding to the state of the field within Classics: we hope that *Minds on Stage*, as well as contributing to the study of Greek tragedy, may serve as an introduction to cognitive literary studies for classicists by showcasing, in the context of a specific and well-known corpus, a wide range of approaches (and it is for the same reason that a sizeable portion of this Introduction is devoted to general methodological issues).¹² What is sacrificed by way of focused investigation of a particular aspect of cognition is gained, we suggest, by enabling a view of tragic cognition in the round and providing access to what is still an emerging field.

For more than one reason, Greek tragedy is an obvious choice for such a volume. Drama and performance (above all Shakespearean) have long been a particularly dynamic area in cognitive literary studies. Early pioneering work by individual scholars, notably Ellen Spolsky and Mary Thomas Crane, eventually led to the first multi-author volume in 2006 and the first general treatment of cognition and spectating soon after.¹³ We now have two dedicated series, Bloomsbury Methuen's *Performance and Science* and Palgrave Macmillan's *Cognitive Studies in Literature and Performance*, which range across performance, language, character, embodiment, intertextuality, consciousness, emotion, memory, kinesic intelligence, and more, and at the time of writing stand at nine and twenty-one titles respectively, as well as a *Routledge Companion to Theatre, Performance, and Cognitive Science*.¹⁴ More important, some of the most creative and methodologically astute thinking in cognitive literary studies has emerged and is still emerging from work on drama and performance. Apart from Spolsky's continuing contributions, the work of Raphael Lyne, on rhetoric, metaphor, and intertextuality in Shakespeare and beyond, and Evelyn Tribble, on memory and

¹⁰ Bruhn and Wehrs 2014, Kukkonen and Caracciolo 2014a, Falletti et al. 2016, Morgan et al. 2017, Stoppel 2017, Alber et al. 2018, Easterlin 2019.

¹¹ Edited volumes with similar kinds of scope include *Shakespeare and Consciousness* (Budra and Werier 2016), *Cognitive Joyce* (Belluc and Bénéjam 2018), and *Cognition, Mindreading, and Shakespeare's Characters* (Helms 2019).

¹² In that respect, it resembles Meineck et al. 2019b, but with a literary, and indeed corpus-specific, rather than general Classics remit.

¹³ Spolsky 1993, Crane 2001, Spolsky 2001; Spolsky's work in particular is wide-ranging, and goes far beyond drama. Multi-author volume: McConachie and Hart 2006. General treatment: McConachie 2008. For a slightly fuller account of the history of cognitive approaches to drama and performance up till 2016, see Blair and Cook 2016, 11–13.

¹⁴ Kemp and McConachie 2018.

attention in early modern theatre-making, may be singled out, but this is altogether a remarkably vibrant field.¹⁵

For its part, Greek tragedy, as a much-read corpus, well-furnished with editions and commentaries and not in need of spadework, has long served classicists as a testing ground for new methods. All major theoretical developments of recent decades have spurred work on Aeschylus, Sophocles, and Euripides, in many cases earlier and more extensively so than for other Greek authors, and indeed a body of cognitive criticism has been steadily building up for several years now. With hindsight, the first important contribution was probably N. J. Lowe's cognitively inflected treatment of the classical plot, with a chapter on tragedy.¹⁶ Since then, Ruth Scodel, Felix Budelmann, and Pat Easterling, as well as Ineke Sluiter and colleagues, have drawn on Theory of Mind to discuss how characters are interpreted by the audience and interpret one another, Colleen Chaston has explored the cognitive function of props, and Douglas Cairns' wide-ranging work on metaphor and the emotions has covered tragedy alongside other genres.¹⁷ Peter Meineck surveys a range of cognitive approaches in his book-length account of the affective powers of Greek drama in performance, and a variety of approaches is on display also in the tragedy-related chapters in the three recent collected volumes, discussing, respectively, synaesthesia, metaphor, madness, emotion, the mask, collective cognition, and attention.¹⁸ The cutting edge in cognitive criticism continues to be located outside Classics, but classicists, and not least so scholars of Greek tragedy, have been working to close the gap.

It is unsurprising that Greek tragedy is proving fertile ground for this kind of work. Minds play a large role in the genre, both those of the characters and those of the spectators. The characters' cognitive achievements and more often limitations are almost constantly in the spotlight, emblematically so in recognition and deception scenes and in the interpretation of oracles. For their part, the spectators know more than the characters but can themselves be subtly misdirected, have to come to terms with events that are deeply disturbing ideologically and existentially, and, most fundamentally, have to 'suspend disbelief' to turn a man with a mask into Helen of Troy. Both dimensions are well-represented in this volume, and often it is precisely the combination—character cognition as an object of audience cognition—that provides the critical fulcrum.

Between them, the chapters presented here discuss many of the major topics in the study of Greek tragedy, grouped into three parts. Part I tackles the notions of

¹⁵ Lyne 2011, Lyne 2016, Tribble 2011. ¹⁶ Lowe 2000, ch. 8.

¹⁷ Scodel 2009, Budelmann and Easterling 2010, Chaston 2010, Sluiter et al. 2013, Cairns 2016 (which synthesizes several strands of Cairns' work), Cairns 2020.

¹⁸ Angelopoulou 2018, Dobson 2018, Meineck 2018a, Meineck 2018b, Budelmann 2019, Meineck 2019, Noel 2019b, and (in a fourth volume) Budelmann and Van Emde Boas 2020. Note also the primarily linguistic pieces, some of them cognitively inflected, in Martin et al. 2020, and cognitive approaches make several appearances in De Temmerman and Van Emde Boas 2018a.

character and characterization, exploring the ways in which spectators make sense of characters, and characters make sense (or fail to make sense) of one another. The section opens with a theoretical discussion (2), followed by two essays focused on individual plays (3, 4). Part II homes in on specific cognitive modes of relating to one's surroundings, and discusses causation and motivation (5), memory (6), and the relationships characters form with inanimate objects (7). Touched on intermittently throughout the volume, the cognitive dimensions of performance and spectating become the focus of study in Part III. A pair of chapters on make-believe and engagement with theatrical fictions (8, 9) is followed by an essay on communal spectatorship (10), and the final two contributions discuss the steering of audience expectation in terms of, respectively, genre (11) and conceptual frameworks (12). (See below, pp. 18–21, for summaries of each chapter). An alternative mode of categorizing the contributions, and articulating their variety, is by cognitive approach taken or discussed. Several engage aspects of *cognitive psychology*—Theory of Mind (chs 2, 3), mental imagery (9), joint attention (10), situated cognition (12), predictive processing (11)—whereas others look to forms of *social psychology*: attribution (5), memory (6), anthropomorphism (7). A further group draws on more conceptual work that comes out of *philosophy and other humanities thinking*: prototype theory (11), image schemata and blending (4, 8), thing studies and extended cognition (7), as well as enactivism (9).¹⁹

This (inevitably schematic) list of approaches prompts two observations. First, it is obvious that the definition of 'cognitive' adopted in this volume is capacious even by the traditionally capacious standards of the term. Social psychology is cognitive only in a loose sense, and the same is true for thing studies, which often sit under the umbrella of posthumanism. In part, our motivation has been breadth of coverage, but a further consideration is equally important. The prominence that Greek tragedy accords to the minds of characters is to a large degree generated through social interaction: it is above all when the characters observe, deceive, accuse, pity, and resist one another that their cognitive efforts, achievements, and failures command our attention. The world of Greek tragedy is an essentially social one, and the appeal to the knowledge and methods of the social sciences is a natural response to this sociality.

The second observation points in a similar direction. A number of chapters (esp. 7, 9, and 12) employ one or another of the 4E frameworks that have been so influential in the cognitive humanities recently (see above), but several others revisit concepts, such as Theory of Mind and image schemata, that were well-established already at the time of Richardson's 2004 field map mentioned earlier. Here, too, the aspiration of the volume to provide a broad purview of different cognitive tools is a factor, but again there is a further consideration. The

¹⁹ What is not represented is (a) empirical work on responses to classical texts, such as Budelmann et al. 2016 and Van Emde Boas (forthcoming), and, except in passing, (b) neuroscience (cf. nn. 3 and 22).

‘second-generation’ approaches constitute a response to a narrowly mind-centred view of cognition, which pays scarce attention to bodies, physical environments, and other people. It is perhaps in part because the more extreme versions of such a view have never achieved real dominance in Classics, as indeed they would be alien to most ancient thought, that classicists can still find value in earlier frameworks at the same time as engaging with the 4E agenda. For classicists, embodiment and contextualization are a given more often than they need to be defended against internalism.

1.3 Questions of methodology

The continued fluidity of cognitive literary studies is such that methodological questions are never far below the surface, in this volume as elsewhere, and this indeed is one of the attractions of the field. In the remainder of this Introduction, I will discuss four of the central issues. While the primary focus will continue to be on cognitive literary studies, several aspects of the discussion apply to the cognitive humanities more widely. The tone will be exploratory, as I believe circumstance demands.

1.3.1 Cognitive ‘theory’ and cognitive ‘science’: ideas or claims to firm knowledge?

The epistemological status of cognitive criticism requires little elaboration where the body of work that is being engaged is speculative or theoretical—such as for example Fauconnier and Turner’s ‘conceptual integration theory’, which makes several appearances in this volume. Here it is self-evident that the truth claims of the resulting argument will be no different from those in other articles published in literary studies. Some contributors in fact flag the non-empirical nature of the material on which they draw by using the label ‘cognitive theory’ rather than ‘cognitive science(s)’ (and I am using ‘cognitive studies’ as a neutral term in this Introduction). Such kind of cognitive literary work shares an interest with the scientific study of the mind—cognition—but does not share its epistemology, and like all literary criticism should be judged for its coherence, rigour, and interest.

The issue becomes more complicated where evidence-based findings are involved, as is the case in empirical studies of readers’ responses to literary texts and, above all, in literary discussions that draw on empirical work in psychology and neuroscience.²⁰ Undeniably, part of the appeal of the cognitive humanities

²⁰ For the former, there exists a dedicated journal, *Scientific Study of Literature*. See also n. 19 above, and beyond literature the field of ‘neuroaesthetics’.

derives from the engagement with empirically obtained observations and the attendant truth claims. For some, in fact, this appeal is bolstered by the hope that the empirical grounding of science can be mobilized to overcome the perceived excesses of poststructuralism, but one does not need to be motivated negatively in this way to be intrigued, even excited, by the sense of solidity gained from dealing with scientific evidence.²¹

Yet any such excitement needs to be tempered by caution. When literary scholars draw on a 'hard' finding, the claims that they are themselves able to make will for two reasons often be rather soft. First, the data need to be interpreted. A finding itself may be beyond doubt (typically because it recurs when the experiment is repeated) yet its interpretation may not. The debate over 'mirror neurons' is a good illustration: while it is a fact that some of the same neurons are activated both when we observe and when we carry out a particular action, the extent and the interpretation of this phenomenon, known as 'motor resonance', are much less certain. Mirror neurons are fascinating to anybody interested in theatre because they might seem to explain why seeing a play (or watching a ballet, or perhaps even reading a book) can be such a vivid experience, but they only go so far. The connection between neural activity and conscious experience is elusive at best, and at the non-neural, phenomenological level, there is certainly a substantive difference between the experience of doing something oneself and seeing or imagining somebody else do it. Mirror neurons are useful as an emblem of the intricate ties between motion enacted and motion perceived, and suggestive as traces of the pre-conscious dimension of action, but they do not give us a shortcut for capturing, let alone explaining, the experience of theatre-going. For scientists, mirror neurons are a subject of fast-moving research programmes and lively debate. For scholars in the humanities, they are best taken not as a ready explanation but as an impetus to exploration, and *mutatis mutandis* the same is true for many other empirical observations about cognition.²²

A second reason for tempering one's excitement about cognitive truths is that the gap between the 'hard' findings on offer and many of the issues that concern literary scholars when they think about Greek tragedy is huge. Even though the scientific understanding of cognition has grown at an immense pace in recent

²¹ The idea that cognitive science provides ammunition against poststructuralism was important mostly in the earlier stages, and has receded as the field has developed and the influence of poststructuralism waned across the humanities. See for example Richardson and Steen 2002, 1–2, introducing an early special issue on cognitive literary studies, and the rejoinder by Adler and Gross 2002, 202. Notably, however, already at that stage Spolsky 2002 was looking for interactions between cognitive science and poststructuralism, an aspiration she has restated since.

²² Mirror neurons are briefly discussed in this volume by Grethlein, pp. 158–9. For a balanced review of the evidence with a view to spectatorship, see Garner 2018, 145–84; see also the index of Falletti et al. 2016, *s.v.* 'mirror neurons'. Banks and Chesters 2018 is an excellent collection of essays exploring Renaissance literature, including drama, through the lens of kinesic intelligence. Uithol et al. 2011 usefully discuss the different uses of the term 'resonance' in the literature.

years, science still has a long way to go before it will be able to answer many of the complex questions that might interest the literary critic. What exactly happens in our brain when we hear an allusion? What difference does alliteration make to the way a line of verse is processed? What is the neuroscientific basis of make-believe? We do not know. Considerable creativity as well as restraint are therefore required for making meaningful as well as defensible connections between the scientific article one reads and the tragic text.

Does all this mean that, for better or worse, in the final reckoning cognitive studies *always* offer ‘just’ another set of ideas, even if those ideas are derived from scientific knowledge? I believe that different views can legitimately be taken on this issue. One way of testing one’s sensitivities is by asking whether a discussion of a literary text is invalidated if an apparently secure empirical finding on which the analysis rests is subsequently revised—by no means a far-fetched scenario in view of the speed at which cognitive science is moving, and indeed topical in view of the ‘replication crisis’ in psychology.²³ On the one hand, it would be perverse to claim that there will be no difference. The cognitive sciences offer literary scholars knowledge about the functioning of the mind that may be used to produce better grounded and more finely nuanced thinking about the minds of authors, readers, characters, or performers. If such knowledge is superseded by subsequent research, the use we make of such knowledge in our thinking about literature must inevitably be affected (and nothing wrong with that, so long as the provisionality of many scientific findings, and new findings especially, is always kept in mind—such is the development of knowledge in the sciences as indeed in the humanities). Despite the importance of interpretation that I have emphasized, there surely is a difference between a reading of a tragedy, or a theory about the workings of theatre, that appeals to scientific fact and one that appeals to (for example) aesthetic judgement—both have their place but they are not the same—and it therefore cannot be without consequence if apparent fact stops being fact. On the other hand, much depends on how a particular scientific finding is being used for literary purposes. Literary critics have been employing psychoanalysis productively long after mainstream psychologists had turned their backs on it and Freud had become a no-no. Many examples could be cited of exciting work by classicists that draws inspiration from a body of thought without committing to the factual truth of that body of thought. There is no reason why a version of this cannot be the case with cognitive science: if contemplation of scientific research allows us to see more in a text, or if scientific research stimulates us to devise new approaches to texts, what we have seen or what approaches we have devised will not disappear if the scientific research is challenged.

²³ The replication crisis was sparked when a study that attempted to replicate a number of famous experiments failed in half of the cases. For an account, see Shrout and Rodgers 2018.

Arguably, then, the most important conclusion is that cognitive criticism needs to strive for maximal methodological clarity—about the nature of the cognitive material used, the nature of the connections made, and the nature of the conclusions drawn.²⁴ ‘Ideas or factual truths?’ is a good question to ask exactly because the answer, at least in the current state of the field, needs to be worked out afresh for each cognitive-literary engagement.

1.3.2 Modes of variation: universality or cultural specificity?

It is a truism that the study of cognition, whether in philosophy, psychology, neuroscience, history, or literature, will always involve the balancing of universality and (cultural, individual, etc.) specificity. The particular balance depends on the aspect of cognition that is being studied—ethical values vary more substantially than fight-or-flight reflexes—but as already the Greeks knew, a balance there always is.²⁵ In fact, the idea of ‘balance’, and indeed the binary casting of the question in the section header, are probably simplistic, and it may be better to think of the relationship in terms of a system: for the cognitive critic, as for the cognitive scientist, the issue is not just how to weigh unity against diversity but also how to tackle what is a complex and dynamic system. A person’s physiology (which itself combines universals and specifics), the family environment, the multiple cultural contexts, and indeed the circumstances of the day all interact, with continual and mutual feedback, and interact differently on different occasions.²⁶

All that said, it is undeniable that cognitive scientists, while properly conscious of variation and alive to the pitfalls of generalization, typically pursue generality over specificity. This is a question not of intellectual conceptualization (how should cognition be conceived?) but of priorities (which dimension of cognition do I shine my torch on?): different disciplines set out different stalls. Where then does that leave the humanities? In general, the aim must surely be to experiment with humanities-specific versions of the dynamic system of the particular and the universal, and to regard the universalizing perspectives not as a threat but as a way of sharpening the grasp on specificity. Being able to articulate what stays the same, or at least recognizably similar, not only provides one of the ingredients necessary for thinking about why we can relate to works that are almost 2,500 years old but also allows us to identify with more precision the nature and the

²⁴ For an astute and interesting perspective on the issues in this section see Spolsky 2015, xxix–xxxi.

²⁵ The varying balance is described for a number of case studies in Lloyd 2007. For classical Greece, the exploration of ethics in the *Republic* and the *Nicomachean Ethics* are outstanding examples.

²⁶ In an attempt to deal with this kind of complexity, psychologists have started to adopt dynamical systems theory (e.g. Hotton and Yoshimi 2010 and Buhrmann et al. 2013).

scale of the changes. Cultural change and cultural specificity become more salient, and are more easily grasped, against the backdrop of continuity.

It can be no surprise, therefore, that the cognitive humanities have risen enthusiastically to the challenge of thinking cognitively and historically at the same time. Richardson's field map included as one of its areas 'cognitive materialism and historicism', which has if anything grown further since 2004, such that the 2015 *Oxford Handbook of Cognitive Literary Studies* made 'cognitive historicism' the opening section.²⁷ Under the influence of the 4Es—one of them 'embeddedness'—attention to the situated nature of cognition, including cultural and historical contexts, has become axiomatic.²⁸ This volume is altogether typical in that it contains several chapters that are concerned with specifics, cultural and otherwise, and relatively few if any that make claims to undiluted universality. Grethlein, for example, elaborates how, despite noteworthy overlaps in other respects, the importance of deception distinguishes fifth-century BCE Greek notions of fictionality from their twenty-first-century cognitive counterparts, and Corthals and Sluiter compare Neoptolemus' predicament at the beginning of Sophocles' *Philoctetes* with a famous mid-twentieth-century psychological experiment and its twenty-first-century cognitive reinterpretation, exploring cross-culturally recognizable cognitive patterns as well as their situatedness in their respective cultures.

Cultural specificity, then, has a secure place in the cognitive humanities,²⁹ but it is worth drawing attention also to a different form of specificity, one that I have only mentioned in passing so far but of which psychologists in particular are keenly aware: the variation among individuals within a single group or culture. Individual difference is the bread and butter of some forms of psychology (witness journals like *Personality and Individual Differences* and *Journal of Individual Differences*),³⁰ but can be difficult to come to terms with in the study of culture. In Classics and elsewhere, the focus on context that provides the basis of cultural history and that has been so successful in counteracting unthinking transhistorical generalization also about literature, can obscure equally significant differences from person to person. The major reason no doubt is the nature of the evidence: the historical record gives us relatively little to go on when we want to

²⁷ Zunshine 2015, 13–81. See also two edited volumes, Zunshine 2010 on 'cognitive cultural studies' and Bruhn and Wehrs 2014 on 'cognition, literature, and history'.

²⁸ See esp. the special issue on 'situated cognition and the study of culture', Morgan et al. 2017.

²⁹ This is not to say that *all* cognitive humanities work pays specific attention to cultural factors. A primary focus on universality characterizes above all evolutionary approaches to literature ('literary Darwinism'), e.g. Carroll 2004, Gottschall 2008, Boyd 2009, Carroll 2011. Those are not represented in this volume, and have a somewhat uneasy relationship with mainstream cognitive literary studies; see e.g. Richardson 2004, 12–14.

³⁰ It is true that the study of individual difference is at home above all in social psychology (as indeed the *Journal of Individual Differences* and *Personality and Individual Difference* are social psychology journals), but cognitive psychologists, too, focus sometimes on individual difference; for a discussion addressing some of the methodological issues see Seghier and Price 2018.

talk about, for example, individual variation among the audience at the Theatre of Dionysus—almost the inverse of the issue faced by psychologists studying audience response, who can find it difficult to get beyond the overwhelming variation. Perhaps, one might suggest, individual variation within the literary texts, while hardly a compensation, may nevertheless provide fertile material for thinking about the place of individual variation in our account of cognition in antiquity. Greek tragedy, with its strongly drawn personalities, even if one sees them as growing out of types, would be a case in point. Individual variation, though not necessarily under that name, certainly comes to the fore in several chapters of this volume. Van Essen-Fishman, for example, studies the individually different ways in which certain friends and foes recall Ajax, and Scodel looks at the rather different ways in which Antigone and Ismene explain the causes of their actions.

I end this section with two illustrative images that sketch two possible (and indeed compatible) modes of thinking about the relationship between the universal and the specific in cognitive criticism, by no means the only such modes, but each of them significant and instructive. The first is that of the critic as doctor.³¹ The gold standard of evidence-based medical research is the randomized controlled trial: randomization minimizes bias, and comparison with a control group allows certainty in concluding that the observed effects are to be attributed to the treatment that is being tested. (Cognitive and social psychology use very similar methods.) Randomized controlled trials establish how a treatment works for a particular type of patient, but this patient is of course a statistical construct rather than an individual, and the doctor who treats the individual will need to combine her statistical knowledge with her knowledge about the medical history, the circumstances, and perhaps the personality of the patient to ascertain the desirability and efficacy of a particular medical intervention. Her job is not a precise scientific undertaking but a necessarily messy weighing-up of possibilities that will often involve a good deal of judgement. This is the kind of messiness and need for judgement that confronts the cognitive literary critic who tries to determine the relevance of a particular finding from the cognitive sciences for a particular character in a Greek tragedy. There is no easy way of ‘applying’ cognitive science to Greek tragedy, but as for the doctor treating the patient, this does not mean that it is impossible or that we should not try.

The second illustrative image, borrowed from Terence Cave, is that of the ‘cognitive archive.’³² In so far as literary works prompt, and reflect on, acts of cognition, Cave argues, the literary archive is also a ‘cognitive archive’ that provides cognitive case histories—‘histories of pathologies and deficits, off-scale instances,

³¹ I owe this analogy to my fellow editor.

³² Cave 2017. This article arguably is the most searching discussion of the relationship between universality and history in cognitive literary studies to date, and I am not here providing a full account. The quotations are from p. 243 and the abstract.

one-offs, delusive texts, all produced by the human mind, all lending themselves to interpretation as symptoms or traces, all indicating possibilities and constraints across the whole cognitive spectrum.’ Literature yields to the cognitive critic a wealth of different, individually situated, instances of imaginative thinking about cognition, which collectively provide material for tracing ‘a history of cognition and reflection on cognition.’ Studying literature as a cognitive archive, as a storehouse of moments of reflection on cognition, involves a form of literary interpretation that is conscious of cognitive universals while also attending to the way these universals are contingently shaped by each text. For all its universal properties, cognition will always manifest itself in historical specificity, and as such invites historical study.

The answer to the question in the section title, then, is ‘both, of course!’—the truism with which I began—but how this is so varies from text to text and interpretation to interpretation. All work in the humanities, including all literary interpretation, grapples with permutations of the dialectic between the unique and the general (the thwarting of generic expectations, the development of authorial style, metrical variation, etc.). Engagement with cognitive approaches further expands this range of permutations, and with it the scope for creativity. The concern that the universalizing impetus of cognitive science is bound to render work in the cognitive humanities reductive is unfounded, but the issues raised by this anxiety are hardly trivial, and it would be wrong to pretend that there is no tension here. The task for the cognitive critic is to make the tension a creative one.

1.3.3 The ‘what’ and the ‘how’: does cognitive criticism generate new readings?

There is little, perhaps, that is more intimately familiar to us than cognition. It is constant acts of cognition, after all, that give us our experience of self and world. We know viscerally (to use a bodily metaphor) how it feels to wonder, expect, touch, hate, or see. This is why, despite the dramatic scientific advances over the past two decades, cognitive studies more often than not give us ‘merely’ a better grasp of something that at least *in nucleo* already feels familiar. This is not to say, of course, that cognitive science does not produce striking discoveries and shifts in our understanding, especially in areas where our intuitive sense of the operation of the mind—our ‘folk psychology’—is systematically mistaken. (The gradual dismantling of the deeply ingrained body-mind dualism is perhaps the most obvious example, which has in turn fuelled self-consciously provocative philosophical thought experiments, such as Andy Clark’s notion that we should think of the mind not only as embodied but as extending to the tools that support our cognitive activity). Nonetheless, and in contrast for example to poststructuralism, cognitive studies rarely lose touch with our experiential understanding of how we

relate to our environment—they elaborate, highlight, explain, and indeed correct, but they usually are, somehow, compatible with the instincts that we derive from day-to-day experience.

It is this rootedness in our experience of self and world that makes cognitive criticism gravitate away from against-the-grain readings or interpretations that uncover hidden meanings, and that has given rise to a long-standing debate, taken up in this volume by Carroll (pp. 64–5), over whether new readings can ever be an aim of cognitive literary criticism. Should cognitive critics rather keep to questions of *how* meaning is achieved and stay clear of what has been the core activity of the literary critic since New Criticism, the uncovering and elaboration of *what* a text means? Not just those sceptical of cognitive literary studies, but cognitive literary scholars themselves take different views.³³ I here try to articulate a defence of cognitive criticism's ability to generate readings, a defence, however, that comes with qualifications.

Before getting onto the 'what', we should note that the 'how' is indeed undeniably a strength of cognitive literary criticism; several chapters in this volume attend to mechanisms, processes, and means. A major contribution made in this respect by the various cognitive disciplines, no less important than empirical findings, is a rich conceptual vocabulary, such as 'joint attention' and 'conceptual blending' in Duncan's and Gołąb's discussions of modes of fictionality and spectatorship, or 'image schema' in Carroll's analysis of metaphor. In some cases, such concepts re-frame and thus re-validate beleaguered notions. 'Theory of Mind', which is central to Murnaghan's and Van Emde Boas' chapters, has for a while now helped to reinvigorate the study of character by shifting the focus from the ontology of the character to the mind of the spectator who reads the character (a shift, however, that, as Van Emde Boas' discussion draws out, is conceptually less straightforward than has sometimes been made out).³⁴ Less widely assimilated in the humanities, but no less effective, is 'attribution', marshalled here by Scodel to discuss motivation and causation.

³³ Good entry points into this debate, apart from Carroll's chapter, are Caracciolo 2016a and Willemsen et al. 2018. An example of the sceptical position is this quotation from Henrik Skov Nielsen in Kukkonen and Nielsen 2018, 477: 'The conclusions arrived at by means of these protocols for interpretation [= cognitive narratology] often seem from an unnatural [viz. narratology] point of view unsurprising and unspectacular (indeed, bordering on the trivial) because they often run the risk of stating what is immediately clear to any even remotely competent reader'. Within Classics see the remarks of Sharrock 2018, 26.

³⁴ In Classics, see Scodel 2009, Budelmann and Easterling 2010, Scodel 2012, Sluiter et al. 2013, and Scodel 2015, and the partly sceptical position of Grethlein 2015, but note the earlier work of, among others, Palmer 2004, Zunshine 2006, and Herman 2008. The terminology, and with it the conceptualization of the phenomenon itself, are debated, and 'Theory of Mind' is in this Introduction used simply as a convenient shorthand. Alternatives include 'social cognition', 'mindreading', 'mentalizing', and 'intentional reasoning'. For an interesting exploration of the conceptualizations from a literary point of view, see Chesters 2014.

Cognitive literary studies, then, certainly offer something other than new readings, and it would be a mistake to judge them only by their success or otherwise in contributing readings. However—and this is a second response to the ‘no cognitive hermeneutics’ challenge—it is simply not the case that cognitive critics have to drop the ‘what’ as they explore the ‘how’. Not only Carroll, who develops an interpretation of Pelasgus’ metaphors specifically to show that cognitive literary studies have as much to say about the ‘what’ as the ‘how’, but in fact the majority of the chapters in this volume, build their discussion around readings, readings that are often closely entwined with questions of ‘how’, but readings nevertheless. In several of these chapters, the critical move that opens up the text is the focus on the minds of the characters—a text-immanent study of cognition—but Grethlein’s metapoetic reading of the Paedagogus’ false messenger speech shows that there are other possibilities. Those readings vary between the ‘cognitive-light’ and the ‘cognitive-heavy’, and they differ also in their chosen attitude towards the cognitive material: most look for a fit, but Noel’s and Van Emde Boas’ chapters show that just as much intellectual energy can be generated by an exploration of the gaps. Behind these differences sits the dual quality of literature as both like and unlike life, which allows critics to choose their stance, alternatively leaning more on the match or the mismatch between cognition in everyday life and cognition in literature. Both are real, and both can engender fresh readings.³⁵

Ultimately, I suggest, the most pertinent response to questions about the feasibility of cognitive readings is that much depends on what we mean by ‘readings’. Carroll in his chapter is surely right to argue that the distinction between the ‘how’ and the ‘what’ is fuzzy at best. Not only that analysis of *how* a text creates meaning will often lead to, in fact require, careful thought about *what* meaning is created, but there is a specifically cognitive dimension to this. In cognitive literary criticism investigation of the ‘how’ need not be simply a matter of stylistics or even poetics but can soon draw one into fundamental questions of human cognition. The ‘how’ of cognitive literary studies is always, at one level, a question about how humans register and interpret their environment, and here issues of meaning are never far off. (When Scodel, for example, writes about the way Antigone and Ismene explain their own and each other’s actions, is she engaged in a study in ‘how’ or in ‘what?’). Cognitive literary criticism, then, doesn’t and shouldn’t abandon the project of producing readings. Rather, what deserves attention, and what will, one hopes, continue to give rise to fresh thinking in the field, is the nature of those readings. In this respect cognitive criticism is in fact part of broader trends in recent literary theory, where the widely shared sense that hermeneutics narrowly conceived are not enough has led to experimentation with alternatives. Above all perhaps, there is the ever-growing interest in the ethics of reading,

³⁵ For the importance of giving sufficient attention to the mismatch, see e.g. Kukkonen 2019, ch. 1.

a development that started with feminist and postcolonial criticism and has radiated more widely since, and there is also the dissatisfaction with what Paul Ricoeur called the ‘hermeneutics of suspicion’—readings that seek to expose hidden ideologies in a text—which has prompted, *inter alia*, experimentation with ‘surface reading.’³⁶ Cognitive literary criticism may usefully be understood as contributing to this search for new forms of responding to texts, modes of response that are invested in generating readings but at the same time committed to exploring what is in fact meant by a ‘reading.’³⁷

1.3.4 Two-way traffic: can cognitive criticism give back to cognitive science?

Claims to bi-directionality are frequent in the cognitive humanities: many of those working in the field stress that the humanities, literary criticism included, have something to give back, though there is less agreement on the precise nature of the putative contribution.³⁸ I shall briefly sketch two broad areas where (like others) I believe that a case can be made, one concerning the humanities’ modes of thinking, the other their material.

Habits of thought in the humanities differ greatly from those in the sciences, and scholars of literature should seek ways of bringing to bear those characteristic habits also when engaging with the cognitive sciences. A convenient way of pin-pointing these differences is by focusing on the fundamental scientific method of reduction. Not just the natural sciences but also experimental psychology routinely breaks issues down into components that are small enough to permit the design of manageable experiments, and the overwhelming majority of scientific articles discuss very specific phenomena. The humanities, for which ‘reductionism’ is anathema (cf. p. 13 above), have a rather different vantage point. One issue here is integration and a broad perspective. An (admittedly ambitious) example would be consciousness. Many psychologists and neuroscientists consider the study of consciousness impossible (‘the hard problem’), but for those in the humanities—philosophers obviously, but also classicists, and indeed scholars of

³⁶ Ethical criticism: I am thinking for example of Suzanne Keen’s work on empathy, starting with Keen 2007, but ethical criticism comprises a wide range of practices. For two rather different contributions see Phelan 2007 and Macé 2013, and from the perspective of cognitive literary studies Easterlin 2019. Against ‘suspicion’: Sedgwick 2003, Felski 2015, Moi 2017. Surface reading: the foundational article is Best and Marcus 2009.

³⁷ With a view to classical literature specifically, one might add that ancient notions of interpretation themselves offer models that are radically different from those made mainstream by twentieth-century criticism. Classicists are well-placed to adopt a distinctive vantage point here. See further (also on the approaches listed in the previous note) Billings and Budelmann forthcoming.

³⁸ For a volume foregrounding bi-directionality, see Burke and Troscianko 2017; the subtitle is *Dialogues between Literature and Cognition*.

literature—it is a much more natural and useful level at which to operate than the amygdala. The humanities will not solve scientific problems on behalf of science and manage to work out the physiology of consciousness, but they can think usefully about fitting together the pieces and explore holistic perspectives.

A further issue is the humanities' habit of interrogation and interest in complexity that sits behind the aversion to reduction. Reducing an issue to its bare bones in order to make it suitable for experimentation involves strategically pushing aside complexity. For the experimental scientist or psychologist, this complexity is noise that has to be filtered out to make progress, whereas for the humanities the noise is often where the interest lies. An example of where attention to noise can be productive is what in the jargon is called 'ecological validity': the controlled lab setting or carefully constructed questionnaire is a necessary but in many cases rather imperfect replication of life, and scholars in the humanities, to whom labs and questionnaires are usually alien, are naturally sensitive to what gets lost in translation, irrespective of whether they are themselves involved in the design of an empirical study or are responding to published research. For literary critics this sensitivity will be greatest where texts are concerned—most of the texts used in empirical studies are infinitely simpler and shorter than the tragedies that are the subject of this volume³⁹—but almost any psychological questionnaire is bound to prompt niggling questions from a scholar in the humanities. Some such questions can be beside the point, but others have the potential to lead to a better understanding of what a result means and doesn't mean.

My second broad point returns to Cave's 'cognitive archive', and the notion that the humanities 'own' vital evidence for human cognition. Art, language, music, and (in this volume) literature are products of cognition. They have an important place quantitatively—we spend considerable time reading, listening to music, and so on—but above all qualitatively. Reading or watching a Greek tragedy involves highly complex and varied forms of mental processing, as we voluntarily enter a world that is not real, yet employ many of the cognitive faculties we use to negotiate our day-to-day environment. What is more, the plays themselves insistently explore—'experiment with'—their characters' and audiences' cognitive capabilities and limitations, and in doing so they have proved successful in engaging audiences and readers in strikingly different settings. Greek tragedy thus constitutes prime material for researching human cognition, both historically (Cave's archive) and contemporaneously, material that has on the whole been neglected by cognitive science, in part no doubt exactly because it is so complex. A properly satisfactory account of human cognition cannot exclude cognition in and of

³⁹ Relatedly, see Willems and Jacobs 2016, an article by an experimental linguist and an experimental psychologist arguing (*inter alia*) that literary works offer greater ecological validity than typical lab-based stimuli.

literature, and an account of cognition in and of literature cannot exclude the humanities.

This second point is particularly important. Currently, most interdisciplinary work between cognitive science and the humanities is initiated on the humanities side, as indeed most calls for bi-directionality originate in the humanities, often with only limited resonance in the sciences. It is to be hoped that this will change in due course, but in the meantime it is inherently beneficial for classicists to understand their task not only as drawing on material from psychology or neuroscience, or indeed philosophy, to see new things in old texts—immensely productive as that can be in its own right—but also as tackling questions of cognition through the study of literature. The thing to emphasize is that they will achieve this very much as classicists and literary critics. Rather than trying to mimic the sciences, importing their methods and demands, classicists should see themselves as using their own materials (such as Greek tragedy) and their own methods (such as literary criticism) to engage in a conversation about a topic of shared interest, cognition. For this, they of course have to acquire a degree of expertise in the cognitive sciences, but above all, emphatically, they have to remain classicists.⁴⁰

1.4 The chapters

See above, pp. 5–7, on the overarching structure of the volume.

Evert van Emde Boas's chapter is the first of two concerned with Theory of Mind. Basing his argument on recent developments in psychology and the philosophy of mind, he challenges the notion (frequently expressed in cognitive literary studies—and indeed in earlier applications to Greek tragedy), that the interpretation of literary characters is straightforwardly analogous to everyday mindreading. Instead, he argues, character interpretation typically relies on more specialized cognitive resources. Van Emde Boas also suggests that a narrow application of mindreading can overlook crucial features of literary characters that have long been of interest within literary criticism (particularly under the header of 'realism'), and argues that an eclectic cognitive approach is needed to capture literary characterization properly. He concludes his chapter with a reading of Euripides' *Medea*, a play which, he argues, both models and thematizes the unusual cognitive processes involved in making sense of its protagonist.

Sheila Murnaghan writes about the mind of Sophocles' Ajax. She starts with the notorious challenges to interpretation posed by the *Trugrede*, and explores the

⁴⁰ The conviction that literature, and literary methods, have something to contribute is a theme of Raphael Lyne's excellent blog *What literature knows about your brain* and of Terence Cave's work, e.g. (again) Cave 2017.

Chorus' and Tecmessa's attempts to make sense of this mysterious speech. In particular, she highlights their different, understandable, yet variously deficient ways in which both attribute changes of mind to Ajax. Their responses to Ajax are too simple and too partial to do justice to the complexity of the speech, and assume linear temporal development where Ajax himself had spoken of circular change. Exposure to these flawed readings of Ajax, Murnaghan suggests at the end, may have ultimately contributed to a more expansive understanding on the part of the audience. Murnaghan's conceptual basis in this exploration is Theory of Mind. Sophocles, she emphasizes, does not merely showcase Theory of Mind in its many different forms, but is fundamentally interested in exploring its limitations in a cognitively murky universe.

Michael Carroll presents a close reading of the metaphors employed by Pelasgus in Aeschylus' *Suppliants* as he responds to the Danaids' request to grant them asylum. Using a range of cognitive tools, notably the notion of image schemas but also relevance theory and blending, Carroll reads the metaphors as not merely a form of literary expression but as also a mechanism through which Pelasgus evaluates the situation and considers what courses of action are open to him. Carroll explicitly confronts the question whether cognitive literary theory is capable of generating new readings, and argues that his own reading could not have been arrived at by means of conventional accounts of metaphor.

Ruth Scodel uses the toolkit of attribution theory (in the version of Bertram Malle) to analyse the types of factors to which Sophocles' Antigone and Ismene attribute their own and one another's actions. She finds that Antigone sees herself as wholly rational while Ismene has doubts, a pattern that is replicated in the modern psychological record, that Antigone, even though fiercely critical of Ismene, does not accuse her of cowardice, and that Antigone's low valuation of her own life is a crucial factor for her thinking. In passing, Scodel points out that attribution theory also opens the door to cross-cultural comparison. For example, people in more individualistic cultures have proven more likely to underestimate situational factors.

Lucy Van Essen-Fishman traces the different ways in which different characters remember Ajax, both before and after his suicide, and shows that there is much to be learned about their respective views of the world from the manner in which they remember. She points out notable similarities with characteristics of memory observed in social and cognitive psychology. Sophocles' characters resemble the subjects of recent empirical studies in that their memories are closely tied to their emotions as well as to their sense of identity, and in that they change with circumstances. Van Essen-Fishman's aim here is not so much to emphasize universality as to use current knowledge of memory to make us alert to certain aspects of the ancient text.

Anne-Sophie Noel engages Lambros Malafouris' notion of the 'cognitive life of things'. The idea of a reciprocal relationship between person and thing, she suggests,

is both fruitful and in need of modification for reading Greek tragedy. Tragic characters repeatedly invest lifeless objects with a mind (Noel's case studies are the house in the *Oresteia*, the recognition tokens in *Choephoroi*, and the bow in *Hercules Furens*). However, Noel argues, this investment is a conscious form of make-believe: the characters know that they are engaging in a fiction. Noel ends therefore by arguing for the relevance of work on anthropomorphism in developmental and social psychology. For the Watchman, Electra, and Heracles, to endow lifeless objects with a mind is a form of managing solitary and desperate situations rather than indication of a metaphysical belief about the cognitive powers of things.

Hanna Gołąb draws on Fauconnier and Turner's conceptual blending theory to discuss the audience's engagement with the fictional worlds of Greek drama. Building on work in performance studies by Bruce McConachie and Amy Cook, she emphasizes that reality and fiction form a dynamic relationship, and that the audience's role in determining this relationship is an active one. She examines ancient testimonia to distinguish the types of reality-fiction blend that characterize tragedy and comedy, respectively.

Jonas Grethlein reads the false-messenger speech of Sophocles' *Electra* in conjunction with Gorgias' fragment B 23 DK. Both texts combine the aesthetics of illusion with the ethics of deception. Gorgias does so for rhetorical effect, whereas Sophocles' play prompts the question whether the two can in fact be neatly separated when it draws the audience into the speech while leaving them in no doubt that the story is false. The role of cognitive studies in this argument is twofold. It first provides the tools for examining the immersive character of the Paedagogus' speech: Grethlein shows that the speech responds well to an enactive analysis. Secondly, Grethlein points to the limits of universality: on the one hand, there are interesting points of contact between Gorgias' notion of aesthetic illusion and today's understanding of the processes involved; on the other, the persistent emphasis on deception is a specifically ancient Greek phenomenon.

A. C. Duncan uses the concept of joint attention (shared engagement with the same object, such as watching a football match in a crowd of people or reading a book with a child) to conceptualize the phenomenological distinction between watching tragic action in performance and visualizing the same action when reading the script. Duncan develops his argument by means of case studies of what he calls 'sight invitations', textual cues that direct the viewers' visual attention. Sight invitations variously align or separate the internal and external audience, and are variously clear or ambiguous. As a result, joint attention itself becomes a varied phenomenon, but all examples, including the most problematic ones, are unified in demonstrating its great affective powers and its capacity for involving audiences in the plays.

Seth L. Schein's chapter tackles genre, distinguishing two approaches that are well-established yet may usefully be revisited with a cognitive perspective. One is

essentially categorizing: Eleanor Rosch and George Lakoff provide cognitive tools for addressing the notorious fuzziness of genre categories. The second—Schein's chief interest—studies genre for the way it raises, fulfils, and subverts expectations. Reading Sophocles' *Philoctetes* and Euripides' *Alcestis* and *Orestes* as his chief examples, Schein discusses a range of different ways in which genre expectations are thwarted, and interpretative questions raised as a result. Schein ends by asserting the complementarity of humanistic and scientific viewpoints.

Bob Corthals and Ineke Sluiter study the situatedness of (meta)cognition by comparing two scenarios of human ethical behaviour under extreme pressure in Sophocles' *Philoctetes* and Stanley Milgram's experiments in 'obedience to authority'. Each of them advertises its own cognitive model: the opposition between natural disposition and deceitful rhetoric in the *Philoctetes*, and the very notion of 'obedience to authority' in Milgram. Milgram's experiments have been reinterpreted in explicitly cognitive terms by Herbert Clark in terms of cooperation and social coordination. Corthals and Sluiter argue that the three cognitive models for what is ultimately a similar scenario derive their argumentative and illuminating power from their differential situated salience: the cultural and historical contexts come with their own pressing questions, which prioritize different types of answer. All form part of the long history of reflection on cognition, which began centuries before the 'cognitive turn' and is likely to continue for centuries beyond it.

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