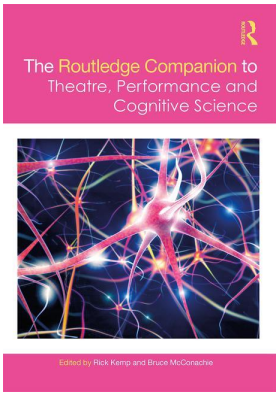

The Routledge Companion to Theatre, Performance, and Cognitive Science

Rick Kemp, Bruce McConachie

The Remains of Ancient Action

Publication details
https://test.routledgehandbooks.com/doi/10.4324/9781315169927-7
Peter Meineck
Published online on: 05 Sep 2018

5

THE REMAINS OF ANCIENT ACTION

Understanding affect and empathy in Greek drama

Peter Meineck

In this chapter, I will explore the application of cognitive theory to ancient drama and how this approach can help us understand more about how these plays functioned in antiquity. In doing so I also hope to dispel a few theatrical myths that still surround Greek drama, and inform the way in which these ancient plays are interpreted by modern practitioners. The focus of most studies on ancient Greek drama has tended to be either textual – that is the recovery, interpretation and translation of what has come down to us via the manuscript tradition, or, to a lesser extent, material – the archaeological remains of the performance spaces and the iconographic evidence found on ancient vase paintings and relief sculpture. My work involves using this evidence alongside cognitive theory to try and gain a better understanding of Greek drama from an experiential perspective. My basic question is: what was the live experience of watching a play in Athens in the fifth century BCE like? How did the extra-textual elements of the performance (movement, music, masks, props, environment, surprise, non-linguistic verbalisations, etc.) contribute to the entire theatrical event? The small amount of evidence we do possess for the reception of these plays in antiquity all allude to how the experience was a highly emotional one, and how drama could 'move the soul' (Plato, *Minos* 231a, Isocrates, *Evagoras* 2.49 and 2.10, and Aristotle, *Poetics* 1450b.16–21). Therefore, an approach that applies research from the affective sciences, cognitive theory and social psychology can be useful in better understanding how Greek theatre functioned in antiquity. Here I will briefly explore three areas based on my recent research on cognitive approaches to the experiential elements of ancient drama: environment, masks, and movement (Meineck, 2017).

Re-thinking the *seeing* place

An ongoing archaeological survey of the remains of the Theatre of Dionysos in Athens, together with new interpretations of relevant inscriptions, indicates that it was far smaller than was once thought, not arranged around a circular orchestra, and primarily built of wood (Csapo, 2007; Meineck, 2012; Papastamati-von Moock, 2015). Thus, the theatre of Aeschylus, Sophocles, Euripides and Aristophanes had 5000 to 6000 seat spaces with a wooden *theatron* (seating area), rectilinear *orchestra* and a simple *skene* – a wooden hut with a roof, single door (later three) and quite possibly a low wooden stage. What is clear from these

new findings is that instead of thinking about the Greek theatre space as architecture, we should reconsider the *theatron* ('seeing place') in terms of its location and relationship to the surrounding environment. In other words, what the Greeks saw when they gathered on the southeast slope of the Acropolis was not only the masked actors and chorus members, but the Sanctuary of Dionysos Eleuthereus below, the old southern city with its ancient shrines and natural features, the Attic hills, the countryside (Rehm, 2002, 14–15) and, perhaps most importantly, what was the largest element in the visual field of the audience – the sky. What did that mean for the *theates* (spectators) who gathered there and how did it affect their experience of the plays?

Barthes (1985) wrote of the Greek theatre, 'the open-air cannot have the same image repertoire as the dark theater: the latter is one of evasion, the former of participation.' He meant that the open, natural environment was ever changing, full of sound and movement and possessed a fragility that could never be repeated twice, rather like a live performance. In such a space, the audience are also fully aware of each other as co-participants in the event. But there is a deeper level of participation that is activated by sky-space that a cognitive approach can help explain. Our relationship to space is an embodied and enactive one, in that we create our perception of the space around us depending on where our body is placed within that space and how we navigate within it. Space is therefore not a fixed immutable element that we enter and experience passively, but the dynamic creation of our brains and bodies as we move through it. In effect, we create the space we happen to inhabit; it is a construction of our own distributed systems of perception.

One highly successful model of this kind of distributed theory of space was advanced by Previc and known as the four realms of three-dimensional space (Previc, 1998). Previc was working with military pilots and trying to solve the problem of discombobulation when they lost visual sight of the horizon and crashed. He inverted the way in which people thought about space, and conceived of it in four embodied realms. These are peripersonal space – which is closest to us and where we can reach; extrapersonal space – where we look to navigate towards; focal extrapersonal space – where we focus our foveal vision; and ambient extrapersonal space – the distal areas such as faraway countryside and the sky. In flight simulator testing, Previc found that when pilots became mentally confused between the peripersonal space of their instrument panels and the extrapersonal distal sky space, they became disorientated and crashed. But Previc also noticed something else – the pilots reported feeling 'spiritual' at these times, or being 'outside of their bodies'; this was something unexpected and strange (Previc, 2006).

Further research indicated what was going on. Previc found that most people when engaged in thoughts about abstract concepts, such as remembering the last time they had a favourite meal, tended to look up even when inside – you can try this on someone and watch their gaze direction (Previc, et al., 2005). He found that the act of upwards vision into even imagined distal space activated the dopamine receptors in the dorsolateral prefrontal cortex, situated next to the frontal eye fields in the brain. Subsequent studies have shown that looking up into LAN (Looking at Nothing) space creates a sense of perceptual disembodiment and releases dopamine (Previc, et al., 2005).

While there are several neural networks connected to the processing of external space and complex electrochemical interactions that contribute to the operation of these functions, dopamine is one neurotransmitter essential for the retrieval of memories and needed for motor planning, movement, prediction formulation and abstract thought (Collins and Frank, 2016).

The reason why Previc's pilots were reporting feelings of spirituality was that their engagement with ambient extrapersonal space was flushing these spatial cognitive systems with dopamine, excessive amounts of which have been shown in people who describe themselves as 'very religious' or 'highly spiritual,' as well as in people suffering from schizophrenia. It is also notable that many cultures tend to linguistically arrange spiritual and religious concepts using vertical spatial arrangements; thus, gods tend to be 'on high,' and mountaintops, clouds and the sky are regarded as places of divinity and spirituality. In terms of distributed cognition, extrapersonal space is physically out of reach and therefore the most abstract, the opposite of peripersonal space where we can hold and grasp objects near to us. In their flight simulators, Previc's pilots were cognitively conflicted by rapidly shifting between perceiving their peripersonal cockpit instruments and gazing out into the expanse of the extrapersonal sky. Thus, contemplating extrapersonal space seems to involve 'the tendency of projecting the self into mental dimensions that transcend sensorimotor contingencies' (Crescentini, et al., 2014).

Plato uses such an embodied concept of the sky as a form of cognitive enlightenment in his famous allegory of the cave in the *Republic* (514a–420a) where a prisoner escapes the flickering shadows and climbs up into the light to gaze upon the true sight of the forms in the sky. Plato's *theoric* traveler must return to the cave to impart the knowledge he has gained, a dangerous task that I think reflects what the ancient theatre was also striving to do – expose its audience to different perspectives, create empathy with others and explore new possibilities. Unlike most modern theatres in the West where the sensory experiences of the audience are controlled by darkness, artificial and focused lighting, sound design and visual settings, Athenian audience members were encouraged to look up and engage with distal sky space.[1]

When Aristophanes created a comedy about escaping from the pressures of the Peloponnesian War and Athenian political life, he invited his audience to imagine that the theatre could become a fantasy city in the sky. Since then, 'Cloudcuckooland' has become a byword for any incredulous fantastical scheme. But the serious side of *Birds* is the idea that the Athenian theatre space was an environment that encouraged abstract thought and the contemplation of alternate ideas. On a neurochemical basis, we can even say that the Theatre of Dionysus was a dopaminergic environment, and by experiencing the dramas staged under the expansive open sky, people were more cognitively primed to abstract thought and the contemplation of different perspectives. The Greek theatre was a place that promoted a sense of disorientation, possibility and spirituality. It was the environmental starting point for mimetic journeys of alterity, dissociation, cognitive absorption and even empathy. This should be considered when we translate such an expansive art form to inhabit interior and artificially lit theatre spaces, where the outside world and the sky are usually occluded.

The enactive mask

In such an expansive space, how did Greek drama manage to create the kind of intimacy or emotional intensity necessary for the successful presentation of complex plots and character interactions? I think this was due in large part to the qualities of the Greek dramatic mask that made it a superb material anchor for spectator projection. Yet, it remains one of the most misunderstood elements of the ancient stage, partly because varied mask traditions and techniques have tended to be conflated and held in similar regard despite their differences. For example, the movement techniques of Commedia are not the same as the kata system of Noh. In antiquity, there was also quite a big difference in form and function between Greek Hellenistic masks, the Roman versions they influenced and the masks used in fifth-century

Athens. If we focus here on classical Greek tragic masks, the limited evidence we possess suggests that what was in use was a full-face mask no larger than a human head with a soft skull cap with realistic hair attached. It was probably made of linen or wood and painted with eyes (the actor looked out of the small pupil holes). Despite the pervasive myth of the megaphone mouth, for which there is absolutely no evidence, Greek masks had small mouth apertures. Furthermore, the evidence found mostly on contemporary vase paintings and some sculptures also show that these masks were not neutral but had ambiguous facial expressions, and like Noh masks were deliberately rendered with a thick bottom lip and high forehead, which, when the mask was tilted at different angles, helped it seem to change its expression (Meineck, 2011).

Neuroscientific research on Japanese Noh masks can be applicable to classical Greek masks as they share similar features. These have shown how human facial recognition systems are provoked by the tilt of the mask and the ambiguous expressions to project certain affective states (Lyons, et al., 2000). Thus, the mask was not fixed in its aspect but was able to seem to change its expression. Neuroscience can also indicate how the mask may have been perceived differently by the ancient Greek audience. For example, Dehaene's fMRI studies on illiterate and semi-literate people have shown how reading re-purposes the existing neural systems involved in facial processing situated in the Visual Word Form Area located in the left fusiform gyrus of the brain (Dehaene, 2013). The left and right fusiform gyri are both associated with facial processing as part of the visual ventral stream. Dehaene found that there was a marked difference between illiterate and literate people when they looked at faces in that the acquisition of reading pushes activation from the left gyrus to the right. It has also been suggested that the left fusiform gyrus is more holistic and the right more analytical and that illiterate and semi-literate people may process faces more emotionally than contextually favouring the left gyrus (Hirshorn, et al., 2016). Considering the low level of literacy in fifth-century Athens, this kind of research can indicate that the mask may have appeared even more emotionally variable than most of us are able to perceive it today.

Recent theoretical work in cognitive archaeology can also help us to better understand how the mask functioned in antiquity. For example, Malafouris' Material Engagement Theory (MET) from the field of cognitive archaeology places things such as ancient artefacts, objects and material sign systems in cognitive equilibrium with brains, bodies and environments across permeable mental boundaries (Malafouris, 2013). If we consider the mask as such an enactive object and not just a representation of a character or a means of disguise, we can start to understand how it was such a superb anchor for material projection. Its schematised features and ambiguous expression promoted abduction and abstraction in much the same way that most people tend to be able to recognise a caricature quicker than photographs of a real famous subject (Benson and Perrett, 1994). It was also enlivened by the actor's own movements, the play of shadows on its three-dimensional features and an uncanny ability to capture the viewers foveal (focused) vision, thereby creating attention and the physical means for denoting a performance.

The ancient Greek mask also conflated several elements of the performance – the presence of the god Dionysos, the means by which a dramatic performance was signalled, an actor's device for playing one or more roles, a character (from the Greek to 'carve') in a play and a physical anchor for the projection of changing affective states. It was far more than the mere symbolic representation it has become today, and hence its name in Greek, *prósōpon*, meant both 'mask' and 'face' and is derived from *pro* and *opsis* – 'before the gaze.'

As well as its enactive multiplicity, the mask possessed an ambiguity of agency – is the actor somehow 'possessed' by the mask, is the mask enlivened by the actor or is the mask

a surface for spectator projection? The answer is probably that it was a blend of each. An element of this uncanny aspect of the mask can be seen on some vase paintings such as the Athenian Pronomos vase of 420 BCE.[2] On it, the actors' faces seem to have 'melded' to resemble the features of the masks they are holding. This phenomenon is something I have observed in rehearsals of productions that have used masks; after a few days the mask starts to look like the actor wearing it. This may be a product of whole-body processing in that we recognise people more effectively from their movements and by our own kinesthetic responses to them, something I will explore later in the chapter. Because the mask seems at once to confuse and to magnify this process, this may be another reason why the act of wearing it creates an instant frame for performance and demands spectator attention.

In terms of distributed cognition, Kirsh (2009) has shown how enactive projection acts as a foundation for sense-making and how projection is different from perception in that projection affords us the ability to see beyond what is physically manifest to imagine what could be. Projection also goes beyond working memory and builds on distributed mental scaffolding attached to an existing material anchor, in this case, the mask. Thus, we project possibilities on these anchors as we attempt to make sense of them and then further develop what we first perceived. This in effect, externalises the mental process and allows for even deeper projection, which, in turn, frees up working memory and increases attention and absorption This helps make the mask visually compelling, highly enactive and emotionally mutable. To the Athenian audience, seated in the environment of the ancient theatre, the dramatic mask may well have been far more effective and personally affecting than the human face. They did not perceive the emotional expressions chosen by the actor, but instead projected their own conceptualisations onto the surface of the mask, provoked by gesture, movement, speech, song and music. This helped create a kind of personal intimacy that was essential if narrative drama was to be successful in such a large open-air environment.

The Greeks recognised this centrality of the mask to the development of drama by crediting their first mythic actor, Thespis, with the act of masking his face and stepping out of the chorus (West, 1989). So much of the affective intimacy of the Greek theatre that we find lacking in our texts or difficult to comprehend in the vast ancient theatre spaces was stimulated by the mask. I am not advocating that modern productions of ancient drama should necessarily be masked, rather that this understanding of the enactivism and affective mutability of the mask frees the actor from approaching Greek drama as if it is some grand exercise in emotional restraint and psychological detachment. For the ancient audience, the mask enabled a deeply personal experience, and modern actors and audience might likewise embrace the emotional power that lies at the heart of Greek drama.

The active inference of movement

Another prevailing myth that persists about Greek drama is that it was a static, stately and magisterial art form. This idea has more to do with the elite Western universities of the late nineteenth and twentieth centuries than anything the ancient Athenians would have experienced.[3] Athenian drama was a theatre of almost constant movement, both individual and collective, and a cognitive approach to what we know of it can help us understand just how much dance, gestures and movement contributed to the emotionality and narrative action of these works.

The chorus was central to the performance of drama in the fifth century and was rooted in a deep culture of chorality and procession, the most pervasive performance forms in antiquity.

At the culminating point of such processions, people would gather to watch a sacrifice or other performed ritual. The Theatre of Dionysos developed from this kind of use, its wooden *theatron* set up over the Sanctuary of Dionysos, the ending point for the processional worship of the god. We should view the chorus with the procession in mind. Whereas most have tended to view the chorus as interludes to actor scenes, we should reverse this notion and envision the actor scenes as 'erupting' out of dynamic choral songs and dances.

We know very little of the music, dance and the non-verbal vocalisations (shouts, cries and other emotive utterances) that were woven through the plays, but we can make some useful deductions. For example, we can see frozen images of dance steps and gestures on Greek iconography, and it is striking how the hands and feet and distinctive gestures tend to be emphasised in many of them. Thus, like Noh, Kathakali or Topeng, Greek drama seems to have also placed great importance on the precise communication of gestures and movement. The chorus members also wore masks, the use of which in such an expansive performance environment would be an advantage when combined with body movements. Research on whole-body perception has indicated that the body is far better at communicating affective states over long distances than the face, which is only effective when in close proximity to the observer (Baylor, 2009).

When we do focus on the emotional communicative properties of a face, we tend to infer the mental/emotional state of the individual under view, whereas when we observe the whole body we infer action and this is magnified when observing a group, especially one moving in unison. Some studies have indicated that when shown a disembodied face displaying surprise, many people are confused as to how to categorise the emotional state, yet when the same facial expression is observed as part of a whole-body schema, emotional recognition tends to be far more accurate (de Gelder, et al., 2010). As described earlier, the area of the brain most closely associated with facial processing is the fusiform face area; however, whole-body perception involves a broader neural network that also includes the cortical and sub-cortical areas. Thus, viewing the whole body in motion is more cognitively engaging than just looking at a face, and the action of the chorus would have been a powerfully dynamic emotional communicator (Peelen and Downing, 2005), especially considering that due to the large numbers of male citizens required to dance at the Dionysia, the audience members would have been expert dancers themselves. Furthermore, fMRI studies have indicated that areas of the brain associated with movement will activate when a dancer watches the dance form they have trained in (Calvo-Merino, et al., 2005).

This kind of embodied affective engagement has been called 'kinesthetic empathy' – the way in which emotions are communicated by the observation of the facial and body movements of others such as dance, gestures, postures and facial expressions (Fogtmann, 2007). The result of this kind of kinesthetic empathy has been called 'emotional contagion,' which is a cognitive process where the affective states of others under observation are mirrored subliminally by the micro-expressions of the observer (Hatfield, et al., 1994). 'Empathy' is a difficult term, sometimes described as meaning 'feeling with' as opposed to 'sympathy' – 'feeling for.' I take the position that it is impossible to feel the exact same emotions as another person, as we can never fully know what has influenced them or the full psychological makeup of the person under view (Goldie, 2011; Slaby, 2014). We can, however, make inferences about what we observe and be stimulated by the actions and affective state of another to feel something ourselves. Greek drama aimed to provoke its audience to feel for others, often marginalised, powerless

and foreign characters, or mythological personages in the depths of despair, and it is in this context that Aristotle famously noted that from *eleos* and *phobos* (pity/empathy and fear) and other emotions, one can be made to experience *catharsis* (*Poetics* 1449b27–28).

There are, of course, personal and cultural complexities to how emotional contagion operates and how receptive people are to it. However, we all perceive the world around us by making constant active inferences about the sensory information we receive – this includes the movements of others and the way they can make us feel.

Active inference is the cognitive process central to Friston's 'free energy principle' – the theory that the brain needs to generate constant predictions to minimise 'free energy' or face total entropy. Andy Clark calls this 'predictive processing' and declares human cognition as a kind of 'bootstrap heaven' where bottom-up incoming information is rapidly compared to top-down mental models to 'predict' the world around us (Ondobaka, et al., 2015). Kinesthetic empathy and the emotional contagion it helps generate are essential to the mechanisms of the active inference system. In kinesthetic terms, inferences can be generated by proprioception – the awareness of one's own body movements; by exteroceptive means – eyesight and sensation; and by interoceptive – feelings generated by human internal autonomic systems such as the stomach, nerves and blood vessels.

The ancient audience members were able to perceive, predict and project the emotions proprioceptively and seemingly instantaneously. Additionally, the gestural system of the actors generated exteroceptive signs and induced activated representations and thus powerful communicators of generalised concepts that further enhanced the transference of knowledge from actor to audience (Novack, 2016). The spectator's interoceptive systems could be stimulated by micro-mirroring such movements, which could, in turn, produce autonomic responses such as a gulp, a pit in the stomach, a slight shudder or a tightening of the throat. Such embodied predictive generation stimulated by the movements and gestures of the masked chorus members and actors of Greek drama facilitated the kind of active inferences that induced emotional contagion and empathy. To us, the chorus is perhaps the most challenging aspect of ancient drama, but for the ancient spectator, it was probably among the most viscerally affecting, dynamic and thrilling.

We tend to look backwards at Greek drama and perceive it as the genesis of our own theatrical traditions. As a result, artists can be over-reverent to this material and approach it with trepidation that can lead to a disconnection between their experience and training and the material they are trying to make sense of. Although Athenian drama had a profound influence on Hellenistic and Roman theatre, our relationship to it is one of re-discovery, re-interpretation and reception and dependent on scholarship rather than performance. An approach anchored in cognitive theory can bring us closer to the experience of the audience in antiquity, help demonstrate how compelling, absorbing and affecting Greek drama must have been and inspire modern artists to free the emotional and empathetic spirit of these remarkable ancient plays.

Notes

1 There are textual examples of this. For example, Euripides' *Bacchae* 1264–70; Aristophanes' *Clouds* 228–34, *Peace* 82–153, and *Birds* 175–80. See also Plato, *Timaeus* 90a.
2 See Meineck (2017: 81).
3 For references, see Tarvin (1990).

References

Barthes, R. 1985. *The responsibility of forms*. Howard, R. (Tr.), Berkeley, CA: UC Press.

Baylor, A.L. 2009. 'Promoting motivation with virtual agents and avatars: Role of visual presence and appearance' in *Philosophical Transactions of the Royal Society of London B: Biological Sciences* 364.1535: 3559–65.

Benson, P.J. and Perrett, D.I. 1994. 'Visual processing of facial distinctiveness' in *Perception* 23.1: 75–93.

Calvo-Merino, B., Glaser, D.E., Grezes, J., Passingham, R.E. and Haggard, P. 2005. 'Action observation and acquired motor skills: An FMRI study with expert dancers' in *Cerebral Cortex* 15.8: 1243–9.

Clark, A. 2015. *Surfing uncertainty: Prediction, action, and the embodied mind*. Oxford: Oxford University Press.

Collins, A.G.E. and Frank, M.J. 2016. 'Surprise! Dopamine signals mix action, value and error' in *Nature Neuroscience* 19.1: 3–5.

Crescentini, C., Aglioti, S.M., Fabbro, F. and Urgesi, C. 2014. 'Virtual lesions of the inferior parietal cortex induce fast changes of implicit religiousness/spirituality' in *Cortex* 54: 1–15.

Csapo, E. 2007. 'The men who built the theaters: Theatropolai, Theatronai, and Arkhitektones' in Wilson, P. (Ed.), *The Greek theatre and festivals: Documentary studies*. Oxford: Oxford University Press: 97–121.

Gelder, B. de. 2009. 'Why bodies? Twelve reasons for including bodily expressions in affective neuroscience' in *Philosophical Transactions of the Royal Society B: Biological Sciences* 364.1535: 3475–84.

Dehaene, S. 2013. 'Inside the letterbox: How literacy transforms the human brain' in *Cerebrum* 7: 1–16.

Fogtmann, M.H. 2007. 'Kinesthetic empathy interaction – Exploring the possibilities of psychomotor abilities in interaction design' in Ramduny-Ellis, D., Dix, A. and Gill, S. (Eds.), *Second International Workshop on Physicality in proceedings of the 21st British HCI Group Annual Conference on People and Computers: HCI… but not as we know it*. London: British Computer Society: 217–18.

Goldie, P. 2011. 'Anti-empathy' in Coplan, A. and Goldie, P. (Eds.), *Empathy: Philosophical and psychological perspectives*. Oxford: Oxford University Press: 301–17.

Hatfield, E., Cacioppo, J.T. and Rapson, R.L. 1994. *Emotional contagion*. Cambridge: Cambridge University Press.

Hirshorn, E.A., Wrencher, A., Durisko, C., Moore, M.W. and Fiez, J.A., 2016. 'Fusiform gyrus laterality in writing systems with different mapping principles: An artificial orthography training study' in *Journal of Cognitive Neuroscience* 28.6: 882–94.

Kirsh, D. 2009. 'Projections, problem space, and anchoring' in Taatgen, N.A. and van Rijn, H. (Eds.), *Proceedings of the 31st annual conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Academy: 2310–15.

Lyons, M.J., Campbell, R., Plante, A., Coleman, M., Kamachi, M. and Akamatsu, S. 2000. 'The Noh mask effect: Vertical viewpoint dependence of facial expression perception' in *Proceedings of the Royal Society of London B: Biological Sciences* 267.1459: 2239–45.

Malafouris, L. 2013. *How things shape the mind*. Cambridge, MA: MIT Press.

Meineck, P. 2011. 'The neuroscience of the tragic mask' in *Arion: A Journal of Humanities and the Classics* 19.1: 113–58.

Meineck, P. 2012. 'The embodied space: Performance and visual cognition at the fifth century Athenian theatre' in *New England Classical Journal* 39: 3–46.

Meineck, P., 2017. *Theatrocracy: Greek drama, cognition and the imperative for theatre*. Abingdon and New York: Routledge.

Novack, M.A. and Goldin-Meadow, S. 2016. 'Gesture as representational action: A paper about function' in *Psychonomic Bulletin & Review*. doi:10.3758/s13423-016-1145-z.

Ondobaka, S., Kilner, J. and Friston, K. 2015. 'The role of interoceptive inference in theory of mind' in *Brain and Cognition* 112: 64–8.

Papastamati-von Moock, C. 2015. 'The wooden theatre of Dionysos eleuthereus in Athens: Old issues, new research' in Frederiksen, R., Gebhard, E.R. and Sokolicek, A. (Eds.), *The architecture of the ancient Greek theatre, acts of an international conference at the Danish Institute at Athens 27–30 January 2012*. Aarhus: Aarhus University Press: 39–79.

Peelen, M.V. and Downing, P.E. 2005. 'Selectivity for the human body in the fusiform gyrus' in *Journal of Neurophysiology* 93.1: 603–8.

Previc, F. 1998. 'The neuropsychology of 3-D space' in *Psychological Bulletin* 124.2: 123–64.

Previc, F. 2006. 'The role of the extrapersonal brain systems in religious activity' in *Consciousness and Cognition* 15: 500–39.
Previc, F., Declerck, C. and de Brabander, B. 2005. 'Why your 'head is in the clouds' during thinking: The relationship between cognition and upper space' in *Acta Psychologica* 118: 7–24.
Rehm, R. 2002. *The play of space: Spatial transformation in Greek tragedy*. Princeton, NJ: Princeton University Press.
Slaby, J. 2014. 'Empathy's blind spot' in *Medicine, Health Care and Philosophy* 17.2: 249–58.
Tarvin, W.L. 1990. 'Tragic closure and "tragic calm"' in *Modern Language Quarterly* 51.1: 5–24.
West, M.L. 1989. 'The early chronology of Attic tragedy' in *The Classical Quarterly* (New Series) 39.1: 251–4.