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Charles Forceville ([c.j.forceville@uva.nl](mailto:c.j.forceville@uva.nl)), 3 April 2014

Arthur P. Shimamura (ed.), *Psychocinematics: Exploring Cognition at the Movies*, Oxford University Press, Oxford 2013. Hardback, 385 pp. ISBN: 978-019-986213-9.

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“Psychocinematics,” according to Shimamura, “is grounded on a scientific analysis of our *aesthetic response* to movies” (p. 2, emphasis in original). It takes as starting point that the processing of film is firmly rooted in psychological and biological characteristics of our species, and favours empirical research. Moreover, it aims to contribute to a better comprehension of film as well as of human cognition.

For cognitivists, Part One (“Philosophical Foundations”) covers familiar territory. David Bordwell presents a historical *tour d’horizon* of assorted theories offering explanations how movies communicate information to and affect viewers. A key idea in the cognitivist theories that are central in this volume is that “the spectator draws on real-world knowledge and awareness of narrative conventions in order to go beyond the information given directly in the film” (p. 49). Noël Carroll and William Seeley’s chapter adds that films trigger our attention by various means (e.g., motion, brightness), explaining that our brains are preconditioned to pick up these cues. This makes sense as, in the cognitivist view, human beings are fundamentally goal-driven creatures, and their everyday audiovisual monitoring of the environment serves them equally well in the interpretation of film, a medium which requires only a minimal degree of learning. Joseph Anderson sings the praise of cognitivism over the ideological and political biases of Marxism, psychoanalysis, and Cultural Studies (“Grand Theory”). Drawing on Gibson’s (1979) “affordances,” he ends with a plea for more sustained research into the evolutionary role of art. Carl Plantinga discusses how film spectators’ moods, emotions, and body reflexes are almost invariably related to their *thinking*: the narrative motors of suspense, curiosity, anticipation, and interest rarely run without eliciting affective states.

The rest of the book investigates implications of these assumptions for how to study film viewers’ bodily and mental activities. Part Two, “Sensory and Attentional Features of Movies,” begins with Katherine Thomson-Jones’ philosophical “Sensing motion in movies” – a chapter whose evaluation is beyond my competence. Kaitlin Brunick, James Cutting, and Jordan DeLong show how film narratives are much enhanced by “low-level” building blocks such as shot duration, editing rhythm, movement, luminance, and colour. All of these features can be quantified, and may help cue genres, segment films, or steer the characterisation of protagonists. Sheena Rogers warns that slow-motion screening of documentary (unlike fictional) footage can be highly dubious, as for instance hitting and falling seem less hard and serious than when seen at normal speed. Participants in her experiments were not able to

detect marginal slow-downs, which however had strong effects on their evaluations. Rogers firmly concludes: “the jurors in the trial of the police officers who beat Rodney King were lied to when they were shown George Holliday’s home video in slow motion” (p. 157). Tim Smith explains with reference to his own Attentional Theory of Cinematic Continuity how eye tracking technology, cueing viewers’ continually shifting attention – particularly to motion – helps assess what is going on in their minds. Since spectators can take in only a very small part of what is visible in a shot at any moment, directors need to ensure they immediately focus attention on the pertinent part of the screen (by and large: on faces and task-relevant objects). Indeed, in an experiment in which viewers watched key Hollywood movie scenes, they almost all looked at the same screen area at any given moment.

Part Three pertains to “Knowledge, Imagination, and Narratives.” Human beings always seek a good balance between the reliably familiar and the excitingly new. Too much of the former bores us, yet too much of the latter bewilders us. Todd Berliner argues that Hollywood films, contrary to the stereotypical view of catering only for unity and equilibrium, in fact counterbalance this with a healthy dose of disunity. This latter surfaces in the form of “gaps, discontinuities, incongruities, and other elements that do not operate in strict harmony with story logic” (p. 198).

A feature film of course constantly needs to condense real-time events and actions. Stephan Schwan reports experimental research on how well viewers remembered a sequence depending on whether they saw it in full, in a version featuring natural “breakpoints,” or in a version featuring “unnatural breakpoints.” Viewers did considerably better on the version with natural than on the version with unnatural breakpoints. However, even from the well-edited version participants recalled only 58% of the actions presented. Other experiments demonstrated that viewers are indeed helped by cinematic conventions such as the 180° rule. Jeffrey Zacks, too, reports experimental findings on how viewers segment films. The key driver for locating breaks, as in real life, is “*change* in the features of the depicted situation” (p. 231, emphasis in original), which is construed in light of top-down interpretations of such mechanisms as characters’ relations and goals. Thus, while changes often coincide with cuts this is by no means always the case. Importance of change overrules importance of cuts when the task for participants is: “indicate event boundaries.” fMRI scans of brain activity seem to confirm this pattern and also show that mental simulation beyond vision and hearing (such as smell, taste) occurred specifically when there were changes in objects and in spatial locations.

Daniel Levin, Alicia Hymel, and Lewis Baker point out that the study of “Theory of Mind” (TOM, humans’ – and some animals’ – ability to infer conspecifics’ mental states, emotions, and intentions) strongly depends on visual perception. Findings echo those in Zacks’ chapter: automatic TOM subprocesses such as gaze detection and joint attention are important, but may be revised in light of higher cognitive, narrative processes. The authors further speculate how TOM interacts or competes with other systems (e.g., numerical cognition) and suggest that genre-attribution strongly drives appraisal of events in films.

Keith Oatley’s chapter opens Part Four, which centres on emotion in film. He distinguishes between spectators’ emotions based on (1) imagining they are themselves present at the film scene; (2) their sympathy with the characters; (3) and events in the film world that trigger the simulation of experiences in a spectator’s own life. Art typically gives people a fair degree of freedom to experience emotions tailored to their personal needs. Gal Raz, Boaz Hagin, and Talma Hendler see film as a particularly attractive medium for affective neuroscience, provided “we take into account the contemporary understanding of emotion as an interactive, dynamic process unfolding over time” (p. 286). They discuss major experimental techniques (technical labels: activity contrasts, SSRA, ISC, FC, ICA, NCI). Fully aware of the richness of filmic cues, the authors consider strengths and limitations of the different types of techniques.

Monika Suckfüll's experiments test emotion regulation in light of the "mode" in which viewers watch a film, since this can help explain why individuals are affected so vastly differently by the same filmic passage. Suckfüll distinguishes four receptive modes, pertaining to viewers' (i) self-identity-creation; (ii) sympathy and empathy with characters; (iii) spurring of their imagination; and (iv) interest in production issues. Viewers may switch between modes as a way of "regaining control through cognitive change" (p. 328); for instance, when the movie becomes too scary, they may switch from empathy mode to production mode. Ed Tan reviews pertinent literature on man's response to film as that of an "empathic animal" (p. 344), emphasising the central role of the perception-action mechanism (PAM), introduced by the primatologist de Waal: we perceive others' actions (particularly those involving facial expressions and hand movements), which in turn trigger real or virtual empathic actions of our own.

The volume convincingly shows how cognitivist approaches and psychocinematics are natural allies, and demonstrates fine opportunities for collaboration between film scholars, psychologists and brain researchers. Let me end with three general points.

First, it is telling that Raz et al.'s seemingly robustly cognitivism-oriented chapter is the *only* one that quotes Deleuze – father of an approach that vies with cognitivism in claiming to contribute to neuroscience (e.g., Pisters 2012). More generally Raz et al. emphasise that Cultural Studies, routinely maligned or ignored by cognitivists, actually provides important insights for psychocinematics. It is perhaps worrying that only these relative outsiders try to build bridges across the chasm separating cognitivist and Cultural Studies approaches.

Second, the chapters reporting experimental research on low-level perception, editing patterns, and automatic empathy persuaded me that the biological contribution to understanding film needs to be part and parcel of introductory film courses. Film students are to be made aware of this dimension of the medium from day one.

Finally, the pervasive references to TOM, attention, empathy, intentionality and modes of reception show that the book has actually less to say (*pace* Shimamura) on the aesthetics of film viewing than on how film is understood. They also show that we need an overall communication & cognition theory to accommodate all of these dimensions. I think Relevance Theory (Sperber and Wilson 1995, see Forceville 2014) can fulfil this role.

## References

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