



Phenomenology and data

Description

In 2013 a group of us published an article describing our early attempt to use head-mounted mobile EEG to gauge people's emotional (affective) responses to spaces while on the move.

- Aspinall, Peter, Panagiotis Mavros, Richard Coyne, and Jenny Roe. "The urban brain: Analysing outdoor physical activity with mobile EEG." *British Journal of Sports Medicine* 49, no. 4 (2013). [PDF](#)

According to Google Scholar that article has been cited 544 times. That's the most of any article of which I am an author/co-author, and more citations than our subsequent research conducted with more comprehensive evidence and an expanded research team.

A phenomenological approach to data-oriented research

We didn't mention "phenomenology" in that article, but I was able to run a Google search on the 544 articles that cited our article. 35 of those articles (6.4%) position our research within a discussion of phenomenology. The most cited of this subset is by cultural geographer Justin Spinney. I think his article relates our use of bio-sensing technologies with phenomenology better than I could. He summarises the phenomenological method as one that

"seeks to focus attention on the relationship between subject and object and to describe the experience from the first person point of view" (233).

He draws on writers such as Edward Relph to identify elements common to phenomenological method:

"it is primarily descriptive, concerned with complexity, and involves attempting to place the researcher in the position of those experiencing the phenomenon" (233).

Space and movement

Phenomenology is of interest in cultural geography, not least as it studies spatial experience, and movement. According to Spinney, “Movement has always been fundamental to phenomenology” (234), as it involves our embodied interaction with the world. In fact to assume a static world is to resort to an abstraction, a diminished understanding of experience.

Spinney and others advocate for “Go-along” research methodologies that involve engaging with people as they move through their worlds. Video recordings and documentation of personal narratives while walking, cycling, or driving are common tools that support this style of research. We conducted several go-along workshops. See post: [Brain walks](#) and featured image on this page.

Post-phenomenology

Spinney also subscribes to a kind of “post-phenomenology.” Historically, phenomenology has positioned itself against what it regards as scientific rationalism, reductivism, and a reliance on empirical data. The *post-phenomenological* position is prepared to acknowledge and deploy critically technologies and scientific methods that have in turn internalised their own critique and revisions since the early days of the Phenomenology movement.

Spinney also brings the study of emotion and affect into the orbit of post-phenomenological research,

“the study of those aspects of lived experience such as affect that may escape conscious thought and language and thus can be described in some ways as being “beyond” experience: experience as pre-personal” (234).

That leads to a willingness to deploy bio-sensing technologies to capture aspects of human affective experience that “go-along” talk, observation and personal reflection may miss.

“in asking participants to speak about their lived experiences after the fact risks losing much of the “effervescence”, the “over-flowing” nature of lived experience partly because we ask them to do so through language “a form of representation not always suited to describing unconscious bodily phenomena “but also because we ask participants to recall these experiences after the fact and thus lose further detail” (236).

He discusses various applications of bio-sensing technologies. Of most interest to me, he describes our EEG work.

“Using the device, Aspinall et al. were able to demonstrate the very different levels of affective intensity experienced moment by moment between and within urban and green spaces. Aspinall et al.’s research is illustrative of attempts to “let bodies speak for themselves” because it forgoes the need for bodily sensations to be thought or spoken in order to be represented” (239).

I like that characterisation (letting bodies speak for themselves), and for me this account recalls some of C.S. Peirce’s writing about the immediacy of pre-linguistic signs ([Firstness](#)). Spinney is suitably critical of our method however.

However, the resulting graphic representations of the affective data are somewhat disappointing with very little indication of what the affective response might be related to; whether stimuli are internal or external, and certainly not which qualitative feelings intensities are related to. Left to speak for itself the EEG data in Aspinall et al.'s study provides a rather thin description and remains too abstract' (240).

That was indeed one of the many limitations of the technology, and our method involved averaging and smoothing out the responses of a number of participants (with some sophisticated stats). Spinney however sees the application of the technology in many ways as we did.

Despite this, I would argue that Aspinall et al.'s study begins to illuminate one key way in which bio-sensing may be able to fortify go-along approaches by representing and geo-locating down to the second, pre-conscious intensities that have arisen through moving encounters with other materialities' (240).

He concludes with a nod towards the potential value of such technologies in creating better environments.

I am as one should always be duly sceptical of technologies and their apparently valuefree appearance. However, at the same time, I find myself asking whether such technologies cannot be recuperated for a more civic project such as how to design urban environments that emphasise positive affect rather than increased efficiency' (240).

References

- Aspinall, Peter, Panagiotis Mavros, Richard Coyne, and Jenny Roe. 'The urban brain: Analysing outdoor physical activity with mobile EEG.' *British Journal of Sports Medicine* 49, no. 4 (2013). [PDF](#)
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- Relph, Edward. 'Spirit of Place and Sense of Place in Virtual Realities.' *Technē: Research in Philosophy and Technology, Special Issue: Real and Virtual Places* (

<http://scholar.lib.vt.edu/ejournals/SPT/v10n3> 10, no. 3 (2007): 17-25.

- Spinney, Justin. "Close encounters? Mobile methods, (post)phenomenology and affect." *Cultural Geographies* 22, no. 2 (2015): 231-246. [PDF](#)

Note

For a more recent article that cites ours see

- Liebherr, Magnus, Andrew W. Corcoran, Phillip M. Alday, Scott Coussens, Valeria Bellan, Caitlin A. Howlett, Maarten A. Immink, Mark Kohler, Matthias Schlesewsky, and Ina Bornkessel-Schlesewsky. "EEG and behavioral correlates of attentional processing while walking and navigating naturalistic environments." *Scientific Reports* 11, no. 22325 (2021). <https://doi.org/10.1038/s41598-021-01772-8>

Within a more naturalistic context, Aspinall and colleagues described EEG changes in terms of increased engagement and arousal in more busy environmental settings (i.e., urban shopping street and busy commercial district compared to green spaces). However, the interpretation of these findings is complicated by the authors' reliance on proprietary EEG metrics that are not commonly reported in the scientific literature. More recently, Pizzamiglio and colleagues reported increased theta and beta power when participants were walking across a campus while conversing, as compared to standing still. However, studies that have analyzed attention-related ERP responses under such ecologically valid conditions are rare and often limited to virtual reality within a dedicated room (2).

Category

1. Research related

Tags

1. brain
2. EEG
3. go-along
4. Phenomenology
5. research method

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Author

rcoyne99