

# The Digital Deficit

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Nicholas Carr has just pointed to some recently published research which suggests that the presence of smartphones divert our attention, using up cognitive resources which would otherwise be available for other activities, and consequently our performance on those non-phone-related activities suffers. In certain respects, this might not seem to be ‘news’ – we’re becoming increasingly accustomed to the problem of technological interruptions to our physical and cognitive activities: the way that visual and aural triggers signal new messages, new emails, new tweets arriving to distract us from the task in hand. However, this particular study was rather different.

In this case, the phones were put into silent mode so that participants would be unaware of any incoming messages, calls etc. (and if the phone was on the desk, rather than in their pocket or bag or in another room altogether, it was placed face-down to avoid any visible indicators) (Ward *et al.* 2017, 144). Despite this, they found that

“... the mere presence of one’s smartphone may reduce available cognitive capacity and impair cognitive functioning, even when consumers are successful at remaining focused on the task at hand” (Ward *et al.*, 2017, 146).

In a second experiment, a random selection of participants turned their phones off altogether in case there had been some surreptitious checking of phones going on. They confirmed their previous results and added that

“the more consumers depend on their smartphones, the more they seem to suffer from their presence — or, more optimistically, the more they may stand to benefit from their absence” (Ward *et al.* 2017, 150).

Carr’s article links to a range of other research over the last five years or so which point to the

cognitive cost of these devices, but what Ward *et al*'s study suggests is that the cost is there *even if we turn them off* – their very presence is enough to trigger memories of their associated affordances and hence anxiety about what we might be missing. What this underlines is the way in which, as we offload cognitive actions onto our digital devices, there is an equivalent cognitive cost: as Carr notes,

“Imagine combining a mailbox, a newspaper, a TV, a radio, a photo album, a public library and a boisterous party attended by everyone you know, and then compressing them all into a single, small, radiant object. That is what a smartphone represents to us. No wonder we can't take our minds off it”.

We're increasingly aware of the way that the availability of information online relieves us of the need to remember it since it is always to hand through these devices. Curiously, though, most of the research on these effects seems to focus on samples drawn from education and students – relatively few studies look at the workplace and those that do frequently focus on workplace learning.

So the question to be asked is what is the cognitive cost of using these devices in archaeological contexts? Smartphones (and tablets) are increasingly ubiquitous across the range of archaeological work, and we cannot assume that we are somehow immune to these kinds of effects. We're becoming acclimatised to the idea that these devices are more than simply methodological tools, that they bring with them battery of theoretical and practical constraints embedded in their hardware and software, but these kinds of studies go way beyond this whereas most archaeological investigations focus more pragmatically on the technical aspects of the implementation of these devices in the field (for instance, see the set of papers in Averett, Gordon and Counts (eds.) 2016). These devices are regularly seen as revolutionary in terms of working practices – not least their ability to access live data remotely – although concerns are expressed about the industrialisation of fieldwork and the deskilling of tasks, for example (e.g. Ellis 2016), but there is little or no reference to any broader cognitive costs. And smartphones and tablets are just at the extreme end of the spectrum of digital cognitive artefacts (Huggett 2017) that we use in our social and working environments. Digital cameras, 3D scanners, camera drones, etc. can be similarly disruptive in various ways and, in conjunction with their undoubted benefits, increase distance through taking on cognitive as well as practical roles.

Carr concludes:

“When we constrict our capacity for reasoning and recall or transfer those skills to a gadget, we sacrifice our ability to turn information into knowledge. We get the data but lose the meaning. Upgrading our gadgets won't solve the problem. We need to give our minds more room to think. And that means putting some distance between ourselves and our phones.”

The extent to which offloading a range of cognitive tasks onto our digital artefacts changes those tasks has been addressed to a degree by some archaeologists. But far less attention has been paid to the extent to which these cognitive artefacts change us along with the archaeology that we create. We profit from the application of these devices but at the same time we need to recognise

the deficit that accompanies them.

## References

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