SOCIAL MEDIA AND SELF-CONTROL:
THE VICES AND VIRTUES OF ATTENTION

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The Web 2.0 and the perils of distraction

Picture a child sitting in front of a long, empty table. An adult in front of her—the only other person in the room—puts a marshmallow on the table, right in front of the child, and tells her she has two options: she could eat one marshmallow right now, or she could wait until the experimenter came back, and then she would get two marshmallows.

This is the setting of what has become one of the most famous psychological experiments. The children in the test are of preschool age (around 4.5 years old on average). In getting them to pick between a smaller, sooner reward and a larger, later reward, researchers sought to assess their capacity for self-control, i.e. for postponing gratification and persisting in the search for a greater, more distant goal. The children had to wait typically fifteen minutes, in a lonely room designed to have no distracting elements, while avoiding a temptation that was, quite literally, in front of their faces.

While interesting on its own, the study became famous when researchers followed up on the original participants and assessed how they were doing during their adolescence and adulthood. They found that those who had managed to delay gratification as children were later more likely to have higher academic scores, more stable emotional lives, richer relationships, and lower Body Mass Indexes.[1]

So it seems that the 'marshmallow experiment'—as it is usually called—managed to measure a very crucial, multipurpose capacity that contributes greatly to the overall shape our

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[1] Some of the initial findings can be found in Mischel and Ebbesen (1970) and Mischel et al. (1972). (The experiment's setting is somewhat simplified here for presentation purposes.) Follow-up studies are reported in Shoda et al. (1990) and Schlam et al. (2013), among others. See also de Ridder et al. (2012).

lives take. Researchers found that the self-control capacities at stake here were correlated to children's ability to control their attention: those who were most successful in waiting for the bigger reward managed to keep their mind focused on things other than the marshmallow; to do this they used mental tricks, like transporting themselves to other places with their imagination, or bodily tricks, like closing their eyes. Thus there is reason to think that our capacity for controlling our attention and our capacity to exert self-control are very closely linked.

By 'self-control' I refer to the capacity to select which among our desires and intentions become effective in our behaviour, and follow through with that selection despite distractions and temptations. This amounts to the capacity to control our <u>selves</u>, i.e. to give shape and contour to our identities as agents through time. In this sense, self-control is very closely linked to notions like autonomy and freedom of the will. The ultimate philosophical teaching of the marshmallow experiment may therefore be that self-control, this capacity to shape our selves, is heavily dependent on the capacity to control the direction of our attention.[2]

And this is why the recent emergence of social media may be worrisome.

The rise of the Internet as the new dominant means of communication has tended to produce a massive increase in the average quantity of content we process everyday, as well as in the speed at which we process it. Many are becoming concerned that such vertiginous increases in quantity and speed may be eroding our ability to keep our attention focused on a given object for any lengthy amount of time. Moreover, this erosion of attention seems to be taken further by the rise of the so-called 'Web 2.0' (the tendency to transform the Internet into a socially constructed medium by allowing for users themselves to generate their own content, through e.g. profile construction, commenting and rating, liking or disliking, following or unfollowing, and so on), because now also our social identities are at stake in each new wave of content delivered in the form of a notification, a chat, a Facebook update or comment. Anyone with some first-hand online experience has probably experienced what it is like to not be able

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[2] In this short characterization I am skipping over a number of discussions concerning the philosophy of agency, self-control, the will, and their mutual relationships. For discussion, see e.g. Frankfurt (1971); Mele (1992; 2011); Heath and Anderson (2010); Paglieri (2012).

to keep their attention in one place for much longer than a few seconds, due to the constant interruptions of the Web 2.0.

So, if the internet and social media are eroding our ability to control our attention, and if attentional control is crucial to self-control, we may justifiably worry about whether social media are undermining our ability to shape our own lives by making us less able to focus on our goals and more likely to chase after immediate diversions.

This is not the first time people have worried about the negative effects a new communication medium may have on the human mind. Plato, for one, was gravely concerned about the profoundly negative consequences of the great communication revolution of his age: writing. In the Phaedrus, he has Socrates tell the story of a great inventor who has just created the written word, who then presents it as a gift to the Egyptian king. To this the king replies: "this discovery of yours will create forgetfulness in the learners' souls, because they will not use their memories; they will trust to the external written characters and not remember of themselves."[3] By fixating words into text, the truth of the ensouled speech will be reduced to the mere appearance of truth of the characters in the inert page. And as dead records pile up, living memory will deteriorate.

Few people alive today would think that Plato was justified in his criticism of writing. Even if—as it surely was the case—we lost something irreparably by leaving the mind of the oral tradition behind, the possibilities opened by writing far outstrip any possible downsides it may have. Most of us would surely agree that illiteracy has proven to have much more paralyzing consequences than literacy. Yet Plato had no way of foreseeing the new possibilities that would open up with the printing press and the democratization of reading and writing.

Something similar may be occurring to us: the appearance of digital media may be too close to our own time for us to truly envision the new possibilities it opens up. Still, Platonism has had a recent resurgence of sorts, inspired by the Internet and its social turn. If Plato's Socrates was worried that writing may deprive us of our memory and make us forgetful, defenders of what I call 'Platonism 2.0' are now worried that the internet may be depriving us

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[3] The story is narrated in Phaedrus 274C–275B (tr. by B. Jowett).

of our capacity for sustained attention, and making us distracted. Nicholas Carr has recently produced a forceful defence of this strand of Platonism.[4] Against utopian views of the Web 2.0, Carr argues that the new media are "changing our brains" in ways that have unforeseen negative consequences: they erode our capacity for the paused, reflective concentration historically associated with the ascendance of the book, and replace it with an ever-increasing disposition toward superficial skimming and continuous skipping from one hyperlink to the next, from one email to the next tweet to the new viral cat video.

Paradoxically, the Internet "seizes our attention only to scatter it", says Carr. "We focus intensively on the medium itself, on the flickering screen, but we're distracted by the medium's rapid-fire delivery of competing messages and stimuli." Support comes from studies suggesting that whereas reading a book activates mainly zones in the brain associated with memory, language, and vision, web browsing activates many more brain areas, particularly the prefrontal areas associated with decision-making. This may sound positive (the Internet makes us exercise more brain regions!), but it is the opposite: surfing the Web implies constantly making decisions (about which link to click on, whether to like or comment each post, and so on) and continuously shifting between tasks (navigating between a myriad browser tabs and program windows, which in turn house their own distinct choice problems); such increase in choice-making and multitasking leads to a cognitive overload, because, it turns out, we are not particularly good at either of those things (more on this below). Many of the basic technologies that make up the Internet as the specific medium it is impose decision-making and multitasking problems. Take the hyperlink:

> Whenever we, as readers, come upon a link, we have to pause, for at least a split second, to allow our prefrontal cortex to evaluate whether or not we should click on it. The redirection of our mental resources, from reading words to making judgments, may be imperceptible to us […] but it's been shown to impede comprehension and retention, particularly when it's repeated frequently.

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[4] Carr (2010).

Thus, the Internet enables us to process more things, but it simultaneously spreads our attention much more thinly to cover a wider area of content, and makes it continuously shift between tasks. This in turn implies that we end up processing each bit of content at much shallower levels than we could do before the hyperlink, when our minds were entirely focused on only following the linear content of a book. This is what Carr thinks the Internet is ultimately doing to us: turning us into shallower thinkers, taking away the capacity for deep, sustained concentration that the book medium had enabled us to perform.

Many feel that the Platonist 2.0 is making too much of a deal about the Internet's effects on our brains. After all, it is not like deep concentration is our <u>authentic</u> way of being, and that distraction and impulsiveness are essentially worse than it. If what the Platonist is concerned about is that we may lose our authentic selves, then we would do well to remember that all our modes of being—including the book's lengthy concentration mode—are mediated by particular cultures and traditions, social environments and communication technologies, none being more natural or authentic than another.[5]

But we should not underestimate the new Platonist's concern. For, as the marshmallow experiment has shown, what is at stake here is our ability to control the overall shape of our lives. Attentional control undergirds self-control, and self-control is necessary for successfully resisting temptation and following the path we have chosen for ourselves. If the Web 2.0 is making us more distracted, then it may well be depriving us of our ability to control our lives, and surrendering it to the external forces that we happen to come across.

But what is the evidence for that claim? And if it is true, would it really be a bad thing? Or could it be the opportunity for the emergence of new kinds of skills and identities that go beyond what the book has allowed?

I will try to answer these questions by exploring what we currently know about the effects of social media on attention and self-control. The issue is more complex than it may seem, and there is reason for suspending judgment about the pros and cons of social media; but in the end, I will land on the side of the Platonist. Before that, however, we would do well

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[5] The response to Platonism from a group of anthropologists who have recently studied the uses of social media around the world (Miller et al. 2016, 101–ff.) goes along those lines.

to focus for a while on attention itself. Until now I have been suggesting—as the Platonist does—that distraction is bad, and focus on one's goals and plans is good. But is it always so? Or indeed, to what extent should we be focused and to what extent should we allow for distractions?

The (virtue and) vices of attention

At its core, attention is about attributing relevance. In each moment of conscious experience, out of the myriad features of our perceptual and mental landscapes, only a handful of them seem to be so relevant as to enter our awareness. This a way our cognitive systems help us cope with the world: by reducing the baffling richness and complexity of experience into a few chunks that limited minds like ours are able to process. We automatically disregard most of the features of our environment as irrelevant (and then they just fade into the background of experience), but some of them acquire the special glow of relevance: they appear, more or less clearly, in our worlds.

Relevance can be determined by us (endogenously) or by our environment (exogenously). This is why, roughly speaking, we can talk about two main kinds of attention: attentional control is our capacity to focus on the task we are performing by attributing relevance to the features that are related to said task, while also ignoring or inhibiting unrelated features; this is how the endogenous process of attention works: when we set a goal for ourselves, our minds surround the task-relevant features with the glow of relevance. Such endogenous control of attention is necessary whenever we try to perform a task that is difficult enough to require some cognitive processing, or sufficiently extended in time to require sustained focus—like the children in the marshmallow experiment, who need attentional control in order to avoid the temptation of eating the marshmallow.

On the other hand, attentional capture occurs when some external event grabs our attention, so to speak, without our permission. If someone loudly pronounces our name, we often cannot but notice, even when we are deeply concentrated on some task. Sudden loud noises (e.g. a baby crying on a plane or a fire alarm), bright blinking lights, and fast approaching objects are good at capturing our attention, regardless of what we are doing, or whether we

would rather ignore them. These are exogenous processes of attention: they originate from outside of us, and our paying attention to them results from an involuntary, automatic reaction. These reactions make evolutionary sense since they are our way of noticing unforeseen features of the environment that may require immediate responses.

So the objects of attention can be established endogenously or exogenously; and different people have different tendencies: some people's attention is more easily captured than other's, and some people can more easily keep their goals in mind and avoid diversions from the original plan.

Now, what would be the best distribution between endogenous and exogenous attention? I want to push forward the idea that excesses in either direction are problematic, so that we can call such excesses 'vices of attention', and that, in an Aristotelian vein, the virtuous distribution of attention lies in a middle point between those extremes.

Vices of attention

Imagine someone whose attentional contents are determined solely from outside: she cannot maintain a unified attentional pattern, but rather is constantly attracted by features in her perceptual array that invite her to respond to them: she sees a chair, and feels invited to sit on it; she sees a sweater and is invited her to put it on. In fact, something like this seems to occur to people with a neurological condition called 'utilization behaviour', which is roughly characterized as the appropriate usage of objects in inappropriate situations.[6] Utilization behaviour patients seem to have lost sensitivity to broad aspects of their practical situation, and respond immediately to any of the environment's affordances (i.e. the possibilities for action afforded by the currently present objects, agents, or dispositions of both). They also seem affectively insensitive to the inappropriateness of their actions. Thus, a patient with utilization behaviour may continuously switch a light on and off; if upon seeing a comb she may start combing her hair with it, regardless of who owns it; if she is in a bedroom she may undress and go to bed, even if she is just visiting someone else's house; she may drink from a cup of

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[6] Pandey and Sarma (2015). The condition was initially reported by L'Hermitte (1983), and is linked with bilateral damage to cortical and subcortical locations in the medial premotor system. For discussion of the syndrome and its relevance to agency and control, see Baddeley (2007, Ch. 17); Rietveld (2012).

coffee that is on the desk, although it belongs to her doctor. And after doing any of these things, the patient seems unaffected by the awkwardness caused by her behaviour. A patient may even give reasoned accounts for what she does: she may acknowledge the cup belongs to the physician, and explain that she drank from it because she was thirsty.

In a sense, utilization behaviours are correct: the patients use the objects skilfully, as they should be used (e.g. they do not drop the coffee cup, but appropriately drink from it and then place back on the table). Still, although these behaviours display some kind of control, we would hesitate call them 'actions'—they are mere reactions to the environment's affordances, exogenously-driven automatic responses that fail to display the unity and coherence characteristic of human actions. Utilization behaviour makes patients change the focus of their attention from one aspect of the environment to another without any regard for their own plans or motivations. In fact, arguably, the main feature of utilization behaviour is that patients have lost their ability to form and carry out plans and motivations of their own.

If we picture a spectrum of attention, with completely exogenous attention at one extreme and entirely endogenous attention at the other, an extreme form of utilization behaviour would lie at the exogenous extreme: an attention whose focus is always determined by capture. This is evidently problematic, since it makes it impossible for the agent to perform actions or follow through with plans requiring any complexity, and this ultimately leads to a thorough inability to shape our identity. This is thus an erroneous way to attribute relevance, and thus constitutes a vice of attention, a sort of hyper-distraction.

A the other extreme, we find that concentration may lead to a sort of blindness. In a popular experiment, researchers asked participants to watch a video that shows a basketball team in action, and count the number of passes the team made. The movements were fast and hard to keep up with: for many of us, this would require our undivided attention. That is why a large number of participants fail to notice when someone dressed as a gorilla zigzags between the players, steps in the centre of the scene, hits his chest with his fists, and walks away.[7] The 'invisible gorilla experiment' is the most famous case of inattentional blindness, the phenomenon in which we are so busy performing a cognitively demanding task that we become

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[7] Simons and Chabris (1999).

effectively blind to things that would otherwise capture our attention. This is the flipside of attentional control: when we focus deeply on a task, the rest of our environment fades into the background, even if it includes gorillas hitting their chests in front of us. There are more mundane cases of this: when rushing to a store trying just before closing time, you may fail to notice a friend of yours waving at you trying to say hello; you may be looking straight in her direction, but she is effectively invisible. Such is the inhibitory power of attentional control.

That is obviously a problem: we often should pay attention to unexpected elements of our context, even if they are unrelated to our current task, since failing to do so may constitute errors in our attribution of relevance that could have have grave consequences (think about failing to notice the smell of gas in your home because you are so immersed in the latest season of House of Cards). Thus, at the other extreme of the spectrum lies the opposite vice of attention, in the form of a hypothetical case of a fully endogenously driven agent, who would then be thoroughly inattentionally blind. This hypothetical, inattentionally blind character is never distracted from her tasks, and her attention is never captured exogenously, which would entail dismissing as irrelevant some features of the situation that happen to be relevant. This faulty attentional pattern could thus be called hyper-concentration.

Thus we have two vices of attention, corresponding to the two extremes in the attention spectrum hyper-distraction (a case of thorough utilization behaviour, where relevance is always exogenously determined) and hyper-concentration (a case of thorough inattentional blindness, where relevance is always endogenously determined). Given that the two extremes correspond to two vices, it makes sense to think with Aristotle that in this case virtue of attention is somewhere in the middle between these two extremes.

Virtuous attention is that of an agent who attends to what is relevant, in the amount that is relevant, and while it is relevant. Her subjective sense of relevance corresponds to real relevance in each given occasion; she keeps her mind on her goals, and attends to the things that are relevant to them; but whenever something outside of her task's realm needs to be taken under account, her attention is captured by it, which enables her to find an appropriate response. This is obviously an ideal, and I present it, as well as the aforementioned idealized extremes, as tools for the analysis of the effects of the social digital media on our habits of

attention. So let us return now to that question. In terms of endogenous versus exogenous relevance, are social media bringing us closer to, or pulling us further away from, the virtuous mean of attention? Before answering this, we should ask: how are we, for the most part average Western human beings, located with respect to it?

Akratic attention

A large body of evidence suggests that our normal habits of attention deviate from virtuous attention in quite a number of ways, by systematically misattributing relevance. For instance, we tend to see losses as excessively more relevant than gains, and to see immediate pains and pleasures as excessively more relevant than distant pains and pleasures.[8] Moreover, and to the present point, we seem to be more easily distracted than the virtuous agent would be, since average human cognitive and executive capacities are severely limited. It is very hard to keep our attention focused on the same task for long spans of time, especially if this requires filtering out distractors.[9]

This implies that we are rather bad at multitasking. More precisely, we rather suck at it. Some people are better at it than others, granted; but we should rather say that some people suck less at it than others. The key problem is that, as it turns out, we cannot process multiple threads of information in parallel, because our core capacity for effortful information processing—called 'working memory'—works serially, i.e. one bit of information at a time. Since true multitasking would imply processing multiple streams of information through multiple processors, but we have only one working memory, we cannot truly engage in true multitasking. What we can do, instead, is shift between tasks. Task-shifting is generally less effective than serially performing one task and then another, because each task implies attributing relevance to different things, and so things that are relevant for one task become distractors for the other tasks. So multitasking (or rather, task shifting) implies a loss of efficiency, because we have to add the costs of task shifting (of redistributing relevance and

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[8] These phenomena are called 'loss aversion' and 'hyperbolic temporal discounting' in the literature. For the former see Tversky and Kahneman (1981); and for the latter, Ainslie (2001).
[9] See Ophir et al. (2009).

cancelling the prior distribution of relevance) to the costs of serial processing. People who say that they are good at multitasking may just be bad at noticing how inefficient they become.[10]

So it is harder for us to keep endogenous control of attention than it is to have it exogenously captured by a diversion, and multitasking increases the likelihood of distraction. This suggests that we are closer to the vices of hyper-distraction than to those of hyper-concentration. In fact, we could say that we tend to suffer from a sort of 'akratic attention': like the children who eat the marshmallow before the adult returns, even if we wish to keep our focus on the larger, later reward (a consistent exercise routine, a healthy work-life balance, a committed romantic life…) we often cannot help but be distracted by the temptations of the smaller, sooner rewards in front of us. So our attention is akratic in the sense that we tend to lack the self-control we wish we had. External diversions tend to capture more of our attention than they should, like when we spend too much time on Facebook, or end up jumping from one hyperlink to another. We easily procrastinate to avoid performing the most difficult, most attention-demanding tasks. We crave novelty and get all too easily bored, and this often results an overall pattern of attention that lacks unity, that is spread toward many directions and fails to make unifying sense. Of course, there are people who successfully control their attention and achieve their long-term goals without too much effort; there even are people who go to the other extreme and obsessively control the minute aspects of their lives. But excess of distraction is much more common than excess of rigidity when it comes to attention.

(How) Are social media changing attention?

If self-control depends crucially on our proper distribution of attention, i.e. on our proper attribution of relevance, if the virtues and vices of attention are as presented above, and if we tend to have a rather akratic attention profile, what are the effects of social media on our attentional capacities? Are they changing the way we shape our selves? And if so, is this change for good or for bad? I move on now to summarize what the available evidence says on this issue, and speculate about the possible effects that social media is likely to have on our attention and self-control in the future.

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[10] See Karpinski et al. (2012) for a review of multitasking in relation to social media use.

Two diverging attention profiles

The explosion of social media is still very recent, and science has a lot of catching up to do. For now, we have only a handful of studies that try to establish the relationship between social media, attention, and self-control. Keeping in mind that we are just starting to delve into these issues (and so what follows is largely provisional, and should be revised in light of new evidence), this is what we know so far.

Several studies suggest that high levels of social media engagement are associated with lower academic performance, especially in heavy multitaskers. The more people tend to multitask between using social media and studying, the worse they do at the latter.[11] And the harmful effects of social media seem to go further than that: a recent study found that people were worse at exercising self-control after five minutes of browsing Facebook than after five minutes of browsing CNN.com. In comparison with the CNN group, those in the Facebook group were more likely to eat an unhealthy snack over a healthy one (thus showing they are more likely to succumb to temptation), and tended to persist less in a difficult task (thus revealing they tend to be distracted or give up more easily). Researchers conclude that "the effect of social network use on individuals' abilities to exhibit self-control is concerning, given the increased time people are spending using social networks".[12]

Besides lower academic performance and lower self-control, higher levels of social media use are also related with a lower ability to filter out task-irrelevant stimuli. In other words, people who report spending more time using social media like Facebook and Twitter have also been found to do worse at endogenously controlling their attention. More frequent social media users, it seems, are more distracted people—especially if they use social media in multitasking situations, a trend that is increasingly popular, and increasingly demanded by jobs that require immediate reaction to messages and emails.[13]

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[11] E.g. Rouis et al. (2011); Karpinski et al. (2012).

[12] Wilcox and Stephen (2013). It is worth noting that only those who reported <u>strong social ties</u> with most of their Facebook contacts presented lower levels of self-control. The effect was not found in the weak-ties group.

[13] Ophir et al. (2009); Rouis et al. (2011); Alloway and Alloway (2011; 2012); Karpinski et al. (2012); Wilcox and Stephen (2013).

This all looks admittedly grim. But interpretation of these data demand caution: here, as elsewhere, we must be extremely vigilant not to confuse correlation with causation. Given the way these studies were designed, all we can infer from them is correlations, and not causal links.[14] Thus, so far we know that high social-media usage is *associated with* lower levels of attention and self-control; but from this association we cannot infer that social media *are causing* an erosion of attention and self-control. This is because several different possibilities remain open: it may be that something else (say, lack of sleep or dietary deficiency) is causing *both* high social-media use and low self-control; or it may also be that it is low self-control that causes higher levels of engagement with social media. In fact, many of the researchers suggest that people who spend less of their time on Facebook and the others may do so *because* they are better at self-regulating and more goal oriented, so that their concern for their performance in school or at work may be controlling their use of social media and their multitasking tendencies by making them better able to focus their attention endogenously. We also do not know whether people are currently more distracted or less self-controlled than before: evidence of a different, harder to obtain kind would be required for that.[15]

So is social media causing us to be more distracted? We simply do not know. This should give any Platonist pause. That said, what we do know is that people who are more actively engaged in social media also tend to be more easily distracted. In fact—and to put it in less evaluative terms—, what researchers have found is that social media use seems to mark a distinction between two divergent profiles of attention, which they call "breadth-biased" and "focused" attentional control.[16] I will refer to this as the distinction between a *broader* attention and a *deeper* attention.

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[14] On why obtaining causal evidence in this case is particularly difficult, see Karpinski et al. (2012, 10).

[15] A recent statistic quickly became viral, stating that our attention span had diminished in recent years. Researchers from Microsoft Canada (2015) say that the average human attention span (the average time we spend on a single task before getting distracted) was 12 seconds in 2008, but went down to 8.25 seconds in 2013. The attention span of a goldfish is 9 seconds, so now we have become more easily distracted than goldfish. This, like any scientific-sounding factoid found online, should be taken with some skepticism. Microsoft cites "Statistic Brain" as its source for the human-goldfish attention span comparison. This turns out to be a website, in which the data are indeed reported. But none of their sources seem to check. So the whole thing turns out to be based on a made up rumour.

[16] See Ophir et al. (2009) and Lin (2009). Many of the previously cited researchers make an analogous distinction.

Such divergence may be enough for Platonism 2.0 to get off the ground. If social media are linked to a broader attention profile—which is in turn associated to higher levels of multitasking, lower levels of self-control, and higher rates of distraction—, then the use of social media is associated with a shift away from an akratic attention and toward a vicious, hyper-distracted attention. Even if social media are not causing this problem, they surely are not helping to solve it. Ultimately, then, the evidence supports the view that Web 2.0 multitasking goes hand in hand with lower levels of control over the shape of one's life, with a weaker construction of one's self; so that if they are not the root cause of the problem, they still are far from being a part of the solution.

This Platonist comeback makes sense, but it is arguably not inescapable. For as Plato could not have foreseen the possibilities for self-construction opened up by the technologies of the book, we may be unable to foresee the new paths of self-construction enabled by the new digital media.

New medium, new self?

I have portrayed self-control as the ability to shape one's own life by determining which desires and intentions are effectively translated into actions, and thus more globally as the subject's capacity to give a specific contour to her own identity. Self-control is grounded on the capacity to persist in one's plans in the face of obstacles, and persevere in the face of temptations; it is sustained by the subject's stubborn will to shape her own self. The view of the self as something that the individual generates, sustains, and nurtures from within, by exerting selective control over her desires and intentions, is at the core of the new Platonist's concern. Platonism 2.0 is the alarm of a self that sees that its means of self-forging are taken away from under its feet.

Those means were—among others, but crucially—the technologies of the printed book, and their widespread use. The dominance of the book as a medium meant that a single person could dig deeper than ever into her own consciousness, and expose in meticulous detail what was there to be found. This is what made modernity's novels, philosophical treatises, and scientific monographs possible. The reader was also conceived of as a reflective individual,

capable of following the sometimes dense, often long, most of the time linear plot or line of thought exposed in the book. And thus writer and reader could form a community of reflective individuals capable of reasoned dialogue. The case can therefore be made that the printing press strengthened and, to some extent, generated this kind of linear, reflective, thoughtful agency, along with its ideals of self-control and autonomy.[17]

Now, with the drastic change of medium, a correspondingly drastic change of self may well be unavoidable. Electric mass media like television and radio transformed the slower speeds of the printed word, but retained its linearity and unidirectionality. Digital social media represent a more thorough transformation, because they add to the immediacy of electricity their hyperlinked and interactive nature. So now, instead of the slow-paced, monologic, and unidirectional medium of the book, and instead of the unidirectional and linear media like television, we have the massive, immediate, hyperlinked, and interactive media of the Internet. How will those radical changes in medium be reflected back onto the formations of agency and the self?

We will have to wait and see. One thing to look out for is whether the broader profile of attention will enable us to create new kinds of abilities. For although we do suck at multitasking, at the same time multitasking is crucial for our ability to acquire new skills. To see why, picture yourself trying to learn a new musical instrument. When you first pick it up, the difficulty of performing the most basic tasks is enormous: synchronizing the movements of fingers and arms and legs with the rhythms of the breath or the focus of the gaze requires our multitasking capacities at their maximum. But with practice, these different behavioural routines get automated and unified into action 'chunks', that we are better able to perform with less and less effort as we continue to practice. This is the effect of automation: we unify multiple complex behaviours into single units of synchronized, less-effortful action that we can then control intuitively. Practice makes it easier to identify the few really relevant bits of information, and thus liberates attention. That is how we learn how to simultaneously walk and talk, play the guitar and sing, take a Snapchat and hang out, etc.

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[17] This is an argument made by Carr (2010), which he himself traces back to McLuhan (1964).

Now, it is possible that new, broader forms of attention enable the emergence of chunked actions that were impossible for traditional, narrower attention profiles. As possible examples one may think of new kinds of musicians who now use the computer to simultaneously compose, mix, perform, and promote—processes which were until recently quite distinct, and for which separate specialists were needed. This may open up new, vast creative spaces that were previously unthinkable, new kinds of activities, skills, and trades. If computers and smartphones are understood as general-purpose extensions of working memory, and the Internet as a general-purpose extension of our senses (both bodily and social), then the possibility exists for novel and unforeseen forms of chunked actions that externalize the cognitive costs onto the computers and the Web, while merging multiple threads of diverse behavioural routines into coherent, basic actions that we have until now been unable to perform. Along these lines, the transformative broadening of attention generated by new social media would enable us (or rather, future generations) to engage in multimodal, collaborative, multidisciplinary, geographically discontinuous actions that are still unimaginable today, much as the individualizing, deepening actions made possible by the book and the press were unimaginable for Plato.

If this is what novel actions will look like in the future, what may the future self be like? This will have to be a less endogenously-determined self, based more on its exogenous responsiveness to multiple threads of online stimuli than on its capacities for planning and maintaining focus, more on new ways of quickly coordinating with others (on the reactions it gets from others in the social media) than on the old capacities for slowly constructing a long-term individuality. An emergence of this new kind of self should lead us to reassessing the virtues and vices of attention. The new virtuous middle, corresponding to the new virtuous self, may move away from the hyper-concentrated, and closer to the hyper-distracted. Only that now we should probably not call the attentional capture by features extraneous to one's current task 'distraction', but rather 'responsiveness', 'alertness', or 'embeddedness'. A broader attention has the ability to be more attuned to what is relevant out there, beyond my own individual plans and goals. The new, online self would thus redefine how we should understand

what is truly relevant, making it more about being attuned to the flows of information than about staying focused on my current mission.

This all sounds very neat. But it is probably wrong. For it loses sight of one key feature of skill acquisition: it is slow, it is hard, it is effortful, and it requires persistence. This persistence is what makes some people become great guitar players while others never learn more than a few chords. And at the highest levels, the greatest persistence is what distinguishes world-class performers from great performers. There has recently been a fascinating debate about the nature of skill and expertise, in which anti-intellectualists (led by Hubert Dreyfus) defended that as an agent progressed in skill she needed less and less executive control of attention, until when she finally reached the level of expert she could do without it entirely, merely following intuition and feel. This has turned out to be very controversial, and the most recent, most exhaustive empirical evidence seems to go against it, and lean in support of a more intellectualist view, according to which attentional control is required even at the highest levels of expert performance. As you become more skilled and advance to the higher levels of an art, a sport, a craft, etc., things also become more difficult, and the possible diversions increase enormously. In order for experts to perform at their best they need to stay focused. And this implies great endogenous control of attention.[18]

If the intellectualists are right, then (as I argue elsewhere that they are)[19], then Platonism 2.0 still has the upper hand regarding the effects of social media on agency and the construction of the self. Acquiring a skill in more distracting environments requires <u>even more</u> endogenous control, because agents need control over their attention to thread the multiple behavioural components into a meaningful, unified action. Without this great level of endogenous attentional control, what is most likely is that, in the short run, agents end up lost in their multitasking, having forgotten mid-performance what it was they were trying to do in the first place; and that, in the long run, agents will end up unable to create new, flourishing

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[18] The classical anti-intellectualist position was developed by H. Dreyfus as a reading of phenomenologist Merleau-Ponty (see e.g. Dreyfus (2002); Dreyfus and Kelly (2007)). Recent anti-intellectualists (like Brownstein (2014)) have had to face a resurgence of a refined kind of intellectualism (e.g. Fridland (2014); Montero (Forthcoming)). For in-depth discussion.

[19] Bermúdez (Forthcoming).

skills and virtuous selves, rather generating incoherent, haphazard characters and identities. Even multitaskers need executive attentional control to reach the heights of skill and expertise. Therefore, even new generations will probably need self-control to generate new kinds of selves.

Concluding remarks: A dream left unfulfilled

Here is a final question: if the emergence of a new dominant medium implies that something proper to the previous one will necessarily be lost, what is it we are likely to lose? And how fundamental and crucial will that loss be?

Much like the previous questions, for the most part we will have to wait and see. But this much seems certain: the Enlightenment dream, in which each individual will be able to abandon his tutelage and think for himself, thus forming a community of autonomous minds able to engage in careful, reasoned debate about any issue, no matter how thorny, is likely to become increasingly distant as we move to the new world of multitasking, and distraction. For, arguably, the rise of immediate, massive, interactive media has coincided with the rise of an emotivism and intuition in the public sphere that tends to bury dispassionate reflection and reasoned debate under a mountain of gut feelings and intense reactions, all quickly expressed, replicated and made viral through Facebook and Twitter.

This, again, is sufficient ground for a Platonist worry, particularly considering that the most pressing problems of the contemporary world—like climate change and global economic inequality—tend to be very hard to understand, require much deep reflection, and not be easily communicated in 140 characters. Some kinds of content are better suited for micro-expression via tweets, and for comprehension by short attention spans, and they, again, often coincide with reactionary, emotional messages that people can understand intuitively. So what we may ultimately be losing, if we lose the dream of the Enlightenment individual, is the very possibility of a functional, reflective democracy that is capable of discussing a topic without being distracted away from the topic by a tweet-worthy, rhetorical sleight-of-hand.

One may think, then, that digital technology, being an 'extension of man', may help us better understand these problems and more effectively come up with reasoned consensus

about them.[20] But the problem is that technology, as far as social media are concerned, seems to be pulling in the other direction, favouring attentional breadth over attentional depth, brief spouts of impulse over careful and dispassionate reflection. Instead of building new scaffolds for our attentional control, new technology may be removing the previously set-up scaffolds. (This is, of course, partial. There are new Internet-based scaffolds; it just seems that the new diversions are more powerful, but this is a topic for another essay.)

So, will the cognitive extensions of technology lead us toward a renewed Enlightenment? Or will they push us away, and into a social formation that is at the same time newer (in its massive synchronicity) and more archaic (in its focus on collective intuition rather than individual reflection)?

For now, the jury is still out. But I would not get my hopes up.

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[20] The diagnostic of the problem of speed in the public sphere, and the possibility that technology, among other environmental scaffolds, may extend our cognitive systems, is put forward in Heath (2014).

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