WESLEY UNPLUGGED:
A WESLEYAN EVALUATION OF THE DIGITAL MEDIA REVOLUTION

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Over the last thirty years, the world has been experiencing a digital information revolution. Doubtless digital media have brought remarkable new possibilities for sharing and accessing information, not to mention opening the possibility for nearly constant interpersonal connectivity. While some have unquestionably embraced this technological change as the next stage of human cognitive and social evolution, and others have categorically decried it, the vast majority of people seem to recognize these developments as a mixed blessing—but one on the whole more positive than negative. As the wired revolution has become increasingly unplugged with wireless networking, the once only imagined possibility for constant connectivity has for many become a reality. Ubiquity has been accompanied by a sense of dependence—no longer confined to the realm of novelty, hobby, or even convenience, digital connectivity now appears to many an indispensible part of contemporary life.

The overwhelming acceptance of digital media in contemporary society should not, however, preclude critical analysis. For Christians who consider themselves John Wesley’s spiritual heirs, it does not seem inappropriate to analyze the Christian’s relation to digital media through a Wesleyan lens. In order to do this, it seems wholly appropriate to begin by asking how John Wesley would have responded to contemporary digital media.¹ I hope to make the case that the position consistent with Wesley’s thought and commitments is to see the digital information revolution as overwhelmingly detrimental to Christians spiritual development and growth in sanctification as a result of the neuropsychological effects of digital media.²

¹ Seeing that Wesley’s death predates the digital revolution by some 180 years, we unfortunately do not have the convenience of simply reading Wesley’s opinion on the matter—we will have to employ some conjecture and theological simulation.

² I have chosen to limit my argument for a Wesleyan position on digital media to an evaluation of only the neuropsychological effects of digital media. One could certainly provide a more extensive evaluation of the relationship between Wesleyan thought and the contemporary information revolution, including such considerations as the social effects of digital media, the relationship between digital media and consumerism, and the environmental costs of the hardware and energy consumption necessary for consuming digital information. While it is my intuition that an analysis of any of these other facets of digital media would only strengthen the case that such
Certainly some—possibly even most—will respond to such an assessment with surprise. After all, many may see Wesley’s heavy investment in information technology through printing, editing, and distributing as a reason to draw the opposite conclusion. And in actuality I will argue in the first part of this paper that Wesley not only embraced and helped facilitate the growth of information availability, but that he was actually participating in an important 18th century print media revolution that has many parallels with our own information age. However, despite Wesley’s embrace of his own information revolution, I will argue that Wesley would still reject the contemporary media revolution because of one important distinguishing factor between the two, viz., the media themselves. Unlike print media, digital media prove detrimental to an individual’s capacities for concentration, deep reading, and synthesis. Seeing as these are all skills that Wesley either believed necessary for spiritual growth or are related to essential spiritual disciplines, I argue that Wesley’s theological and practical commitments require the rejection of much of the contemporary digital revolution.

In the final section of the paper, I will argue for the practical application of this Wesleyan response in the lives of individual Christians and church communities. The incompatibility between digital media and Wesleyan commitments is founded upon essential, rather than marginal, aspects of Wesley’s thought, meaning that, insofar as one wants to claim identity as a Wesleyan Christian, such an assessment should be taken very seriously. Thus, while it may not be necessary to fully abstain from all digital media (although this very well could have been Wesley’s own position), Wesleyan Christians will need to find ways to greatly limit exposure and reliance upon digital media in everyday life.

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media are deleterious from a Wesleyan perspective, and there is certainly tremendous value in exploring these other elements, I have chosen to circumscribe this analysis to only the one. Any exploration that seeks both the requisite thoroughness and would take account of all of these facets would require a much lengthier treatment. Furthermore, I hope to demonstrate that even arguing from only the neuropsychological effects of digital media will be sufficient for establishing a strong opposition between Wesleyan thought and practice and digital media.
I. A Tale of Two Revolutions

There can be little doubt that the ability to share information has undergone a massive transformation over the last thirty years, so much so that this period in history has come to be known as the “information,” “computer,” “digital,” or “new media” age. The emergence of this information age was facilitated in turn by the “digital revolution,” which resulted from the creation of digital logic circuits and subsequent technologies such as computers, fax machines, and cellular telephones. In its early stages, digital technology remained relatively limited in capacity and large in size, thus restricting the range of possible applications and the amount of information contained in digital format. However, with technological advances that began in the late 1980s allowing for reductions in size and increases in storage capacity and speed, digital technology began to take on a more prominent role in storing and transmitting information. After 2000, digital media held not only a prominent role in this regard, but actually far outpaced analog data storage. By 2007 there existed the equivalent of 18.86 billion “gigabytes” of analog data worldwide compared to 276.12 billion gigabytes of digital information (this compared to 1986 when digital data comprised only 0.02 billion gigabytes to analog’s 2.62 billion).³

The technological capacity for digital information storage and transfer helped facilitate the contemporary information era. The new media age has its origins in the creation of personal computers in the late 1970s and early 1980s and the creation of the internet. In the late 1980s and early 1990s, the World Wide Web allowed the internet to become a platform for sharing large amounts of information. Paralleling these developments in computing were developments in mobile communications technology, principally in the form of cellular telephones. Cell phones became increasingly popular in the 1990s, and the early 2000s saw an explosion in the use of text

messaging as a primary means of communicating. The creation of and rise in popularity of social media networks such as Facebook, MySpace, and Twitter around 2005, along with the development of other user generated and manipulated web platforms such as wikis, podcasts, and blogs, led to what many have been calling “Web 2.0.” Finally, improvements in wireless internet access have effected both the convergence of cellular and personal computing technology in the form of “smartphones.” In addition, the internet—formerly only available through cables and thus tethered to specified geographic locations—could now be accessed nearly anywhere.

One can clearly see a correlation between increased digital data usage and technological advances that have facilitated faster, cheaper, and more mobile access to that data. This increase in available digital data has likewise corresponded to an increase in the number of individuals accessing that information. For instance, in the United States, the percentage of individuals with internet access rose from 43.08% to 81.03% between 2000 and 2012. These patterns are not, however, limited to the United States. The International Telecommunication Union reports that between 2005 and 2013 the number of individuals using the internet rose from 2.4%-16.3% in sub-Saharan Africa; 8.3%-37.6% in the Arab States; 9.4%-31.9% in Asia and the Pacific; 10.3%-59.1% in the Commonwealth of Independent States; 46.3%-74.7% in Europe; and 35.9%-60.8% in the Americas taken as a whole.

The internet’s increasing ubiquity has been accompanied by a steady increase in the amount of time individuals spend on the internet. Nicholas Carr reports that in 2009 “adults in

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North America were spending an average of twelve hours online a week, double the average in 2005.\textsuperscript{7} This number is much higher among young adults, who were averaging closer to 19 hours a week online. In terms of cell phone usage, the most prominent increases have come in the form of text messaging. In 2009, the number of text messages sent and received in the United States rose to four times the 2006 numbers, and American teenagers were sending on average 2,272 text messages a month.\textsuperscript{8} Clearly, the proliferation of digital media has reordered the patterns of daily life, if for no other reason than the considerable time spent engaging digital media that would have otherwise been spent in other activities.

The current information revolution is after all only the most recent of a series of historical developments resulting in greater volumes of information being stored and transmitted. These technologies range from those for recording information (e.g., the development of writing), media for conveying that information (e.g., paper, codices, and books), and methods of receiving information (e.g., the development of silent reading practices). When one conceives of revolutionary developments in the history of information in the early modern era, the 18\textsuperscript{th} century does not, however, usually come to mind. Owing to a penchant to look at information revolutions primarily through the lens of technological innovations, Gutenberg’s 1445 creation of the printing press and movable type are normally seen as the primary information revolution prior to our own. There can be no doubt that Gutenberg’s press not only made more information available to more people, but also helped to profoundly alter the shape of world history. Seen through the lens of material technological change, the 18\textsuperscript{th} century has little to offer that would allow one to find an “information revolution” during this time.

\textsuperscript{7} Nicholas Carr, \textit{The Shallows} (New York: W. W. Norton, 2010), 81.
\textsuperscript{8} Carr, \textit{The Shallows}, 82.
However, if one focuses on dramatic changes in the availability and distribution of information rather than simply information technologies, the increased distribution and consumption of print media during the 18th century, particularly in Great Britain, is rightly considered a kind of information revolution. James Raven points out that “after vigorous growth from the late 1690s, publication rates mushroomed between the 1740s and the end of the century.” The extent of this growth is easily seen in the change in numbers of printed titles available: before 1700 there were 1800 printed titles produced yearly, but by 1800 that number had increased to 6000. Even more impressive was the increase both in the number and quantity of newspapers produced. Outside of London, there were “twenty-four in 1723, thirty-two in 1753 and thirty-five in 1760, to fifty in 1782.” “50,000 copies of provincial papers were sold a week in 1700, 200,000 in 1760; sales doubled by 1800.”

Access to print material, while more readily procurable by the upper and middle classes, was by no means limited to them. It is true that books still remained relatively expensive at the time, such that “a new novel would cost at least 7s 6d., a work of history or belles letters a guinea.” However, these works became available through the flourishing of cheaper pirated editions, the ready availability of second hand books, and through publishers’ selling books in serial form to spread out the cost. The proliferation of circulating, proprietary and subscription libraries in the 18th century further provided access to books to those who could not afford to buy them. By 1800, 122 circulating libraries were operating in London alone, with 268 additional

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libraries operating throughout the rest of Britain. Furthermore, the explosion of newspapers and other periodicals—much less expensive than bound printed material—dramatically increased the availability of print media to the poor.

As was stated above, the primary causes of the expansion of print culture in 18th century Britain had little to do with innovations in information technology. The driving forces behind the expansion of available print material appear to have been primarily the result of a complex set of factors related to politics, transportation infrastructure, and society. In terms of political forces, one of the most important was the lapsing of the Licensing Act in 1695. This act had severely limited the ability of printers in England to work outside of London, Oxford, and Cambridge—essentially creating a print monopoly in those places. The lapsing of this act allowed for the spread of provincial printing. After the lapsing of the act, just under 60 printing houses had been established in England by the middle of the 18th century, and “thereafter the number expanded at a much faster rate.”

That the rate that publishing houses were established increased after mid-century probably owes much to improvements in transportation infrastructure that began at that time. These changes allowed for faster and wider delivery of newspapers throughout many parts of England. After about 1760 there began to be marked improvements in internal transportation infrastructure, particularly in the forms of canals and roads maintained by turnpike trusts, that

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16 Porter, English Society, 235.
17 This is not to say that there were not developments. For instance, there was a wider introduction of higher quality, ornate typefaces, and there were improvements that allowed for cheaper and higher quality etching and engraving. Nevertheless, these changes represented improvements on conventional technology, and, in the case of improved typefaces, were limited to only available to publishers with the most capital and often only for those working in the capital. Regional and poorer publishers continued to use older, cruder typefaces (Raven 6-8).
18 Black, Eighteenth-Century Britain, 170. As Linda Colley points out, the Licensing Act did not affect Scotland, and as a result printing presses had flourished there since the early 16th century. Edinburgh in particular was seen as one of the world’s “greatest centers of printing,” and it “produced books, pamphlets and sermons for readers throughout Britain, Continental Europe, and the American Colonies.” Britons: Forging the Nation, rev. ed. (New Haven, CT: Yale University Press, 2009), 41.
19 Colley, Britons, 41.
facilitated faster transportation throughout the country. In turn the extended news circuits helped secure the solvency of many book publishers and distributors: “Newspapers became the mainstay of many printer-booksellers, most notably in the fastest growing of the towns outside of the capital.”

The rapid expansion of print distribution and its wider availability was matched by an increase in the general level of English literacy, particularly if one contrasts Britain to the Continent. “By the time of Walpole (prime minister from 1722 to 1742) most tradesmen, shopkeepers, and small farmers could read, and within twenty years so could about 40 per cent of all labourers and women, making England arguably the most literate nation in Europe.” It is unclear what the precise causal relationship between increasing literacy levels and available print material was, but there is no doubt that some reciprocity must have existed between the two.

There seems to be no doubt that increasing literacy levels helped to create a higher demand for print materials that was met by the increasing number of books being published, but especially by the proliferation of newspapers and periodicals. At the same time, there are clear instances where the shift to an increasingly literary culture would have made literacy advantageous. At a basic level, there was little incentive to learn how to read when there was little or nothing available to read. The increased accessibility of print material would have by itself yielded some benefit. Economic incentives toward literacy would likewise have existed. “The ploughboy could still rap on the farmhouse door asking for work, but skilled operatives would also scan the ‘situations vacant’ section of the newspaper.”

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What is unquestionable is the role that religious motivation played both in improving literacy, particularly among the poor, and in contributing to the growing body of printed material. Prominent among these enterprises was the Society for the Propagation of Christian Knowledge (SPCK), founded in 1698 with the purpose of “(1) improving the education of clergy through the establishment of libraries, (2) teaching poor children to read and write and understand the principles of the Christian religion, and (3) distributing Bible and devotional materials to poor families, servants, prisoners, soldiers, and sailors.” In these instances, the greater distribution of printed material and literacy was not motivated by a belief in the value of literacy or access to information per se, but rather from a fear of widespread irreligion caused by a lack of Christian education. Charity schools set up by organizations like the SPCK exposed a large number of poor children to some degree of education and undoubtedly contributed to the growing literacy among the laboring poor: more than 1700 charity schools had been established by Anglicans and dissenters by the end of the 18th century.

Consideration of the consequences of the expansion of printing in 18th century Britain should not be limited to mere quantitative increase. Rather, what emerges is a widespread belief and awareness that engagement with and affecting change in society required direct engagement with print media on an individual level. The SPCK exemplifies this attitude in the religious realm. Widespread ungodliness had to be countered by the widespread distribution of religious print material. This was also clearly the contention of enlightenment thinkers, who from the end of the 17th century began to link “the spread of letters to the growth of knowledge” with “the

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25 Porter, English Society, 166.
The expansion of newsprint had an important impact on British politics. The press, for instance, “played an important role in the rise of petitioning,” giving disenfranchised members of the population the ability to participate in the political process. Likewise, newsprint played a central role in the creation of public political opinion, and the failure of politicians to remain sensitive to their public images as presented in newspapers could have negative political ramifications.

Engagement with print culture was not, however, only seen as key for participation in the scientific, philosophical, or political worlds. A whole range of publications related to contemporary fashions “including design-books of ornament, prints, pattern and drawing books, and treatises on design,” in addition to newspapers and periodicals, helped to disseminate the latest trends in clothing, furniture, consumer wares, and art. These consumer goods and fashions also came to be increasingly desirable and accessible to the poorer orders of society, meaning that this need to stay “in the know” about current fashions was not limited to the elite. Staying up to date on popular consumer culture thus came to rely on participation in print culture, and the desire and ability to be fashionable extended to a much wider cross segment of the population than ever before.

The importance of the 18th century British expansion of print media was therefore the creation of a widespread print culture. Engagement with print media would no longer have been seen as exclusively the domain of a literate elite, or limited to certain intellectual endeavors. Instead, engagement with print media came to be seen as increasingly necessarily for everyday life, from religion to consumer behavior, by an rapidly expanding percentage of the population.

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If we look at Wesley’s work as author, editor, publisher, and book-seller, it becomes clear that he participated in the expansion of print media distribution, and furthermore that he was one of the primary players in the game. Wesley understood that access to print material was key to his movement. In a letter to George Holder, Wesley affirmed toward the end of his life that “it cannot be that the people should grow in grace unless they give themselves to reading. A reading people will always be a knowing people.”

Wesley’s importance in the expansion of available print material must be recognized. According to Frank Baker’s estimations, John and Charles Wesley issued “about 450 works each, in about 2,000 edition, averaging 2,000 copies each” over the course of their careers. This output made John Wesley, with the possible except of Daniel Defoe, the author, editor, or publisher of more works “than any other single figure in eighteenth-century Britain.”

Not only did Wesley prove instrumental in expanding the quantity of available printed material, but he also participated in the expansion of the variety and accessibility of print material. In addition to his own journals and sermons, Wesley also printed edited and abridged editions and collections of a wide range of devotional, literary, historical, and scientific material that he thought important for the spiritual education of his ministers and society members.

Wesley’s publishing also mirrored the larger trend of making print material available to all segments of society. Thus, the prices for Wesley’s volumes “varied enormously, from 1d for a short single work to 10s or more for multi volume collections.” This variety in cost allows us to see that “Wesley’s editions were aimed at those members of the Methodist societies who could

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31 Wesley, 8 November 1790, Letters (Telford), 8:247, quoted in Rivers, “John Wesley as editor and publisher,” 151.
32 Frank Baker, John Wesley London Publisher 1733-1791, cited in Rivers “John Wesley as editor and publisher,” 145.
33 Rivers, “John Wesley as editor and publisher,” 157.
34 Rivers, “John Wesley as editor and publisher,” 153-5.
35 Rivers, “John Wesley as editor and publisher,” 156.
afford short cheap books (the vast majority), the assistants who would keep the societies stocked, and the better off who could buy more expensive books for themselves and give cheap ones to the poor.”

The historical trend in Wesleyan studies has been to see Wesley’s print enterprise as representing something novel. However, other enterprises and individuals that preceded Wesley, such as the SPCK, had both similar aims in increasing the accessibility of spiritual literature in the larger culture and employed similar practices in editing and abridging the works they published. Even if Wesley was part of the vanguard of a new media trend (and he most certainly was considering the 18th century’s most rapid rates of print media expansion began around the 1740s), his work was a piece of larger cultural phenomenon rather than a unique instance of one.

Nevertheless, at least two important conclusions must be drawn about Wesley’s relationship to what I am considering the information revolution in 18th century Britain. First, while Wesley was not necessarily as novel in his methods or goals as has historically been argued, he nevertheless contributed substantially to the larger cultural phenomenon. Second, and the point that is important for the purposes of this paper’s argument, Wesley’s substantial participation in this phenomenon shows that he acknowledged and accepted the increasingly dominant beliefs about the need for the importance of print media in everyday life and a widespread reading culture. Interestingly, where Wesley might have been most “cutting edge” was in his belief about just how far this reading culture should extend. In an era in which most charity schools, such as those run by the SPCK, taught the poor only a “straight and narrow

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37 Rivers, “John Wesley as editor and publisher,” 146-8.
curriculum, principally reading and Scripture,”38 and only a select few taught writing, Wesley’s curriculum at the Kingswood School appears particularly liberal and expansive. Not only did students receive instruction in reading, they also were instructed in “writing, arithmetic, English, French, Latin, Greek, Hebrew, history, geography, chronology, rhetoric, logic, ethics, geometry, algebra, physics, and music.”39

II. Medium Matters as Much as the Matter Mediated

A comparison of these two “information revolutions” certainly reveals some striking similarities. Whether in an 18th century print or contemporary digital form, one can discern a pattern of a dramatic increases in the quantity of information being made more accessible to a larger number of people. From the fact that Wesley seemed so readily to participate in his own information revolution, one may argue that Wesley, had such technology been available to him, would have likewise embraced digital media as a positive development and made use of its ability to more quickly disseminate material. Some may even go so far as to argue that Wesley’s circulation of his own journals and sermons represented a kind of “proto-blog,” and that this shows he would have been an avid participant in social media. As I said in the introduction, I believe that Wesley would have had major reservations about digital media in a way that he did not about print. However, in order to fully explain why I believe this to be the case, we should first turn to one line of argumentation against the compatibility of Wesley’s thought with digital media that I believe does not work.

One could try to muster the argument that Wesley would oppose digital media on the grounds of content, citing that the explosion of information available through the internet has provided easy access to material that Wesley would have vehemently opposed, such as internet

38 Porter, English Society, 166.
39 John Wesley, A Short Account of the School in Kingswood, near Bristol.
pornography. However, there is nothing new about the increase in pornography during this information revolution. During the 18th century, “erotic literature multiplied almost unchecked, from John Cleland’s *Fanny Hill* (which netted the publisher, Ralph Griffiths, £10,000) to sentimental tales of titillation, such as *The Innocent Adulteress, Venus in the Cloister* or *Cuckoldom Triumphant*, and salty accounts of adultery trials.”40 Whether Wesley was aware of the full extent of the explicitly pornographic literature of the time, he did have an awareness of books that he deemed to “not tend to the knowledge or love of God,” and in the 1743 General Rules Wesley urged his followers to avoid such works.41 If the explosion of “unsavory” content that accompanied the 18th century print revolution was not enough for Wesley to disengage from participation in that media revolution, it seems unlikely that this fact alone would be enough for Wesley to denounce the current one.

I believe that the much more fruitful line of argument in terms of determining what Wesley’s posture toward the new media revolution would be comes from a comparison of the media themselves rather than the content conveyed by those media. In comparing the different media themselves one sees the greatest difference between the revolution of Wesley’s time and of our own. The centerpiece of my argument is that the different media, even if they were to convey the same information, actually have different neuropsychological effects. I will argue that the effects of print media reinforce what Wesley saw as important for spiritual maturation, while current digital media undercut these desirable traits. Thus, I believe it possible to show how it is fully compatible with Wesley’s thought for him to have embraced his media revolution while showing that he would likewise reject ours.

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Various media must be understood first of all not simply as passive instruments in their conveying information. Media, whether they be clay tablets, different writings systems, paper, or a digital screen and keyboard, are different intellectual tools, and, like all tools, actually effect changes in the brains and behaviors of the users of those tools. For instance, experiments on primates who have been trained to use rakes and pliers to reach food that would otherwise have been out of reach have shown that not only was there “significant growth in the visual and motor areas involved in controlling the hand that held the tools,” but that furthermore “the rakes and pliers actually came to be incorporated into the brain maps of the animals’ hands.”\(^4\) Such changes are not limited to non-human primates. For instance, a study of the cortical areas associated with left-hand sensation has shown that these areas are significantly more developed in violin players than in non-players.\(^3\)

The capacity of the brain to adapt to stimuli from tool use owes to a brain phenomenon known as neuroplasticity. Historically neuroscientists believed that while the brain is malleable during childhood, it would “harden” at maturation into an unchanging form. The historical belief was that:

> Our neurons would connect into circuits during childhood, when our brains were malleable, and as we reached maturity the circuitry would become fixed. The brain, in the prevailing view, was something like a concrete structure. After being poured and shaped in our youth, it hardened quickly into its final form. Once we hit our twenties, no new neurons were created, no new circuits forged. We would, of course, continue to store new memories throughout our lives (and lose some old ones), but the only structural change the brain would go through in adulthood was a slow process of decay as the body aged and nerve cells died.\(^4\)

While this view of the brain still remains pervasive in popular culture, the unfolding evidence from neuroscience has strongly challenged the historical belief. While the brain does lose some of its capacity to reprogram itself as we age, i.e., it loses some of its plasticity, it still remains

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\(^4\) Carr, *The Shallows*, 16-17.
remarkably plastic throughout adulthood. Research by Alvaro Pascual-Leone, a neurology researcher at Harvard Medical School has shown that “plasticity is the normal ongoing state of the nervous system throughout the life span.”

The malleability of the brain is certainly triggered by physical stimuli (such as tool use), but such physical stimuli are not solely responsible for brain “reprogramming.” Pascual-Leone performed an experiment in which he had two groups of non-musicians practice the same melody on the keyboard over the course of five days. One group he had practice by playing the physical keyboard and the other he had practice simply by imagining playing the keyboard. The brain scan results of these two groups demonstrated that “the people who had only imagined playing the notes exhibited precisely the same changes in their brains as those who had actually pressed the keys.”

Plasticity does not equate, however, with an infinite capacity of the brain to develop and retain new skills. Instead, plasticity appears to be the brain’s mechanism of allocating limited resources to adapt to the needs posed by new stimuli. For instance, studies in the late 1990s determined that experienced London cab drivers’ posterior hippocampuses, the region of the brain associated with spatial manipulation and retention, were much larger than normal, and the “longer the cab driver had been on the job, the larger his posterior hippocampus tended to be.”

However, this growth in the posterior hippocampus corresponded to smaller than normal anterior hippocampuses, leading researchers to believe that this diminishment of the anterior came as a result of the enlargement of the posterior. Furthermore, the areas of the brain that seem to diminish as others are used are not random. Rather, it is the least used neural circuits that

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diminish in order to free up resources for the most used. The result of this, as Norman Doidge reports, is that “if we stop exercising our mental skills, we do not just forget them: the brain map space for those skills is turned over to the skills we practice instead.”

A final important feature of the brain’s plasticity is that “the chemically triggered synapses that link our neurons program us, in effect, to want to keep exercising the circuits they’ve formed.”

The more that a particular thought or behavior pattern is performed, the easier it becomes to continue performing that thought or behavior, and the more difficult it becomes to undo that pattern.

To summarize, neuroscience has determined that the brain, far from being unchanging in adulthood, has the ability to rewire its neural circuitry in response to both physical and mental stimuli. However, this rewiring does not mean infinite expansion, and the brain strengthens neural pathways to accommodate new thoughts and practices at the expense of less used ones. As these pathways strengthen, they simultaneously become easier to reengage and more difficult to disengage. In other words, the more we engage thought and behavior patterns, the easier it is to perform those patterns and the more difficult it becomes to overcome them. Conversely, the less we perform thought and behavior patterns, the more difficult it is to engage them, possibly losing them altogether.

Having explored the potential for technology and human behavior to affect the brain throughout the whole extent of human life, we can now turn to evaluating the differences between how print and the digital media affect the individuals who consume them. While binding methods differed considerably from medium to medium in Wesley’s day (e.g., octavo and duodecimo book formats, newspapers, periodicals, pamphlets, etc.), what they shared in

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51 As an interesting digression, the current research in neuroplasticity appears to find profound parallels in Wesley’s psychology, particularly as he understood habits and affections.
common was that they were printed text on paper. While more pronounced in books, all of these media allowed for the possibility of cultivating deep reading practices. Without giving an extensive history of developments in print technology, there was one innovation in particular (besides writing itself) that allowed for the development of media that could facilitate deep reading practices.

This change was orthographic. While in the ancient world most texts were written in *scriptura continua*, i.e., continuous text without space between words, from the beginning of the middle ages writing came to increasingly include word spacing and punctuation. The mere act of reading texts that were written in *scriptura continua* required a tremendous amount of cognitive effort on the part of the reader:

> Readers’ eyes had to move slowly and haltingly across the lines of text, pausing frequently and often backing up to the start of a sentence, as their minds struggled to figure out where one word ended and a new one began and what role each word was playing in the meaning of the sentence. Reading was like working out a puzzle. The brain’s entire cortex, including the forward areas associated with problem solving and decision making, would have been buzzing with neural activity.\(^5^2\)

With the advent of word spacing and punctuation, readers’ brains had a tremendous amount of cognitive energy freed up that had previously been dedicated to deciphering texts to be applied to deciphering the meanings of texts. This freeing up of brain power allows the brain to integrate more “metaphorical, inferential, analogical, affective background and experiential knowledge” into the reading of a text.\(^5^3\) With these changes in writing conventions “even readers of modest intellectual capacity could read more swiftly, and they could understand an increasing number of inherently more difficult texts.”\(^5^4\)

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\(^5^2\) Carr, *The Shallows*, 57.


The ability to read an extended piece of writing such as a book is not, however, a natural process. Reading deeply requires the ability to give “sustained, unbroken attention to a single, static object.”\textsuperscript{55} However, the brain does not naturally exist in a state of giving single, unbroken attention to a single object for extended periods of time. The brain’s “default mode” is one of constant distractedness. The human brain has evolved in order to quickly focus attention on sudden changes in its sensory field. For most of human evolutionary history, this was a matter of evolutionary fitness, reducing “the odds that a predator would take us by surprise or that we’d overlook a nearby source of food.”\textsuperscript{56} Thus, the attention needed to focus on an extended piece of writing is a skill that must be cultivated. Research by Robert Desimone at MIT has shown that the ability to overcome distractions requires a rapid oscillations of neurons in the pre-frontal cortex, which takes “a lot of prefrontal brain power.”\textsuperscript{57} As we described above, those skills that are practiced more strengthen those regions of the brain associated with performing those tasks, and they also make performing those tasks easier. What this means is that the more people cultivate skills of deep reading, the more easily they can focus deeply in other settings.

The form that information comes in through digital media, particularly as it comes over the internet, is markedly different from the text of print media. Whereas print media focuses the attention of one sense (sight) on one single stream of print (and possibly some illustrations), the interactivity of information on the internet is delivered through a multisensory barrage. “The Net delivers a steady stream of inputs to our visual, somatosensory, and auditory cortices” including email chimes, the tactile and auditory experience of typing on a keyboard, and the myriad

\textsuperscript{55} Carr, \textit{The Shallows}, 60.
\textsuperscript{56} Carr, \textit{The Shallows}, 60.
different types of video and pictures that adorn websites.\textsuperscript{58} Even if one were to limit one’s internet exposure to text-heavy sites, one would still have the multiply stimuli of underlined hypertext, changing cursors, and the visual makeup of internet browsers themselves.

With the delivery of simultaneous or rapidly successive stimuli, the internet requires attention to be divided among multiple content streams. There are certain positive cognitive benefits that come along with consumption of information in this form. However, these benefits usually come in the form of “lower-level, or more primitive, mental functions such as hand-eye coordination, reflex response, and the processing of visual cues.”\textsuperscript{59} With regard to higher cognitive functions, the multi-sensory stimuli format of the internet seems to impede our ability to perform anything but the most basic fact gathering. Understanding and retaining extended arguments or coherent narratives are impeded by the format of the internet as a delivery medium, and these impediments only increase with the greater complexity of the subject under consideration. The ability to understand and synthesize concepts and arguments rests on the brain’s ability to transfer information from short-term working memory into long-term memory where it is retained and schematized. Working memory, unlike long-term memory, has a limited capacity for retention, with current data pointing to short-term memory being able to process no more than two to four pieces of information at any given time. The amount of information that is being received by the short-term working memory at any given time is known as “cognitive-load,” and it is possible for cognitive-load to far outpace short-term memory’s ability to process information into long-term memory.\textsuperscript{60}

The internet’s multi-sensory delivery platform provides a cognitive load much higher than the two to four pieces of information that short-term working memory can process. This

\textsuperscript{58} Carr, \textit{The Shallows}, 112.
\textsuperscript{59} Carr, \textit{The Shallows}, 135.
\textsuperscript{60} Carr, \textit{The Shallows}, 121.
“sensory-overload” means that most of what is being received at any given time does not make it into long-term memory and is therefore lost. Additionally, the information that is received and retained is from a variety of disconnected sensory sources. Thus, the ability to understand and retain an extended discussion from a single source (whether that be in the form of an extended narrative or argument) is undermined by the internet’s multiple information sources.

Even if one were to attempt to concentrate intently on one particular stream of sensory input, such as attempting to focus on reading one stream of text in an article, the high cognitive load provided by the multi-sensory stimuli undermines such an endeavor. Higher cognitive loads reduce one’s capacity to concentrate because concentration depends upon the ability of working memory to remember what it is that one needs to be concentrating on. The high cognitive load provided by the internet therefore works against the cultivation of extended attention spans.

However, the very multi-tasking of the internet makes it highly unlikely one would even attempt to concentrate deeply on one thing. If multi-tasking is an available option, our brains are incentivized to give into such a temptation. “Multitasking feels good because the body rewards it with neurochemicals that induce a multitasking ‘high.’ The high deceives multitaskers into thinking they are being especially productive.” Furthermore, the neurochemical high and corresponding sense of productivity (and it is a false one: studies indicate not only reduced single task productivity in heavy multitaskers—they actually become less adept at multitasking itself!) that incentivize concentration diminishing behavior online would both make such behavior more

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63 Cf. Ophir, Clifford Nass, and Anthony D. Wagner, “Cognitive Control in Media Multitaskers,” *Proceedings of the National Academy of Sciences*, August 24, 2009, www.pnas.org/content/early/2009/08/21/0903620106.full.pdf. Heavy media multitaskers become “less effective in suppressing the activation of irrelevant task sets (task-switching). This last result is particularly striking given the central role attributed to task-switching in multitasking.”
likely while using the internet and would likewise incentivize spending greater amounts of time using the internet. This seems particularly true if one is considering incentives to use the internet as a medium for gathering information, in contrast with traditional print media that do not facilitate multi-tasking and thus do not provide the same neurochemical incentives.\(^{64}\)

Just as one sees the increase in ability to concentrate of those who commit themselves to deep reading, one would expect that the capacity for concentration to diminish the more one increases one’s exposure to a medium such as the internet that hinder concentration. Such an intuition has been supported by research by Eyal Ophir, Clifford Nass, and Anthony Wagner at Stanford University. In comparing the ability to focus attention and filter out distractions by those who are infrequently engaged in media multitasking and those who engage in frequent media multitasking, they discovered that those who engaged infrequently in media multitasking had a greater capacity for attention control and “may find it easier to focus on a single task in the face of disruptions.”\(^{65}\) Those engaged in heavy media multitasking, on the other hand, “are more likely to respond to stimuli outside the realm of their immediate task” and “may be sacrificing performance on the primary task to let in other sources of information.”\(^{66}\)

It appears, then, that while both the 18th century information revolution and the current digital information revolution are similar in that both involve greater diffusion of information, they differ markedly in the effects that the means of delivering that information had on the ability to actually receive that information. The print media of the 18th century allowed for the cultivation of deep reading practices, including developing greater powers of concentration and

\(^{64}\) And indeed there are statistics that corroborate this intuition: “Of the four major categories of personal media, print is now the least used, lagging well behind television, computers, and radio. By 2008, according to the U.S. Bureau of Labor Statistics, the time that the average American over the age of fourteen devoted to reading printed works had fallen to 143 minutes a week, a drop of eleven percent since 2004. Young adults between the ages of twenty-five and thirty-four, who are among the most avid Net users, were reading printed works for a total of just forty-nine minutes a week in 2008, down a precipitous twenty-nine percent from 2004.” *The Shallows*, Carr, 83-84.

\(^{65}\) Ophir et al., “Cognitive Control in Media Multitaskers.”

\(^{66}\) Ophir et al., “Cognitive Control in Media Multitaskers.”
synthesis. The internet, however, seems to have precisely the opposite effect. The multi-sensory stimuli delivered by the internet diminishes the ability to read for comprehension and retention, and those who use it most experience this diminution the most. In addition to the regular reinforcement of internet usage habits that come with the brain’s adaptability, multitasking internet usage provides a neurochemical incentive to spend more and more time online. So, not only does time spent on the internet take away from time that could be devoted to developing deep reading skills—the format of the internet makes it more likely that one will devote increasing amounts of time to internet use.

I argue that this difference in the effects of the two media forms would be cause for Wesley’s denouncing the contemporary digital media forms. To begin with, Wesley had high expectations for readers. In his *The Christian’s Pattern*, a version of Thomas à Kempis’ *Imitatio Christi*, Wesley included an edited “Praemonitio ad lectorem” [advice to the reader] drawn from four different sources that included these exhortation:

*Thirdly*, Be sure to read, not cursorily or hastily; but leisurely, seriously, and with great attention; with proper pauses and intervals, that you may allow time for the enlightenings of the divine grace. To this end, recollect every now and then what you have read, and consider how to reduce it to practice. Further, let your reading be contained and regular, not rambling and desultory… Whatever book you begin, read therefore through in order: not but that it will be of great service, to read those passages over and over, that more nearly concern yourself and more closely affect your inclinations and practice… *Fourthly*, Labour to work your self up into a temper correspondent with what you read. For that reading is useless, which only enlightens the understanding, without warming the affections.67

Wesley is here describing a sort of reading that requires slow, critical, and integrative attention. One must concentrate on the material at hand to be able to not only comprehend the text’s cognitive meaning, but to go beyond to understand the text’s meaning for one’s own life. Such skills require a kind of reading that moves beyond mere intellective synthesis to the realm of the imaginative as one integrates the material under consideration not only into the conceptual, but

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also one’s own autobiographical, schema. In other words, what Wesley is describing and expecting is a sort of intense deep reading.

With our having seen a limited capacity for the working memory to integrate its contents into long term memory, Wesley (or the sources Wesley is commending) is completely right to demand that one read “not cursorily or hastily; but leisurely, seriously, and with great attention; with proper pauses and intervals,” in such a way that is “contained and regular, not rambling and desultory,” and with regular times to “recollect every now and then what you have read.”68 Print media facilitates the development of the necessary concentration skills for this very kind of reading. On the other hand, if one were to seek out a media that disposed one towards “rambling and desultory” reading, one would be hard pressed to find a better form than the internet with its multiple demands on attention, high cognitive load, and incentivizing of multitasking.

The negative consequences of the internet as a medium go beyond Wesley’s expectations for readers to the effects that the internet has on one’s capacity for concentration. Wesley saw attentive devotional and meditative practices as indispensible means of grace, and therefore extremely important for maturation along the path of sanctification. In addition to regular observance of the Lord’s Supper, the other two “chief” means of grace that Wesley commends to his hearers in his sermon “The Means of Grace” are “prayer, whether in secret or with the great congregation” and “searching the Scriptures (which implies reading, hearing, and meditating thereon.”69 Moreover, Wesley expresses the necessity of both of these means for all Christians, saying of prayer that there is “an absolute necessity of using this means if we are to receive any gift from God”; and of Scripture that “all who desire the grace of God are to wait for it in

68 Thomas à Kempis, The Christian’s Pattern (Manchester: R. Whitworth, 1740), viii.
69 John Wesley, “The Means of Grace,” II.1
Prayer, meditation, and deep reading of Scripture at the very least benefit from strong powers of concentration, if they do not unreservedly require them. To pray and meditate, one must filter out external distractions and focus on hearing the voice of God. In providing instructions for the best means of reading and meditating upon Scripture, Wesley advised that one “read with a single eye, to know the whole will of God” by having “a constant eye to the analogy of faith, the connexion and harmony there is between these grand fundamental doctrines, original sin, justification by faith, the new birth, inward and outward holiness.” Further, as one reads Scripture, we should pause frequently and “examine ourselves by what we read, both with regard to our hearts and lives.” Thorough reading of and meditating on Scripture require the same sorts of deep reading skills that Wesley demanded of those reading other spiritual works in order to not only follow the narratives and arguments of the text, but to draw connections between various texts and integrate them into one’s own life.

Whereas greater exposure and involvement with print media have the potential to develop powers of concentration that can be extended to a deepening life of prayer and mediation, the use of the internet hinders the development of such powers. The internet thus proves to be detrimental to the life of prayer and meditation that Wesley expected of Christians.

Having given an account of the ways in which the internet as a media form differs markedly in its effects upon people from the print media, and the ways in which these effects hamper the development of capacities that Wesley saw as central to Christian maturation, I am confident that Wesley would not have seen our most recent media technology developments in a positive light. The fact that the internet would have allowed Wesley to more quickly and widely

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71 John Wesley, “Preface” from Explanatory Notes upon the Old Testament.
72 Wesley, “Preface” from Explanatory Notes upon the Old Testament.
distribute his message and the spiritual works he saw as profitable would count for nothing if the medium through which they were delivered negated the intended purposes and effects of the content.

III. And Can It Be that I Should Unplug?

While Wesley most likely would have disapproved of our digital developments, one may still wonder exactly what his response would have been. Would he have simply cautioned against the excessive use of digital media, or would he have demanded complete abstinence? The worst effects of the internet on concentration and ability to process and integrate information come to those who use the internet most frequently. The corresponding neurological rewiring of the brain only comes about through heavy, repeated use. One could easily conceive that very light internet exposure, such as, say, only one to two hours a week, would not lead to such consequences. Be this as it may, my inclination is that Wesley would have tended towards complete internet abstinence. It was likewise possible to consume limited amounts of hard alcohol without descending into drunkenness, yet Wesley still forbade not only drunkenness, but also “buying or selling spirituous liquors; or drinking them (unless in cases of extreme necessity).”\footnote{Wesley, “General Rules.”}

It is one thing to construct Wesley’s probable response to the current developments in information technology. It is still quite another to determine how Wesley’s spiritual heirs should act upon that likely response. As I said in my introduction, new digital media have become so much a part of the contemporary landscape that one can quickly feel that merely existing as a part of modern society requires digital engagement. As one close friend of mine (himself not terribly high on our current digital world) reminded me about his recent search for teaching
positions, one has an almost nonexistent chance of finding a job if one does not regularly attend to online job postings. The refusal to engage with new media can cause a person to be seen as a social pariah, as impeding the “natural course” of human progress. At the very least, as so much of social interaction begins to occur in the digital as well as the physical realms with the advent of Web 2.0, one runs the risk of being a social outcast by refusing to engage in the full range of contemporary forms of connectivity.

What is clear, however, is that activities such as Scriptural reading, prayer, and meditation belong to the *esse* and not the *bene esse* of Wesleyan Christianity. Wesley’s theological genius was not in constructing highly original theological systems, but in synthesizing other strains of Christian thought and practice into a particular life form that enables growth in holiness. While these devotional practices are not by any means exclusive to Wesleyan spirituality, they are at the core of the original life form that he helped develop. So long as we want to continue participating in this spiritual legacy and honestly call ourselves “Wesleyan,” these practices cannot be allowed to drop away. Insofar as current digital media undercut the development of these practices, it becomes clear that Wesleyan Christians must at the very least exhibit a markedly lower level of engagement with them than is seen in the rest of the world.

Having seen that Wesley tended to take a hard stance on abstaining from potentially spiritually harmful products, should we follow a similarly restrictive approach to digital media? There are many who choose to interpret Wesley’s strict posture towards products such as hard alcohol according to the spirit of moderation rather than complete abstinence. Having said that, one should be careful not to assume that Wesley’s strictness levels an impossible or unreasonable burden on Christians. While many United Methodists (to reference my own denomination) do now consume hard alcohol in moderation (myself included), a substantial number have had no
problem remaining completely abstinent of all alcohol (my parents included), and several Wesleyan denominations still enforce alcoholic abstinence as the norm.

If it is decided after all that complete digital disengagement is the correct response to its deleterious effects, then the matter is settled. However, many may be quick to point out that whatever the internet’s negative effects, there are certain advantages in terms of the speed and efficiency that it brings to information exchange, particularly with regard to interpersonal communication. Furthermore, one may argue that insofar as Wesleyan spirituality requires us not to be completely disengaged with the prevailing culture—in terms of our own social, cultural, and economic activities and for the purposes of evangelism—and the prevailing culture is completely saturated by digital media, we must at least have some facility with such media.

If this second path I chosen, and I think there are very good reasons for choosing limited engagement over total disengagement, our work becomes much more difficult. How much engagement is too much? While answering this question will ultimately be decided by intense personal and local communal discernment, I believe that certain guidelines can be developed. The first guideline is that internet exposure should not exceed what is absolutely necessary. Entirely extraneous internet exposure should be eliminated. This principle would seem to eliminate social media, owing to the fact that it currently accounts for a higher percentage of online activity than any other single activity, provides only convenience, and actually seems to be taking a negative toll on our capacity to develop meaningful relationship.74 To limit

74 For the emerging research on the deleterious effects that social media are having on our ability to engage in deep and meaningful relationships, see Sherry Turkle’s Alone Together. Particularly disturbing is the way in which social media only amplifies clinical narcissistic tendencies in individuals: “I have said that in the psychoanalytic tradition, one speaks about narcissism not to indicate people who love themselves, but a personality so fragile that it needs constant support. It cannot tolerate the complex demands of other people but tries to relate to them by distorting who they are and splitting off what it needs, what it can use. So, the narcissistic self gets on with others by dealing only with their made-to-measure representations. These representations (some analytic traditions refer to them as ‘part objects,’ others as ‘selfobjects’) are all that the fragile self can handle… a fragile person can also be supported by selected and limited contact with people (say, the people on a cell phone ‘favorites’ list). In a
temptation and prevent mindless online exposure, one should be exceptionally wary of smartphones, tablets, and text messaging. If there are needful activities that can be performed both offline and online, every effort should be made to perform them offline. Finally, some digital media may not require the same types of regulation, so long as they do not function in the same attention splitting way as most online formatting. So, for instance, eReaders, such as Kindles, that employ e-ink technology and bear much greater resemblance to traditional print media than to standard digital media formats could probably be used with few reservations.

Ultimately, individual Christians and our churches must be willing to speak out and live lives opposing both the uncritical consumption of digital media and the attitude that unplugging will lead to wholesale societal meltdown. This is certainly true of those who completely unplug, but the backlash by the wider world will probably not differentiate between those who choose little instead of no engagement. Taking such a critical posture against what is seen as foundational for our contemporary modes of life will undoubtedly draw heavy criticism, and facing this response will take strong spiritual fortitude. It will not, however, represent any new kind of experience for the church. The early Christian refusal to worship the gods of the empire was met with hostility not because of an overwhelming piety on the part of the larger culture, but because of a fear that Christian “atheism” would anger the gods and lead to the collapse of social stability. The early Methodists often received the same response for their disruption (perceived and real) of established conventions and social structures. The gods of empire receive the most loyalty when we are convinced of their necessity, and they only maintain that loyalty through fear. Our digital idols are no exception.

We should take heart, though. No doubt there will be backlashes against such challenges,
but taking such a critical posture against the idols of our age may contribute to a revival of our movement’s vitality in the very places it has become most stagnant. The periods of greatest marginalization of Christian movements, including Methodism, almost always correspond to the periods of greatest growth. Some—the majority perhaps—in our churches may fear that disengaging from our digital culture will put us at a severe disadvantage against “competing” churches and other cultural forces that wholly invest in digital media, but I believe that the effect will be just the opposite. Our critical distance from an uncritical technoculture will serve to make our communities all that more visible. If we are right that our cultural obsession with digital media hinders human flourishing, then more people than we may realize are feeling the malaise, whether consciously or unconsciously. By distinguishing ourselves from the rest of society, we stand ready to receive them.