Incomplete Evolution: The Development of Problematic Social Media Use

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According to a survey analyzed by Pew Research Center, 95 percent of United States (U.S.) teens aged 13-17 have an electronic device and use some form of social media (SM) (Vogels & Gelles-Watnick, 2023). After the COVID-19 pandemic, another Pew Research Center report presented that 81 percent of parents with children under the age of eleven use or interact with a tablet or computer (McClain, 2022). Children are learning how to use modern technology early in their lives, and they tend to join SM at a young age. How do we make sure that SM usage is conducted in a healthy way? For adults who have children, and who did not have the same experience of technological involvement that digital natives have, what is the best way to approach and provide this knowledge to those children? Unfortunately, the discourse advising parents with adolescents who use SM is relatively complex due to the expansive and sundered body of research aimed at the effects of SM on its users. In order to repair the rhetoric surrounding parent intervention for adolescent social media use, the development of *Problematic Social Media Use* (PSMU/PSU) must be clarified and consolidated with a current academic consensus.

Demystifying the Study of Social Media's Effects

It was not long after the rapid expansion of Facebook into the public domain that adults became concerned and scholars started questioning what effects the rapid adoption of social networking sites (SNS) use would have on adolescents (e.g., Karaiskos et al., 2010; Pelling & White, 2009; Wilson et al., 2010). Pelling and White (2009) established a particularly novel theory for the time that there was an important link between the psychological variables of individuals and their use of SNSs. This theory and its ideological approach to evaluating the SNS

experience served as an influential contribution to the field of research surrounding our interactions with technology.

Over time, both technology as a whole, as well as the options available online, have advanced exponentially. The prevalence of SNSs in daily lives around the globe has become somewhat of a societal norm across almost all generations. Accordingly, the field of research surrounding SNSs and their psychological and sociological effects has also expanded at a rapid rate. The work of Meshi et al. (2015) is particularly noteworthy in the expansion of this field of research because they were able to consolidate some of the sparse existing information of that time and suggest clear threads of future research on the topic. Following the time period of their publication, technological advancements allowed for an increasingly specific branch of study surrounding the effect of SNSs on the brain (e.g., Paulus et al., 2019). Meanwhile, additional lines of theory and investigation have been established including the psychological effects of SNSs on things like personality or mental health (e.g., Zhang, 2022) as well as the sociological implications of SNS use among peers and families (e.g., Savci et al., 2022).

The Arc from Internet Addiction to Problematic Social Media Usage

While there is debate surrounding who should be credited with the terminology, both Dr. Ivan Goldberg and Dr. Kimberly Young were pioneers in the field of internet addiction (IA) and internet addiction disorder (IAD). In a discussion article published by the New Yorker (Wallis, 1997), Dr. Goldberg discusses how his satirical "parody … of the American Psychiatric Association's 'Diagnostic and Statistical Manual of Mental Disorders.'" on PsyCom.net focusing on his novel idea of IAD sparked discourse surrounding IAD in a more serious way. Less than six months before the New Yorker article, Dr. Kimberly Young published an article focusing on the addictive properties of the internet, thus establishing the term IA (1996). Both Dr. Young and

Dr. Goldberg were navigating down the same path of uncovering newly emerging observations that rival supposed addictions to the internet to substance addictions. Around this time, discussions began about the comparisons of IA and IAD with the criteria for substance addiction laid out in the current (at the time) publication of the DSM-IV: Diagnostic and Statistical Manual of Mental Disorders published by the American Psychiatric Association.

Shortly following the public adoption of Facebook, case studies started to surface about individuals who previously had no symptoms of IA becoming highly involved with SNS usage in a problematic manner. One of these case studies, published in the *European Psychiatry* journal (Karaiskos et al., 2010), displayed a woman who, "… ceased several of her activities, remained home most of the day in order to check her Facebook, and lost her job as a waitress because she repeatedly left her post in order to go to the nearest internet café." Because of these events, the psychiatrists involved with this case posited that "Facebook addiction may be another subcategory of the internet spectrum addiction disorders."

The idea of "Facebook addiction" was used sporadically while Facebook was the dominant SNS, but the specificity of the term caused it to dwindle as more SNSs came into popularity. In its place, the behaviors exhibited by individuals engrossed in SM fell under the umbrella of a developing theory dubbed *compulsive internet use* (CIU). Psychology scholars began to study the relationship between CIU and social interactions (e.g., McIntyre et al., 2015). However, the broad range of activities covered by CIU limited the research into SM specifically, eventually giving way to the theory of problematic social media use.

PMSU became a subject of specific interest as it relates to adolescents. Public discourse surrounding the effects SM was having on children began to split into both positive outlooks and negative accusations. SM was seen as a great tool to expand social connections, while also being

blamed for the increase in adolescent mental health issues. In a systematic review published by the *International Journal of Adolescence and Youth* (Keles et al., 2019), researchers found the existing data deduced that "… causation, which requires directional evidence … has not been adequately investigated in this topic, and we must, therefore, state that the relationship [between SM use and mental health issues] is correlational but not conclusively causative." The complexity of the research reviewed by Keles et al., and the lack of clarity in information surrounding PMSU, epitomize the foundation of the rhetorical divergence in addressing SM use with adolescents.

Approaching a Modern Consensus

Undoubtedly, interaction with SM, and screen-based activity in general, affects the cognitive development process of adolescents. Researchers from the University of California San Diego and the Laureate Institute for Brain Research conducted neural imaging studies on adolescents using screen-based media activities (SMA) (Paulus et al., 2019). Their study found that with regard to changes in structural characteristics of the adolescent brain, "there are significant associations but that they are complex." Further, they found that "some SMA-associated brain structures are related to poorer cognitive performance, [while] others are related to better cognitive performance." Results from this study substantiate the claim that SM is having an effect on adolescent brain development, while also debunking the belief that all of these changes are bad. Although these findings may seem unhelpful at the surface level, they solidify the importance of acknowledging SM use for adolescents and promote that parents should take an interest in understanding their children's SM use as a factor in their development.

The field of psychology is spearheading the exploration into how PMSU integrates with the mental well-being of adolescents. Critical to this exploration is the differentiation between

usage volume and usage quality of SM and its capabilities. Marc Tibber, a research psychologist at University College London, broaches this idea by exhibiting that "the exact same features of SM that have the potential to spread harmful information across networks … also have the potential to facilitate access to multiple, alternative perspectives that may ameliorate … biases." Tibber stipulates that "potential benefits require intentional/purposeful engagement, [which] may be challenging for adolescents as mentalization, self-regulation, and emotion-regulation skills are continuing to develop…" (Tibber & Silver, 2022). Tibber's comments enrich the methodological approach to interpreting what SM interactions are positive, and what interactions are cause for concern. Central to this approach is recognizing the developmental maturity that adults can provide in a discussion surrounding SM use that is aimed at identifying safe interactions.

Paradoxically, PSMU is not defined by the ways individuals use SM, rather it is a label for the symptoms similar to substance-related disorders that appear to stem from SM usage. Because of this, a misguided path has been created about determining the identifiers that lead to PMSU, mainly relying on the amount of time spent on SM as the key identifier. A group of psychiatrists and neuroscientists from the University of Ottawa bring up this point while contextualizing their meta-analysis on the correlation between PMSU and its association with depression, anxiety, and stress. They postulate briefly that "problematic SM use may be more imperative to examine than hours spent on social media platforms." (Shannon et al., 2022). This recommendation challenges the existing scope and focus on the psychological effects of SM and directs it toward a key ideology that needs more understanding. Because of the recent alteration to this subject's research focus, we are left in a period where there is not much available concrete evidence to guide parents in identifying problematic behaviors with SM and implementing prevention strategies.

Fortunately, there is evidence that displays the hindering effect of critical thinking abilities on an individual's susceptibility to IA and related brain development associations. We can use this evidence to support the notion that strengthening a child's critical thinking ability is an effective way to moderate impulses that can lead to the adoption of PSMU. By conducting a study of grey matter variations in regions of the brain associated with internet use across individuals with different critical thinking dispositions, researchers from multiple universities in China were able to confirm that elevated critical thinking dispositions were associated with improved cognitive resistance to IA susceptibilities (Liu et al., 2021). Their article concludes, "The present results showed that individuals with higher critical thinking dispositions were more rational in dealing with information through reflective systems, which may indicate greater resistance to the impulsive system." The reference to the reflective and impulsive systems in their conclusion links the idea that critical thinking can moderate IA to the idea that critical thinking can also help to build resistance to PSMU. To keep users engaged in SM platforms, designers leverage users' impulsive systems to maintain a steady progression from idea to idea, from video to video, and from picture to picture. Thus, since building critical thinking helps to facilitate resistance to impulsive systems, it can also help to moderate impulsive characteristics of SM use, potentially leading to elevated behavioral reflection and a higher likelihood of identifying problematic interactions.

Conclusion

Because there is not a clear body of evidence supporting a direct solution to the issues of PSMU, the existing threads of research need to be woven together through a multidisciplinary approach in order to provide a useful set of guidance for parents free from political or extreme biases. In this essay, I have explored the development and subsequent fragmentation of study

surrounding PSMU and combined perspectives from neuroscience, psychology, and adolescent development in order to summarize and integrate modern research into a pragmatic discussion about how to address PMSU with the information currently in circulation. I then suggested that developing a stronger critical thinking ability could be a key takeaway from the existing research in order to avoid PSMU. Additional structured research needs to be conducted on the relationship between critical thinking and its efficacy in combatting PSMU in order to solidify, beyond the relatively limited correlations presented in this essay, the role of critical thinking as it relates to social media.

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