



Advancing Measurement and Research on Youths' Prosocial Behavior in the Digital Age

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Abstract

Widespread access to digital and social media has drastically altered the nature of youths' interpersonal connections. In this context, the opportunities that children and adolescents have to help other people around them are rapidly evolving. Here we review novel, emerging literature on how digital media influences youths' prosocial development in new ways. We then propose key next steps for advancing the field's understanding of youth's prosocial behavior in the digital age. We advocate for extending existing measures to capture experiences that are increasingly relevant for children and adolescents in the digital age, with a particular focus on current events, including the COVID-19 pandemic, and social and political activism. We aim to provide a specific research agenda to advance the understanding of prosocial development.

Advancing Measurement and Research on Youths'

Prosocial Behavior in the Digital Age

Widespread access to digital material and social media has increased youths' knowledge of world events and drastically changed the nature of their interpersonal connections. In the United States, 95% of 13-17-year-olds had a smartphone in 2018, a 22% increase from 3 years prior (Pew Research Center, 2018). Moreover, 45% of adolescents are online "almost constantly" (Pew Research Center, 2018). In this context, the opportunities that youth have to help peers, family, strangers, and the broader society are rapidly evolving. Despite progress, existing measures of youths' prosocial behavior — that is, the propensity to provide instrumental and emotional support to others — have not fully "caught up" to this dynamic social transformation (Mallah, 2019; Padilla-Walker & Carlo, 2014). We briefly review emerging literature on how digital media influences — and can facilitate — youths' prosocial development. We then propose key next steps for advancing the field's understanding of prosocial development, in order to capture experiences that are increasingly relevant for youth in the digital age — including online interactions, social activism, and eco-friendly actions. We discuss these behaviors in the context of youths' opportunities for helping others (Fuligni, 2020) in person and online, and highlight novel methodologies for new, large-scale data collection and analyses of prosocial behavior. Our aim is to provide a specific research agenda that will enable researchers to more holistically characterize the variability in youths' contributions to the lives of others in today's digital and globalizing world.

Prosocial Behavior

Children's and adolescents' capacity to engage prosocially with family, friends and strangers by providing instrumental or emotional support has been of increasing interest in

developmental research. Prosocial behavior is associated with positive behavioral, emotional, and academic growth (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011; Eisenberg, VanSchyndel, & Spinrad, 2016). For example, children and adolescents who display high levels of prosocial behavior — such as sharing and cooperating — perform better in school and experience better emotional well-being (Caprara, Alessandri, & Eisenberg, 2012; Carlo, White, Streit, Knight, & Zeiders, 2018; Collie, Martin, Roberts, & Nassar, 2018; Wentzel, 2014). Moreover, when children help others, they foster positive relationships and emotions that can buffer them from the negative effects of contextual stressors including poverty, interpersonal stress, and emotional challenges (Eisenberg, Spinrad, & Knafo-Noam, 2015).

Online Prosocial Behavior

Since the advent of socio-ecological theory, developmental psychologists have increasingly recognized that youths' behaviors are influenced by intersecting circles of individual and environmental factors such as daily experiences and social interactions (Bronfenbrenner, 1979; Bronfenbrenner & Morris, 2006). In the digital age, youths' daily social experiences are evolving rapidly. Exposure to digital material, including news and social networking, has increased perpetual online connections with peers and strangers. In this context, youth actively construct ways of understanding their social worlds (Turiel, 1983), in large part by contributing to their online social communities. Youth have developmental needs to help and contribute to the lives of others (Fulgini, 2018), and these needs are increasingly expressed on digital media platforms.

Distinct characteristics of online prosocial behavior

Digital media serves as a unique platform for youths' prosocial behavior. First, in the online environment, temporal and social barriers to helping others are removed or reduced. Youth are able to immediately follow-up on the information they receive by forwarding, commenting, or

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following a link to donate money or sign a petition. Thus, online environments create opportunities for prosocial actions more frequently and asynchronously. Second, prosocial actions are recorded more permanently and publicly, making prosocial behavior easier to quantify and socially compare (Nesi, Choukas-Bradley, & Prinstein, 2018). Adolescents may be influenced to engage prosocially by observing their peers' prosocial behaviors online, and by receiving online feedback that encourages prosocial behaviors (e.g., likes on one's posts). Motivation to behave prosocially may increase when prosocial actions are publicly documented, but prosocial motivation may also decrease when youths' identities are anonymous online. Third, helping others in digital communities can create a sense of belonging, and promote identity development and expression through prosocial acts (Moreno & Uhls, 2019). These needs are crucial across development and increase in salience during adolescence (Moreno & Uhls, 2019). Finally, digital media can even shape children and adolescents' developmental needs in new ways, by offering new and distinctive social and emotional gratifications that reward prosocial actions (Sundar & Limperos, 2013). Youth can work together and mobilize to stand up for peers, counter negative stereotypes by producing and sharing media, and advocate for themselves via local governance. Youth can also express their civic identities creatively, using videos, creating memes and artwork, and taking agency in new ways not afforded by traditional civic engagement. These actions can reach wider audiences on a global scale. In short, online platforms create opportunities for *new ways* of prosocial behavior that are unavailable offline. These new forms of online prosocial behavior occur in the context of youths' developmental needs for social and emotional connection, belonging, identity, and purpose.

Developmental Considerations

As youth transition from childhood to adolescence, they become increasingly capable of contributing in impactful ways (Fulgini, 2020). The frequency and quality of children's online media use changes over the course of development, both because children grow and have unique developmental skills, needs, and allowances, and because technology itself evolves so quickly. Developmentally, adolescents are perfectly suited to use their prosocial motivations combined with digital media savviness. The salience of peers and online contexts during adolescence situates social media as a place for adolescents in particular to voice their opinions, share perspectives, and help others. Researchers, policy makers, practitioners and parents need to consider how developmental strengths and vulnerabilities intersect with prosocial behavior in online contexts.

What we know about online contexts and prosocial behavior

In the last decade, research has demonstrated that online experiences can shape youths' prosocial behaviors in person, and the extent of these associations depend on the media amount and content, as well as youths' developmental period and interpretation (see Coyne et al., 2018 for a review). For instance, children's exposure to *prosocial* media (i.e., depictions of positive or helpful behaviors) predicted more prosocial behavior and empathy, whereas exposure to *violent* media predicted more aggressive behavior (Coyne et al., 2018). Moreover, adolescents whose parents engaged in *active* monitoring of their media (e.g., discussed the media with their child) helped their friends more in person, whereas *restrictive* media monitoring (e.g., parents cutting off time) was associated with fewer helping behaviors (Padilla-Walker, Coyne, & Collier, 2016).

Building on these studies that evaluate how online environments predict in-person helping behaviors, more recent research has begun to measure prosocial behavior that *occurs online*. For instance, Erreygers et al., (2018) developed a self-report scale which assesses how often adolescents "let someone know that you like something" and "cheered someone up" on social

media, chatrooms, and instant messaging. Using this measure, a follow up study revealed that adolescents were more prosocial online when they felt happier earlier in the day, suggesting that one's mood can impact the likelihood of helping others online (Erreygers, Vandebosch, Vranjes, Baillien, & De Witte, 2019). To expand this work, there is an opportunity to capture a wider range of prosocial behavior online.

New Directions in the Study of Prosocial Behavior

Given the unique characteristics of online prosocial behavior, at least two clear categories of opportunities for future work have emerged. First, there is an opportunity to build on existing self-report surveys of online prosocial behavior to measure greater variability in online prosocial actions, motivations, activism, and to use more objective, automated, and scalable measures. Second, there is a chance to more fully understand how in-person prosocial behaviors have changed *because of* online and globalization experiences. We now recommend next steps for investigating youths' prosocial behavior online, and then transition to discuss how the field can measure greater variation in prosocial behaviors that occur in-person and are highly influenced by online interactions.

Online Prosocial Behavior

Speaking up for marginalized peers as a form of prosocial behavior. Future measures should include items that address whether youth speak out online when others are marginalized (e.g., Kowalski & Limber, 2013), report incidents of bullying, make friends with another child who is being bullied, or publicly support an unpopular opinion. Some existing self, parent, and peer report measures index how children stand up to bullies *in-person* (often termed "defending behaviors"; e.g., Coyne et al., 2017). These should be extended to explicitly measure how children stand up for each other in online contexts. It is crucial to capture how children stand up against

bullying, racism, sexism, and homophobia *online*, where cyberbullying and unmonitored negative behaviors may be more common compared to in-person, due to anonymity and the impersonal nature of many online interactions (Nesi et al., 2018). Measuring these behaviors in the online context may illuminate greater variability in the ways that children stand up for justice in their digital communities.

Prosocial motivation online. In online platforms, public recognition is more widespread than in person, more permanently recorded, and often intentionally pursued. There is a need to further investigate how youth's experiences of public praise or shaming impacts their prosocial behavior both online and in-person. Anonymous helping behaviors are quite different compared to those that receive public recognition (Nesi et al., 2018). One study explored this among young adults; social media users showed greater intentions of engaging in prosocial behavior offline (e.g., enhanced likelihood of donating) if they were told their donation would be documented on social media for an online audience, compared to if there was no mention of a social media posting. This effect was particularly salient among status-seeking individuals (Choi & Seo, 2017). This research should be extended to adolescents and children. Moreover, the line between prosocial behavior and self-oriented behavior can blur on social media. For instance, it is increasingly common for youth to be paid "influencers" on social media, who sometimes even represent charity groups (Izea, 2020). Moving away from measures that capture overall media use and leveraging a larger set of more nuanced measures — which capture greater specificity in the motivations, interpretations and behaviors involved in social media use — will shed light on why and how prosocial behaviors occur on social media platforms.

Novel tools for measuring prosocial behavior online. As others have suggested, research investigating how digital media relates to prosocial development could be extended by

incorporating novel measurement tools (Mallah, 2019; Padilla-Walker & Carlo, 2014). We build on this work to suggest that ethically-guided internet scraping of publicly available social media profiles/chatrooms could be used to gather larger, more representative samples of prosocial posts, behaviors, and actions. Researchers could also use deep-learning models to detect prosocial behaviors, as recently used to detect instances of mental illness on social media platforms (Kim, Lee, Park, & Han, 2020), or passive sensing approaches to assessing youths' prosocial behavior — for example via cellphone apps. In addition, youth may be willing to share with researchers their data (e.g., profiles, browsing history, posts), for example, when they sign up for a new social media platform. Such methods could provide objective, scalable indices of online prosocial behavior, and could be analyzed with quantitative or qualitative approaches.

Social justice activism as a form of prosocial behavior. Online visibility means that prosocial behavior can reach wider audiences, and youth can contribute to powerful social movements in unprecedented ways. Social media facilitates information sharing beyond children's immediate, daily lives, and children are increasingly aware of world events from younger ages. Young children are leading social activism in extraordinary ways. Youth activism has become particularly apparent in the context of the Black Lives Matter movement, in which children as young as 8 years have organized large-scale protests (Iati, 2020). Similarly, youth from Parkland, Florida spearheaded advocacy for gun-sense legislation following school shootings by capitalizing on social media (Cottle, 2018; Salamon, 2020). Student organizer Emma González uses Twitter to share messages of solidarity to millions of youth, and pressure politicians about gun control (Salamon, 2020). Other examples include adolescent users of the social media platform *Tik-Tok*, who engaged in social activism by mobilizing together and reserving thousands of tickets for a political rally (Evelyn, 2020). Internet use (e.g., information seeking, social networking, digital

media) facilitates these forms of civic engagement and youth empowerment efforts (Middaugh, Clark, & Ballard, 2017). Although some of these instances have reached public attention, there is significant variation on a smaller scale in children's activism that should be reflected in measures of prosocial behavior.

Online Environments Impact In-Person Prosocial Behavior

Climate advocacy as a form of prosocial behavior. The 21st century is marked by the climate crisis; calls for addressing climate change come from younger and younger age groups (Bandura & Cherry, 2020; Reis, 2020). Similar to social justice movements, there is significant variation in youths' contributions to the climate cause. In the most famous example, Greta Thunberg, a 17-year old activist, leads the way in activism for social policies to mitigate the effects of climate change (Watts, 2020). Her public, widespread attention on social media prompts many youth to lead or participate in smaller-scale, offline eco-friendly behaviors such as recycling, composting, and turning off lights and water when not using them. Positive eco-friendly actions and climate activism are forms of prosocial behavior because they contribute positively to the planet and the lives of others. As such, measures of prosocial behavior may benefit from reflecting variation in children's eco-friendly behaviors, and how online communication and exposures influence children's understanding, advocacy, and behavioral changes for helping to mitigate climate change (Reis, 2020).

Prosocial behaviors in the context of social restriction. The current COVID-19 pandemic has drastically changed children's opportunities to help others due to social distancing measures and increase of online platforms. On the one hand, children with access to the internet who are spending more time on the computer may have more opportunities for online prosocial behavior. For instance, qualitative evidence from Europe and Africa reveal that young people are highly

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motivated to help each other navigate the COVID crisis by sharing experiences, information and providing emotional support, in part via online platforms (Pavarini et al., 2020). On the other hand, many children have fewer opportunities to help peers and strangers in-person, due to school closures, discouragement of face-to-face social interactions, and prohibition of group gatherings. For example, longitudinal analyses including measures before and during the pandemic showed that adolescents reported decreased opportunities for providing emotional support to friends during the first weeks of lockdown (van de Groep, Zanolie, Green, Sweijen, & Crone, 2020). Formal and informal online peer support programs can help children to maintain feelings of social connection, hope, and self-confidence, which support their emotional well-being and ability to help others (Pavarini et al., 2020).

Children's prosocial behaviors in context of their opportunities. Schools and neighborhoods structure children's opportunities for helping others and developing prosocial competencies and habits (Fuligni, 2020). Policy makers, educators, and family caregivers are crucial for nurturing positive behaviors and outcomes in children (Masten & Barnes, 2018). There are significant inequalities in the opportunities that children and adolescents have to give and help other people (see Fuligni, 2020). For example, children who live in rural or conservative areas may not have access to recycling facilities or community-oriented programs; standing up against racism or sexism is safer and more accepted in some communities compared to others. In addition, some children have mentors, older peers, siblings or adults who are able to model and socialize prosocial behavior, whereas other children may not. Online platforms reduce some of the inequalities in youths' access to and opportunities to engage in prosocial behaviors. Since social media can break down some barriers, online platforms enable youth to help and participate in broader social movements from home. In short, children's have increasing access to opportunities for helping

others who are in need and far away. Moreover, youth can engage in more diverse prosocial acts crossing temporal and spatial barriers, and may feel like they make a bigger difference in the world (Fullam, 2017).

Fostering children's prosocial behavior in the digital age

To engage in prosocial behavior, it should not only be the child's responsibility to simply change their behaviors (Masten & Barnes, 2018). In person communities (e.g., schools, neighborhoods) and online communities (e.g., social media platforms, online classrooms) can and should provide and structure opportunities for children to volunteer and help each other via mentorship, collaboration, and social activism.

To support children's abilities to positively contribute and help people around them in the midst of social change, we need more creative ways to promote and encourage prosocial behavior in person and in virtual settings. For example, music has been shown to increase children and adolescents' prosocial behavior (even as young as age 4), particularly when played with other people (Kirschner & Tomasello, 2010), or when it includes prosocial lyrics (Greitemeyer, 2009). Other avenues might be promising in the digital era and, in particular, in the context of COVID; prosocial video-zoom groups, games, online helping communities, and emphasis on helping inside the home may create additional opportunities for youth to contribute and support others. In sum, policy makers, educators, and family caregivers are crucial for nurturing positive social engagement in children (Masten & Barnes, 2018). Teachers, older children, and adults should model, teach, and foster the development of young children's helping behaviors in person and in online environments.

Conclusion

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The contemporary world is divided by political, racial, and cultural lines and inequalities. Youth help to bridge these divisions by supporting family, friends and strangers in myriad ways. Digital access is increasing globally, although access to the internet is not equal or equitable (Pew Research Center, 2018), and still predominantly excludes low- and middle-income countries and children of color. At the same time, many children are increasingly connected to world events and peers — connected to these at younger ages, and also connected more frequently. Many parents, educators, and researchers are concerned about the dangers of youths' high levels of engagement online (Moreno & Uhls, 2019). However, online media can also be leveraged for positive youth development and empowerment by providing a unique platform for youth to engage and lead social activism. To encourage youths' prosocial behavior and help them improve the world, we need to revise our measurement tools and understanding of the myriad ways that youth help and give to others—across diverse families, cultures, and communities. Children demonstrate every day that they are capable of making incredible contributions to the lives of others.

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