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KEYWORDS

parasocial interaction
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RESEARCH PAPER

Posting from the Past

A Longitudinal Study of the Potentials of Parasocial Interaction with a Historical Figure for History Education.

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ABSTRACT

Historical figures have been increasingly brought into the Instagram world, providing insights into the past from a first-person perspective by addressing followers in stories or posts. This type of representation promotes the parasocial interaction (PSI) that creates the illusion of a face-to-face interaction with a media figure. This suggests the possibility that historical Instagram accounts might offer a novel platform for history education.

This longitudinal study investigates PSI via actual interaction (e.g., liking and commenting on posts) with historical figures on social media. It uses the results to analyze educational potential in terms of several outcomes: interest in and knowledge about the historical figure and awareness of the historical characteristics and fictional nature of the accounts. To achieve this, followers of the German historical Instagram account *@ichbinsophiescholl* were surveyed at two time points ($N_{t1}=239$; $N_{t2}=84$). The findings reveal that actual interaction is positively related to the experience of PSI. In turn, PSI was supported

by participants' general interest in history. PSI did not increase over time but was positively associated with interest in the historical figure. Furthermore, followers experiencing PSI were more aware of the historical characteristics of the account but less aware of its fictionality.

1 Introduction

Novel media products invoking historical topics have increasingly appeared online, ranging from 360° VR experiences on well-known online video platforms (e.g., YouTube) to representations of historical figures on social media (e.g., Burkhardt, 2021; Bunnenberg, 2018, 2020). These offerings represent an interesting and tangible approach to history. Thereby, they should not only support interest in historical topics but also teach their audience about historical events. Indeed, existing research indicates that historical social media accounts can support young people's engagement in historical events (Hening & Ebbrecht-Hartmann, 2022). Thereby, social media representations of historical figures differ from traditional media representations by enabling personalized access to history, offering space for identification and (emotional) involvement (e.g., Burkhardt, 2015). Moreover, presentation modes characteristic of social media – such as simulating eye contact by directly talking into the camera – are known to promote the experience of *parasocial interaction* (PSI; e.g., Hartmann & Goldhoorn, 2011; Horton & Wohl, 1956). PSI describes an individual experiencing an interpersonal interaction with a media persona in mass media. The original definition understands PSI to be one-sided (Horton & Wohl, 1956). However, the technological affordances of social media enable users to actually interact with these media personas, such as by commenting on or reacting to their stories and posts. Studies investigating PSI on social media have shown that such interactions positively affect the experience of PSI (Kowert & Daniel, 2021; Kyewski et al., 2018). Given that previous research has indicated that historical accounts on social media evoke user engagement in historical topics (Hening & Ebbrecht-Hartmann, 2022), PSI with a historical figure may offer a novel form of audience involvement and the possibility of experiencing past events in some way.

However, such media approaches to history are viewed critically within the community of history education researchers (e.g., Bunnenberg et al., 2021; Burkhardt, 2021; Chapman & Haydn, 2020; Haydn & Ribbens, 2017). This position argues that emotional, fictional representations that aim to immerse followers in the past diminish their ability to distinguish between fiction and reality. For instance, followers might not be aware that the historical figure is played by an actress or actor and is not the historical figure themselves. This effect might be further compounded by the experience of PSI evoking intimacy and trust (Jin & Ryu, 2020). This prompts history education researchers to

emphasize the importance of historical consciousness and the ability to reflect on (media) representations of the past (Pandel, 2017; Popa, 2022). Historical consciousness includes consciousness of fictionality, historicity, and time. However, there has not yet been any empirical inquiry into whether the experience of PSI with a historical figure impacts the historical consciousness of followers by blurring the boundaries between fiction and reality and between past and present. Furthermore, previous studies of immersive virtual environments have argued that such presentation modes undermine the delivery of information and preclude conveying knowledge about the past (e.g., Ahn et al., 2022; Parong et al., 2021). However, according to other investigations, the opportunity for (parasocial) interaction with a historical figure on social media might prompt follower interest in that historical figure, allowing them to attain knowledge about the figure (e.g., Chua, 2002; Hurst et al., 2013).

The present investigation aims to address this research gap by investigating whether PSI with a historical figure on Instagram affects various aspects of history education (historical consciousness, historical interest, and knowledge). We examine whether actual interaction on social media (e.g., commenting, viewing posts) affects followers' experience of PSI with a historical figure using the example of the German Instagram account of *Sophie Scholl* (@ichbinsophiescholl), a German resistance fighter during World War II. This enables the study to produce empirical data concerning the extent to which social media-based historical reenactments can serve an educational purpose.

2 Theoretical Framework

2.1 Historical Figures on Social Media

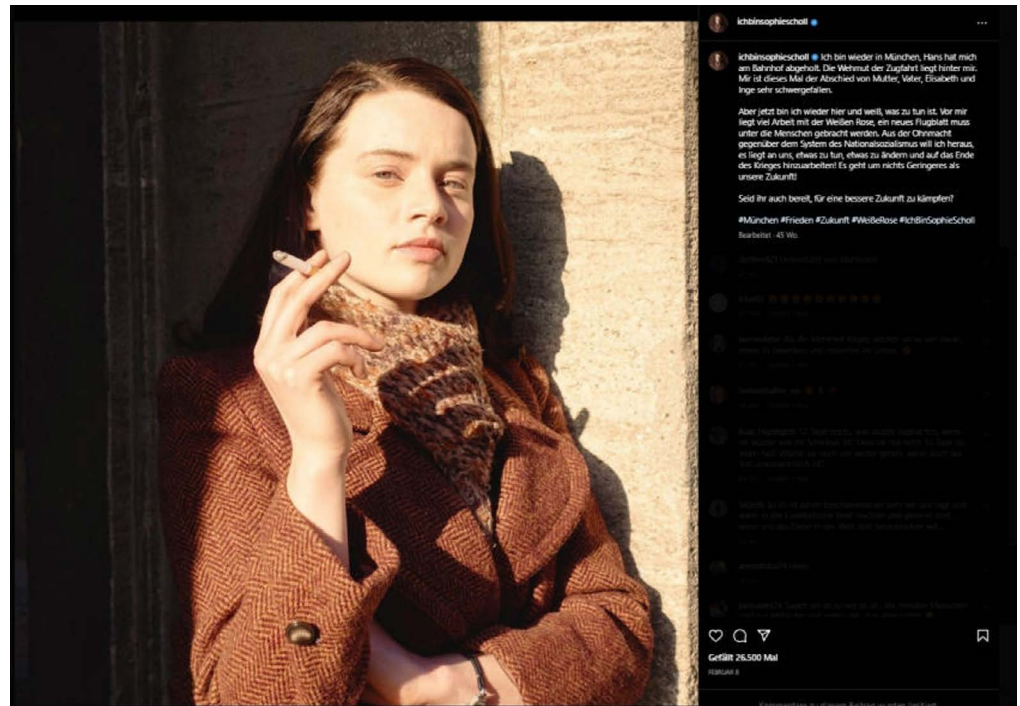
In recent years, individuals have been increasingly exposed to new media approaches to history online. Such media products are designed to provide a tangible approach to history and to stimulate interest in historical topics, especially among young people (e.g., Haydn & Ribbens, 2017). These approaches range from video games and virtual reality applications to social media accounts on various platforms (e.g., Twitter, YouTube, Instagram). The mixed empirical findings regarding the impact of immersive media (e.g., VR) on aspects of historical learning (e.g., knowledge, interest) mainly suggest that such approaches support interest in historical topics rather than deliver factual information about the past (e.g., Ahn et al., 2022; Parong et al., 2021). However, introducing historical figures to social media differs from immersive media applications as the presentation is personalized and putting a particular historical figure in the spotlight, invoking the past on the basis of an individual from history's biography (e.g., Bergmann, 1997; Berg et al., 2023). This approach

consequently offers possibilities for identification (e.g., Giles, 2002). For example, in 2021, the Anne Frank House published the “Anne Frank Diaries” on YouTube¹. Several videos depict Anne Frank’s life between her 13th birthday on June 12, 1942, and August 4, 1944, the day she and her family were deported. The producers of this YouTube channel communicate with the audience at various verbal and nonverbal levels by creating the impression that Anne Frank was filming the videos herself using a video camera she had received for her birthday (i.e., “What if Anne Frank had a camera instead of a diary?”). A similar project launched in 2021 is the Instagram account @ichbinsophiescholl, produced by the German public broadcaster SWR to depict the life of Sophie Scholl, a German resistance fighter during World War II, from a first-person perspective in a narrative format (SWR, 2021). The producers used real footage of the events and persons involved in Sophie Scholl’s life, reenacted photos and videos, provided weekly summaries, and adjusted drawings with captions from the perspective of Sophie Scholl. Stories were posted and comments were answered in *Sophie Scholl’s* name (see Figure 1).

¹ <https://youtube.com/playlist?list=PLDwwb2V397Q6192UeDFpcNuSoK8uS1cgz>

Figure 1: Example post from the German Instagram account *@ichbinsophiescholl*

Note. *@ichbinsophiescholl* [Screenshot], Post by *@ichbinsophiescholl* on Instagram, (2022, February 7). (<https://www.instagram.com/ichbinsophiescholl/>) | Caption (translated): “I am back in Munich; Hans has picked me up at the station[...] But now I am here again and know what has to be done[...] Are you also ready to fight for a better future?”



2.2 Parasocial Interaction on Social Media

Presentation modes that create the impression that a media figure is personally and privately talking to the audience are known to promote the experience of *parasocial interaction* (PSI; e.g., Hartmann & Goldhoorn, 2011; McLaughlin & Wohn, 2021). PSI describes the illusion of interpersonal interaction with media figures in a mass media context (e.g., newscasters), an illusion that is grounded in the experience of a “simulacrum of conversational give and take” (Horton & Wohl, 1956, p. 215). PSI includes cognitive (e.g., linking the media figure’s persona to one’s own memories), affective (e.g., empathy for the media figure), and behavioral responses of the recipients (e.g., Schramm & Hartmann, 2008, 2019). However, recent technological innovations have led to the establishment of novel platforms for experiencing PSI (e.g., social media). Research has already investigated the effects of PSI on certain aspects (e.g., purchasing intention) in the social media context (e.g., Lin et al., 2021). However, the PSI concept was originally defined by one-sidedness, the control of the interaction by the media figure, and the lack of mutual development of the relationship between the two parties (Horton & Wohl, 1956). By contrast, the technological characteristics of social media platforms offer a range of interaction opportunities that enable followers to interact with media figures, opportunities ranging from liking posts

or stories to writing comments or private messages. As such, it is strongly debated whether the concepts can be transferred to social media, given that the (parasocial) interaction might be either reciprocal (Reinikainen et al., 2020) or “one-and-a-half sided” (Kowert & Daniel, 2021). Nonetheless, studies have indicated that actual interaction with a media figure on social media can encourage PSI (Kyewski et al., 2018). Furthermore, social media interaction continues to be controlled by the media figure (e.g., influencers), who decide what to post and who to respond to (e.g., Reinikainen et al., 2020). Additionally, not every social media user actually interacts (e.g., via comments or direct messages) with media figures on platforms such as Instagram. In these cases, the interaction could still be classified as one-sided and non-dialectical, aligning with the original definition of PSI. Nonetheless, to distinguish between PSI on social media and the original one-sided mass-media-based version (Horton & Wohl, 1956), we understand PSI on social media as one-and-a-half-sided (Kowert & Daniel, 2021).

Based on previous research indicating that actual interaction on social media promotes the experience of PSI (e.g., Kyewski et al., 2018), the present study assumes that actual interaction on social media—viewing, commenting on, and liking posts—encourages the experience of PSI with the historical figure *Sophie Scholl*, prompting the following hypothesis:

H1: Actual interaction with a historical figure on Instagram positively affects parasocial interaction.

Impacts of Followers’ Interests

On the side of the recipient, several factors influence the social media content that individuals will expose themselves to (e.g., interest; Abdu et al., 2017; Macafee, 2013; Parmelee & Roman, 2019). For instance, politically interested individuals are more likely to follow political leaders on Instagram (Parmelee & Roman, 2019) and take part in online political activities, such as sending and receiving political information (Abdu et al., 2017) and posting politics-related links, status updates, or likes (Macafee, 2013). Because historical Instagram accounts such as *@ichbinsophiescholl* address historical and political topics (e.g., World War II, the Nazi regime, and how to become a member of the resistance), historically and politically interested individuals can be expected to be more likely to follow these accounts and are more likely to interact with them (e.g., by liking and commenting), leading to the following hypothesis:

H2: [a] Political interest and [b] historical interest positively affect actual interaction with a historical figure on Instagram.

2.3 Educational Perspective

Building on the existing discussion within the community of history education researchers concerning Instagram projects involving historical figures (e.g., Bunnenberg et al., 2021; Burkhardt, 2021; Chapman & Haydn, 2020; Haydn & Ribbens, 2017), this paper evaluates whether this novel form of (parasocial) interaction with a historical figure (Sophie Scholl) on Instagram affects different aspects of history education.

Interest in Historical Figures

Producers of social media–based history projects, such as *@ichbinsophie-scholl*, emphasize that they intend to promote the interest of young people in historical topics (SWR, 2021). Supporting this claim, researchers have found that the opportunity to be a contemporary witness by following a historical person on social media encourages engagement with historical topics (Hening & Ebbrecht-Hartmann, 2022). Furthermore, researchers have identified relationships between interaction on social media and interest in a media figure (e.g., He et al., 2016). Elsewhere, different investigations have demonstrated that social media interaction can foster topic-specific or person-related interest. In the political context, Campbell and Wolbrecht (2006) indicated that political campaigns with visible female candidates recorded increased political involvement from adolescent girls. Meanwhile, in the context of college athletes' accounts on Twitter, Yuksel and Labrecque (2016) reported that sharing detailed information as a media figure fostered interest from followers. These findings have been explained by the emotional connection followers establish with a media figure (Brown & Basil, 2010), enabling the assumption that this emotional connection encourages the perception of the persona as a role model. In turn, this increases interest in this person. In the context of a historical figure – for example, Sophie Scholl – it might be assumed that the experience of PSI causes follower perceptions of *Sophie Scholl* as a role model to enhance their interest in the historical figure *Sophie Scholl*. This allows us to suggest that PSI with a historical figure, including the development of an emotional connection (Schramm & Hartmann, 2008, 2019) and the perception of the historical figure as a role model, produces the effects identified by previous research, leading to the following hypothesis:

H3a: An individual's parasocial interaction with a historical figure on Instagram positively affects their interest in the historical figure.

Increased interest in the historical figure following the experience of PSI may also be influenced by individual factors. Regarding the impact of a person's general interest in history on their interaction with a historical figure on Instagram, research suggests that those followers who are generally highly interested in history are also more interested in historical figures (e.g., Rotgans &

Schmidt, 2018). This led to the following hypothesis concerning the relationship between PSI and interest in Sophie Scholl.

H3b: Historical interest positively moderates the relationship between parasocial interaction and interest in historical figures.

Historical Knowledge

Beyond fostering interest in history, another important aim of history education is to deliver knowledge of history (Sakki & Pirttilä-Backman, 2019). Previous research has suggested that novel media approaches to history, such as VR, distract from factual learning about the past, producing doubt around such applications (e.g., Parong et al., 2021; Burkhardt et al., 2015). However, as mentioned, previous studies have reported that historical social media accounts support young people's engagement in the remembrance of historical events, such as the Holocaust (Hening & Ebbrecht-Hartmann, 2022). A study examining the Instagram project Eva Stories, which recounts the real-life story of a 13-year-old Jewish girl in the days prior to her deportation to Auschwitz, revealed that the account evoked user engagement on social media (e.g., screen-shotting, posting). Furthermore, the experience of PSI is known to encourage engagement with media figures (e.g., Horton & Wohl, 1956), including the affective and cognitive processing of the presented media content (Schramm & Hartmann, 2008, 2019). Consequently, increased engagement with historical figures on Instagram via PSI could support the cognitive processing of the presented media content and consequently promote the development of historical knowledge. Similarly, Chua (2002) positively correlated social interaction with knowledge quality, highlighting, in particular, the relational dimension of social interaction. This allows the following hypothesis concerning the impact of PSI with a historical figure on the development of knowledge about that figure:

H4a: Parasocial interaction with a historical figure positively affects knowledge about the historical figure.

Elsewhere, Flowerday and Shell (2015) have demonstrated that topic interest indirectly affects engagement through situational interest, which itself influences learning. This might also be applied to the Instagram account examined in the present study. This prompted the following hypothesis concerning the moderating role of historical interest in the relationship between PSI and knowledge:

H4b: Historical interest positively moderates the effect of parasocial interaction on knowledge of a historical figure.

Historical Consciousness

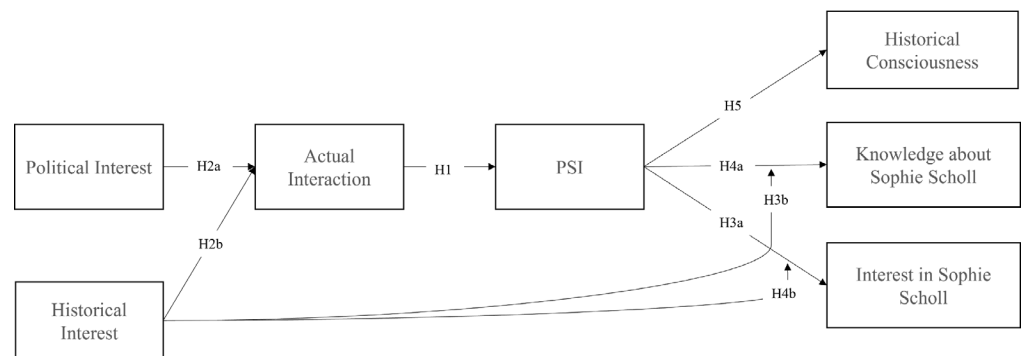
Notably, it has been proposed that the experience of PSI with a historical figure on Instagram might blur the boundaries between reality and fiction and between past and present (e.g., Bunnenberg et al., 2021; Schreier, 2004). Followers might experience PSI as actual social interaction with a historical figure, undermining their awareness of the fictional characteristics of the media product (e.g., Sophie Scholl is played by an actress). History education researchers emphasize the role of historical consciousness in enabling individuals to reflect on historical (media) representations (Pandel, 1987; Popa, 2022). Consequently, historical consciousness has become a part of many history education curricula (e.g., Körber, 2011; Silfver & Myyry, 2022). Pandel (2017) has described historical consciousness in terms of the subdimensions of consciousness of time, consciousness of reality, and consciousness of historicity (Pandel, 2017). Consciousness of time refers to the ability to differentiate between past, present, and future (i.e., the historical figure lived in the past, but the Instagram account depicts episodes as though they are taking place in the present). Consciousness of reality refers to the ability to distinguish between the “real” or “fictional” nature of the episodes depicted (e.g., the historical figure was real but the actor’s representation on the Instagram account is fictional). Finally, consciousness of historicity describes the understanding of the dynamics of people and relationships and of the static characteristics of certain things and events (e.g., the historical figure is dead, but the Instagram account is dynamic and has been constructed by producers).

Previous research has shown that novel media representations have the potential to confuse recipients by encouraging the perception of fiction as reality, although this might be mitigated by providing further information about the production process (Schreier, 2004). Experiencing PSI with a historical figure on Instagram might blur the boundaries between fiction and reality and between past and present, undermining the historical consciousness of the audience (e.g., Bunnenberg et al., 2021; Schreier, 2004). Similarly, previous research has demonstrated that new media technologies and formats (e.g., “reality tv”) have created problems for audiences “categorizing a personality as either fictional or real” (Jarzyna, 2021, p. 415). This might be especially applicable in the present case, where novel media formats have the potential to confuse audiences by supporting the perception of fiction as reality (Schreier, 2004). This understanding prompted the development of the following hypothesis:

H5: Parasocial interaction with a historical figure on Instagram negatively affects historical consciousness.

The hypotheses introduced (H1–H5) enable the research model presented in Figure 2.

Figure 2: Research Model (Including Independent, Dependent, and Moderating Variables)



2.4 A Longitudinal Perspective

Previous research has indicated that the frequency of viewing a media persona in online streaming formats promotes *parasocial relationships* (McLaughlin & Wohn, 2021). The concept of a parasocial relationship (PSR) refers to the illusion of an interpersonal relationship with a media persona that is comparable to other social relationships (e.g., Horton & Wohl, 1956; Gleich, 1996). According to the mere-exposure effect, positive feelings toward another person arise from frequently seeing them in media, leading to the experience of intimacy that promotes PSRs (Horton & Wohl, 1956; Saegert et al., 1973). Horton and Wohl (1956) proposed that PSRs develop through the experience of PSI. Building on that understanding, Kyewski and colleagues (2018) demonstrated that the frequency of interaction supports the experience of PSI with characters on TV in a study based on the frequency of seeing a character on social media. In the social media context, this effect might be promoted by the amount of time that an individual follows a specific media persona (e.g., Sophie Scholl; Rubin & McHugh, 1987). Consequently, individuals who follow a historical figure for a longer period of time – exposing them more frequently to this figure – might experience a greater sense of PSI (e.g., empathy towards Sophie Scholl; Schramm & Hartmann, 2008, 2019). The notion that the frequency of media exposure seems to be an important factor for PSI prompted the following hypothesis:

H6: Parasocial interaction with a historical figure on Instagram increases with increased exposure over time.

Building on this, we also anticipate an increase in the constructs interest in and knowledge about Sophie Scholl, which may be positively affected by PSI. Continuous exposure to a historical figure on Instagram and engagement with the historical figure's account might encourage both interest in and knowledge about that historical figure. This prompted the following hypotheses:

H7: [a] Interest in and [b] knowledge about a historical figure increase over time.

Considering, together, the assumptions concerning the negative impact of PSI on historical consciousness and the increase in PSI over time, we also expect an impact on historical consciousness over time. The experience of PSI with a historical figure over time and the frequent exposure to this historical figure in daily life (via Instagram) might increasingly blur the boundaries between past and present and between fiction and reality (e.g., Bunnenberg et al., 2021; Schreier, 2004). Nonetheless, several studies have reported findings supporting the opposite assumption, suggesting that social media (e.g., WhatsApp) can enhance student involvement in – and, thus, their understanding of – historical contexts (Silfa, 2021). In sum, PSI may exert negative long-term effects on historical consciousness and positive long-term effects on awareness. This prompted the development of the following non-directional hypothesis:

H8: Historical consciousness changes over time.

3 Method

3.1 Study Design

To test the hypotheses, an online survey of followers of the *@ichbinsophiescholl*² Instagram account was conducted at two measurement time points. The first survey period began on July 9, 2021 (several weeks after the account's launch in May 2021) and continued to September 9, 2021. The second survey period began on January 21, 2022, and continued to February 28, 2022, close to the end of the account's posts representing Sophie Scholl's death on February 22, 1943.

3.2 Open Science

The study was preregistered on the Open Science Framework (OSF³) prior to data collection. Within the online survey, we also assessed constructs examining whether following a historical figure on Instagram over a longer period enhances followers' empathy and affects their moral orientation. Hypotheses investigating these additional research questions appear on the OSF. Figure 3

² <https://www.instagram.com/ichbinsophiescholl/>

³ <https://osf.io/ta26f>

provides an overview of the constructs assessed by the two online surveys. For transparency, it should be noted that we partly changed the wording of some of the preregistered hypotheses, but we did not alter the content or meaning. The study was approved by the local Ethics Committee.

3.3 The Historical Instagram Account

The Instagram account *@ichbinsophiescholl* was produced by German public broadcasters in 2021 in collaboration with historians (SWR, 2021). The account introduces the 21-year-old Sophie Scholl, played by a German actress (Luna Wedler), and gives followers insights into the last ten months of Scholl's life. Scholl (* May 9, 1921, † February 22, 1943) was a German resistance fighter opposed to the National Socialism regime. Because of her involvement in a resistance group (White Rose), she and her brother Hans Scholl were sentenced to death by Nazi judges and executed on the same day. On the Instagram account, the producers used several components of Instagram (e.g., stories, posts, reels) to time-shift into the Nazi dictatorship and allow Sophie Scholl to talk to her followers in Instagram stories or posted reels. The channel aims to provide intimate insights into Sophie Scholl's everyday life and uses partly original historical material to tell the story of her path to exemplary civil courage in the resistance. For example, viewers follow the surprise party that Sophie's brother Hans organizes for her 21st birthday, and they suffer the doubts Sophie has about her love affair with her boyfriend Fritz, who is serving as an officer in the Russian campaign. The material is based on the letters and notes Sophie Scholl wrote from the end of 1937 up to her execution. The account remains online and provides detailed insights into the historical content presented, such as through weekly reviews in English and German.

3.4 Sample

Participants were recruited by directly approaching them on Instagram via private messages inviting them to take part in the online survey. Those who participated in both surveys could enter a lottery to win one of four 50€ vouchers from their chosen retailer.

First Measurement Time Point

The data set comprised 239 participants aged between 18 and 68 years ($M=31.3$; $SD=11.3$). The majority identified as female (179), 55 identified as male, and five persons identified as gender diverse. Regarding educational attainment, most participants had university-entrance-level qualifications

(43.5%) or a university degree (39.7%). Furthermore, most participants were employed (37.7%) or students (29.7%).

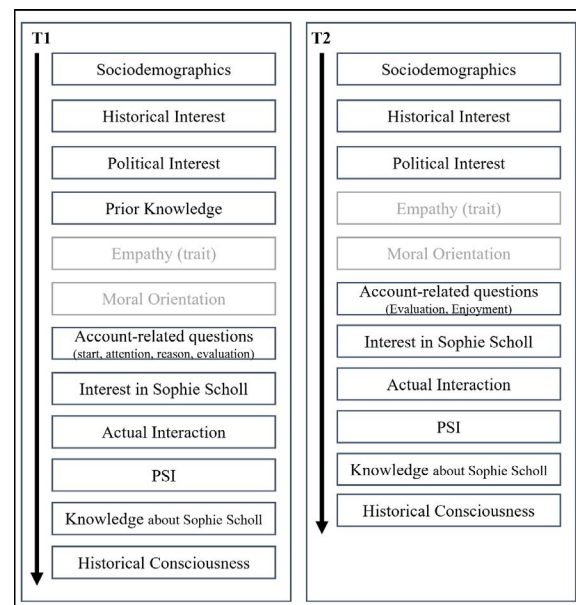
Second Measurement Time Point

A total of 84 participants could be matched to records from the first measurement using a coding procedure. These 84 participants comprised the data set used for the analyses of the longitudinal hypotheses ($H6-H8$). The participants were aged between 18 and 62 years ($M=33.7$, $SD=12.43$). The majority identified as female (65), 17 identified as male, and two persons identified as gender diverse. Regarding educational attainment, most participants had university-entrance-level qualifications (44%) or a university degree (41.6%). Regarding occupation, most were employed (36.9%) or students (32.1%).

Measures

Within the online survey, participants completed different questionnaires assessing the constructs included in the hypotheses. The questionnaires within the online survey and the order of presentation appear in Figure 3. If not mentioned otherwise, responses to items were given on a six-point Likert scale (1 = strongly disagree to 6 = strongly agree). The average survey completion times were 18.21 minutes ($t1$) and 14.86 minutes ($t2$).

Figure 3: Order of the Questionnaires within the Online Survey



Note. The questionnaires with gray titles are not part of the present investigation. For more information, see the OSF⁴.

⁴ <https://osf.io/ta26f>

Political and Historical Interest & Interest in Sophie Scholl

Political interest was measured based on the German version of the Short Scale of Political Interest (Otto & Bacherle, 2011). The scale comprises six items (e.g., “For me, politics is an exciting topic.”; $M_{t1}=4.4$, $SD_{t1}=1.1$, $\alpha=.91$; $M_{t2}=4.4$, $SD_{t2}=1.1$).

Historical interest and interest in Sophie Scholl were measured based on adapted versions of the Short Scale of Political Interest (Otto & Bacherle, 2011). The modified historical version comprises five items (e.g., “For me, history is an exciting topic.”; $M_{t1}=4.8$, $SD_{t1}=1.2$, $\alpha=.95$). The modified version regarding Sophie Scholl includes four items (e.g., “Ever since I started following the Instagram account @ichbinsophiescholl, Sophie Scholl has been an exciting person for me.”; $M_{t1}=4.1$, $SD_{t1}=1.2$, $\alpha=.80$; $M_{t2}=4.6$, $SD_{t2}=1.3$).

Actual Interaction

Actual interaction with the Sophie Scholl Instagram account was assessed using an adapted version of the interactivity scale by Rihl and Wegener (2019). The ten items were adjusted to cover the possible forms of interaction available on Instagram (viewing, commenting, liking, and reacting to stories, posts, and private messages; e.g., “I reacted to the stories of @ichbinsophiescholl.”; $M_{t1}=2.9$, $SD_{t1}=0.9$, $\alpha=.78$; $M_{t2}=2.8$, $SD_{t2}=1.0$). Table 3 presents the items and follower responses at each time point.

Table 3: Overview of the Descriptive Values of the Actual Interaction Measure at Both Time Points

	T1		T2	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
I look at the comments on the posts of <i>ichbinsophiescholl</i> .	3,8	1,6	3,9	1,7
I use the like function of the posts.	4,1	1,9	3,5	2,1
I comment on the posts of <i>ichbinsophiescholl</i> .	2,1	1,4	2,1	1,5
<i>ichbinsophiescholl</i> responds to my comments.	2,3	1,8	2,6	2,0
I watch the stories of <i>ichbinsophiescholl</i> .	5,2	1,2	4,8	1,4
I respond to the stories of <i>ichbinsophiescholl</i> .	2,0	1,5	1,9	1,5
I write private messages to <i>ichbinsophiescholl</i> .	1,3	0,7	1,3	0,7
<i>ichbinsophiescholl</i> replies to my private messages.	1,7	1,5	7,8	1,6
<i>ichbinsophiescholl</i> replies to my reactions.	1,9	1,6	2,0	1,6
I see <i>ichbinsophiescholl</i> 's posts and stories on my timeline.	5,1	1,3	4,4	1,9

PSI

PSI was measured using six subscales from the PSI Process Scale (Schramm & Hartmann, 2019; $M_{t1}=3.8$, $SD_{t1}=0.8$; $M_{t2}=3.7$, $SD_{t2}=0.8$; $\alpha=.94$): comprehension of the situation and of the acts of the persona (e.g., “I made an effort to comprehend the reactions of⁵ .”; $\alpha=.80$), linking the persona’s statements/actions to one’s memories (e.g., “I repeatedly pondered whether I know people who resemble *ichbinsophiescholl*.”⁵; $\alpha=.76$), evaluation of the persona and their actions (e.g., “I have formed an opinion about *ichbinsophiescholl*.”⁵; $\alpha=.84$), establishment of a relationship between the persona and the self (e.g., “I did not compare myself to *ichbinsophiescholl*.”⁵; $\alpha=.89$), empathy (e.g., “I always felt compassion for *ichbinsophiescholl*.”⁵; $\alpha=.86$), and emotional release (“*ichbinsophiescholl*’s feelings were sometimes contagious.”⁵; $\alpha=.89$).

Knowledge about Sophie Scholl

Knowledge about Scholl was measured using eight self-developed items assessing general knowledge. Four of the statements could be answered based on the information given on the Instagram account *@ichbinsophiescholl* (e.g., “Sophie Scholl was no member of the BDM⁶.”). Because the hypotheses suggest that stronger follower engagement with a historical topic increases information seeking, we added four items which that could only be answered by further research about Scholl, such as “Sophie Scholl was executed on the same day as her brother Hans Scholl and Christoph Probst.” Answers were coded based on whether participants provided the correct (2) or incorrect (1) answer (according to a true-or-false format) to each of the eight statements, and a mean score was calculated ($M_{t1}=1.8$, $SD_{t1}=0.2$; $M_{t2}=1.4$, $SD_{t2}=1.1$). All items appear on the OSF⁷.

⁵ We decided to include “*ichbinsophiescholl*” instead of “Sophie Scholl” in the items to emphasize that we are referring to the presentation of Sophie Scholl on Instagram (by employing the “Instagram username”). Nonetheless, we are aware that this might have manipulated the recipients’ reflective processes, including their consciousness of fictionality, something that we discuss in terms of the limitations of the study.

⁶ The Bund Deutscher Mädel (BDM) was the female branch of the Hitler Youth (HJ) during the National Socialist era.

⁷ <https://osf.io/92h35/>

Historical Consciousness

Historical consciousness was measured using a self-developed questionnaire (Table 4).

Table 4: Results of the Exploratory Factor Analysis of the Historical Consciousness Questionnaire (t1)

Item	Factor			<i>M</i>	<i>SD</i>
	1.	2.	3.		
The Instagram account ichbinsophiescholl shows how Sophie Scholl's life really was. (R)	.858	-.191	-.068	3.24	1.63
Through the Instagram account ichbinsophiescholl I can witness Sophie Scholl's actions. (R)	.788	-.316	.015	2.24	1.53
The Instagram account ichbinsophiescholl shows the past. (R)	.686	-.162	-.145	1.90	1.52
The depicted life of Sophie Scholl on the Instagram account ichbinsophiescholl is customizable and constructed.	.654	.065	.069	4.13	1.56
On the Instagram account ichbinsophiescholl you are able to follow Sophie Scholl's life in real-time. (R)	.627	-.303	.171	2.86	1.93
The Instagram account ichbinsophiescholl and Sophie Scholl herself are the same. (R)	.604	-.006	.171	4.91	1.57
Sophie Scholl's life impacts the present.	-.042	.873	.003	4.46	1.28
The Instagram account ichbinsophiescholl will impact the future.	-.247	.846	-.062	3.99	1.42
The Instagram account ichbinsophiescholl impacts the present.	-.075	.838	-.080	4.10	1.42
Sophie Scholl's life will impact the future.	-.265	.788	-.067	4.28	1.35
Sophie Scholl's life has already passed and is unchangeable.	-.038	-.069	.826	5.84	0.63
Sophie Scholl has already lived.	.137	-.051	.636	5.80	0.76
Sophie Scholl was a real person.	-.02	-.034	.614	5.98	0.21
Sophie Scholl's life took place in the past.	.048	-.125	.610	5.69	0.99
An actress portrays Sophie Scholl on the Instagram account ichbinsophiescholl.	.035	.082	.599	5.85	0.71
Reliability (Cronbach's Alpha)	.814	.880	.628		

Note. (R): items are reverse-coded. 1: consciousness of reality, 2: consciousness of time, 3: consciousness of historicity.

The original 19 items were formulated according to the first three dimensions of Pandel's dimensions of time, reality, and historicity. After eliminating four items due to low factor loadings ($< .50$) and low Cronbach's alphas ($< .50$), an exploratory factor analysis revealed a three-factor solution (Ferguson & Cox, 1993): consciousness of time (e.g., "Sophie Scholl's life will impact the future.", $M_{t1}=4.1$, $SD_{t1}=1.2$; $M_{t2}=3.9$, $SD_{t2}=1.4$), consciousness of reality (e.g., "The depicted life of Sophie Scholl on the Instagram account *ichbinsophiescholl* is customizable and constructed.", $M_{t1}=3.2$, $SD_{t1}=1.2$; $M_{t2}=3.6$, $SD_{t2}=1.4$) and consciousness of historicity (e.g., "Sophie Scholl's life has already passed and is unchangeable.", $M_{t1}=5.9$, $SD_{t1}=0.3$; $M_{t2}=5.9$, $SD_{t2}=0.2$). All items, and the results of the exploratory factor analysis, appear in Table 4 ($M_{t1}=4.4$, $SD_{t1}=0.5$; $M_{t2}=4.5$, $SD_{t2}=0.5$).

Control Variables

Evaluation. Participants were asked whether they liked the account and consider it valuable (e.g., "I think the Instagram account *ichbinsophiescholl* is useful.", $M_{t1}=5.1$; $SD_{t1}=1.4$; $M_{t2}=4.7$, $SD_{t2}=1.7$).

Account-Related Questions. Participants were also asked to indicate their impression of Sophie Scholl in terms of five items (e.g., "Sophie Scholl was an important personality."). Furthermore, they were asked at the first measurement time point why they had started following the account (interest: 88.3%; school/study: 2.5%; job: 3.3%; other: 5.9%), when they had started following the account (when the account was launched: 75.3%; several weeks after the account launched: 14.7%; several days after the account launched: 10%), and how they became aware of the account (media: 61.9%; friends/family: 21.3%; school/study: 2.5%; job: 1.3%; other: 13%).

Self-Reported Prior-Knowledge. We asked participants at the first measurement time point to indicate their prior knowledge based on a self-assessment question: "How would you evaluate your prior knowledge about Sophie Scholl on a scale ranging from 0 to 10?" ($M_{t1}=3.5$; $SD_{t1}=1.4$). Furthermore, participants were asked whether they had previously heard about Sophie Scholl during school/studies (74.1%), watched a movie about Sophie Scholl (37.7%), or read about Sophie Scholl (63.2%).

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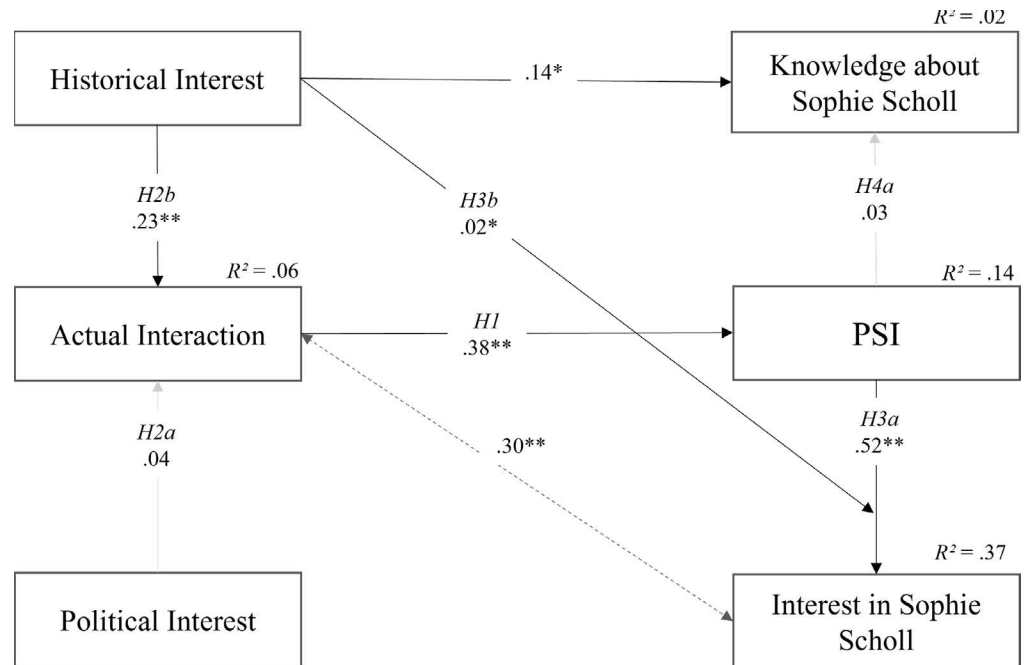
4 Results

4.1 Model Testing

To test the proposed model, including *H1–H5*, a path model was calculated using R-Studio (Version 4.2.0). According to the customary fit indices, the original model fit was insufficient: $\chi^2(10) = 29.03$, $p = .001$, $\chi^2/df = 0.98$, CFI = 0.90, TLI = 0.82, RMSEA = .09 (90 % CI from .05 to .13), SRMR = .055 (Hu & Bentler, 1999). Therefore, we decided to exclude the self-developed historical consciousness questionnaire from the analysis and examine hypothesis five (*H5*) in a separate model. Furthermore, following the modification indices, an additional path between actual interaction and interest in Sophie Scholl was added, producing the following sufficient model fit: $\chi^2(6) = 4.38$, $p = .625$, $\chi^2/df = 0.99$, CFI = 1.0, TLI = 1.0, RMSEA = .00 (90 % CI from .00 to .07), SRMR = .024 (Hu & Bentler, 1999; see Figure 4).

Regarding the first hypothesis, concerning the positive effect of follower interactivity on PSI (*H1*), the model demonstrated a medium positive significant effect ($\beta = .38$, $p < .001$), thus confirming our hypothesis. The second hypothesis, concerning the positive effects of political interest (*H2a*) and historical interest (*H2b*) on interactivity, was partly confirmed, with the model demonstrating a positive effect of historical interest on interactivity ($\beta = .23$, $p < .001$) but no effect of political interest on interactivity ($\beta = .04$, $p = .583$). As such, *H2a* was rejected and *H2b* was confirmed. Next, the analysis revealed positive effects for the impact of PSI on interest in Sophie Scholl ($\beta = .52$, $p < .001$) and the moderating role of historical interest ($\beta = .02$, $p = .022$) in the first relationship, confirming *H3a* and *H3b*. However, the fourth hypothesis — concerning the positive effect of PSI on knowledge about Sophie Scholl (*H4a*) and, again, the moderating role of historical interest (*H4b*) — was not confirmed. The model showed no significant effect for *H4a* ($\beta = .03$, $p = .665$) and, consequently, no significant effect for *H4b*. However, the direct effect of historical interest on knowledge about Sophie Scholl was positive and significant ($\beta = .14$, $p = .022$). Finally, the added path between interactivity and interest in Sophie Scholl demonstrated a significant positive effect ($\beta = .30$, $p < .001$), indicating a correlation between the two variables. The explained variances and beta values appear in Figure 4.

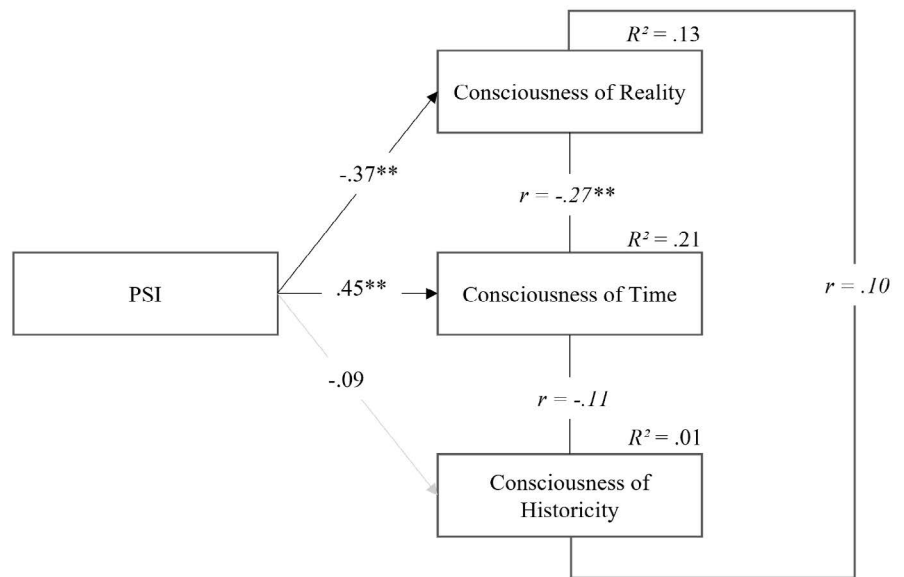
Figure 4: Explained Variances of the Dependent Variables: Interactivity, PSI, Interest in Sophie Scholl, Knowledge about Sophie Scholl, and Beta Values of the Effects



Note. Gray paths were non-significant. The dotted path is the path added to enhance the fit indices. * $p < .05$. ** $p < .001$.

To test the fifth hypothesis ($H5$), which suggests a negative effect of PSI on historical consciousness, a second path model was calculated featuring PSI as the independent variable and the three factors of the historical consciousness questionnaire (i.e., consciousness of reality, time, and historicity) as dependent variables. We decided to calculate a path model instead of multiple regressions to control for measurement errors, enabling us to gain more reliable estimations of the beta coefficients (Bollen, 1989). Due to the model construct (zero degrees of freedom), the model fit cannot be interpreted. Therefore, it is not provided here. The model revealed a significant negative effect of PSI on consciousness of reality ($\beta = -.37, p < .001$) and a significant positive effect of PSI on consciousness of time ($\beta = .45, p < .001$) but no significant effect of PSI on consciousness of historicity ($\beta = -.09, p = .214$). Thus, $H5$ was partly confirmed. The explained variances, beta values, and correlations between the factors of historical consciousness appear in Figure 5.

Figure 5: Explained Variances, Beta Values, and Correlations Regarding the Hypothesis 5



Note. The gray path represents a non-significant path. * $p < .05$. ** $p < .001$.

4.2 Longitudinal Analysis

A repeated measures MANCOVA was conducted to test the longitudinal hypotheses, which suggest increased PSI, historical knowledge, interest in Sophie Scholl, and increased historical consciousness with increased engagement over time ($H6-H8$). The analysis was conducted using IBM SPSS (version 28.0.0.0).

As dependent variables, we included in the analysis PSI and the three measured factors of historical consciousness, interest in Sophie Scholl, and knowledge about Sophie Scholl. Due to the theoretical assumption that actual interaction affects the dependent measures, we included actual interaction ($t1$ and $t2$) as covariates in the analysis. The one-way repeated measures MANCOVA showed no statistically significant difference between the two measurement time points: $F(6, 76) = 2.37, p = .069, \eta^2 = .140, \text{Wilks' } \Lambda = .860$. As such, $H6$, $H7$, and $H8$ were rejected.

5 Discussion

The present study investigated whether PSI with a historical figure on Instagram affects different aspects of history education (i.e., historical consciousness, historical interest, and historical knowledge). The objective was to add empirical evidence to the discussion of whether such historical projects on social media can be considered historical learning devices. We focused on the mechanism of PSI by examining the role played by the actual interaction of followers on social media (e.g., commenting, viewing posts) in the experience of PSI with a historical figure (using the example of Sophie Scholl on Instagram: *@ichbinsophiescholl*). Furthermore, recognizing the lack of longitudinal studies on PSI, we addressed this research gap by investigating the longitudinal effects of PSI on different aspects of historical consciousness and examining whether PSI itself increases over time.

5.1 Follower Interactions and PSI

In line with previous investigations (e.g., Kyewski et al., 2018), the results reveal a positive association between followers' actual interaction with a historical figure on social media and PSI. Those followers who frequently interacted with Sophie Scholl on Instagram (e.g., liking, commenting, viewing posts/stories) experienced PSI to a greater extent. As such, the current study extends previous research by investigating PSI in the context of a historical figure on Instagram. Such social media accounts seemingly represent a special case: followers likely know that this person is already dead and that their life story has already been told. Even with that knowledge, followers tend to interact with the historical figure in various ways. For example, the results show not only that those followers who viewed stories and posts more often experienced a higher sense of PSI but also that engaging more actively by writing comments or private messages increased the experience of PSI. Furthermore, the descriptive insights into follower interaction behaviors indicate that participants were more likely to consume the presented historical media content (e.g., stories and posts) than interact in the form of private messages, comments, or giving likes. Moreover, the findings demonstrate that the relationship between interaction and PSI was independent of whether the historical figure responded to comments or private messages. As such, it appears that social media users do indeed experience so-called one-sided PSI with historical figures on social media.

Contrary to expectation, we observed no effect of political interest on followers' actual interaction with the historical figure on Instagram. Politically interested followers were not found to be more likely to interact with *Sophie Scholl*. These findings contradict previous studies reporting a relationship between political interest and political social media activity (Abdu et al., 2017; Macafee, 2013; Parmelee & Roman, 2019). However, because the Instagram

account did not show any recent political content, it might be perceived as historical rather than political. The main topic on the Instagram account was Sophie Scholl's private life, which we could not predict when the account was launched, instead assuming politics to be a central focus given that Sophie Scholl is known for her political activism during World War II (McIlroy, 2017). Moreover, although political topics were partly addressed (e.g., the Nazi regime), no current politics were included. This may have led to the perception of the account as mainly historical, rendering it not particularly interesting for those motivated to engage in current political topics. Additionally, the public might have perceived the Instagram account to be more historical than political due to the media campaigns of the producers (see SWR, 2021). Consequently, the historical interest of followers might have more impact than political interest on actual interaction with the account, a proposition proven by the significant positive effect of historical interest on actual interaction with the account. Furthermore, we observed that followers who indicated being interested in history in general interacted with the historical figure to a greater extent. These findings suggest that individual characteristics and interests are an important factor in users' social media interaction behavior.

5.2 Interest in the Historical Figure

When considering the educational impacts of PSI, aligning with expectations, we observed a positive relationship between PSI with the historical figure and interest in the historical figure. This seems logical given that the original definition of PSI describes how establishing a social connection with a media persona and regarding that persona as a friend leads to a feeling of knowing and identifying with the person, in turn suggesting an interest in the person and their environment (Horton & Wohl, 1956; Rubin & McHugh, 1987). PSI with *Sophie Scholl* promoted interest in the historical figure Sophie Scholl through the development of a social connection. The perception of Sophie Scholl as a role model may also exert an influence. That is, the emotional connection with the representation of Sophie Scholl, built through PSI, might lead followers to view her as a role model, in turn fostering interest in the historical figure (Brown & Basil, 2010; He et al., 2016). Overall, the current investigation supports the assumed causal relationship between PSI and interest in the media persona (Horton & Wohl, 1956; Rubin & McHugh, 1987).

Notably, many participants indicated that they started following the account because they were interested in Sophie Scholl and her life. Consequently, because we also found no significant differences in interest in Sophie Scholl in the long-term analysis, it cannot be concluded that following a historical figure over time supports interest in the historical topic. Rather, the results suggest that a combination of PSI, engagement, and personal interest in historical topics is critical. Furthermore, we found that followers' general interest in history affects

the relationship between PSI and interest in the historical figure, with a greater experience of PSI particularly associated with greater interest in the historical figure when followers recorded a generally high level of interest in history.

5.3 Historical Knowledge

Contrary to expectation, PSI with Sophie Scholl on Instagram did not increase knowledge about Sophie Scholl. These findings indicate that PSI, depending on the presentation mode, might be more likely to promote affective responses (e.g., interest) than cognitive responses (e.g., learning). Moreover, followers' knowledge about Sophie Scholl did not increase over time. There are several potential reasons for these findings. Although many studies have highlighted the educational potential of social media (e.g., Silfa, 2021), other researchers have suggested that (social) media may distract from learning, in turn negatively impacting the amount of information attained (Anderson & Dron, 2014; Parong & Mayer, 2021). However, the type of presentation and the information presented might be an important factor when focusing on the impact of social media representations on (historical) knowledge. As such, the fictional portrayal of historical figures on Instagram might be more likely to trigger emotional involvement, diminishing the boundaries between past and present (e.g., Brauer, 2016) and reducing the reflective, cognitive processing of the relevant historical information. Consequently, when historical information is presented more objectively on social media, other effects can be assumed, similar to the differences between historical films and documentaries.

5.4 Historical Consciousness

Our findings revealed that although PSI positively affects consciousness of time, it negatively impacts consciousness of reality and has no effect on consciousness of historicity. By contrast, when followers experienced PSI with Sophie Scholl, they were less likely to be able to distinguish between fiction and reality. This supports previous findings suggesting that PSI might make it harder for some people to distinguish between reality and fiction (Jarzyna, 2021). Our findings might be partially explained by the account's content, which mainly comprised modified images and videos featuring lookalikes of Sophie Scholl and her family and friends, with (almost) no indication that they were reenactments. This may have given followers the impression that the material represents reality, especially because most of the generally available content on Instagram is real and reflects the present day. Such blurring of the boundaries between fiction and reality may be further compounded by the fact that the presentation of historical figures on social media is a relatively new phenomenon. Furthermore, interacting with Sophie Scholl by, for example, reacting to her stories, commenting on and liking her posts, and messaging

her (and perhaps even receiving a reply) may make the historical figure seem more real due to the perceived interaction (Labrecque, 2014). This, in turn, might have a detrimental effect on the consciousness of reality.

Furthermore, the results showed that PSI positively influences consciousness of time, measured as the influence of Sophie Scholl and the account *@ichbinsophiescholl* on perceptions of the present and future. This contradicted our assumption that the blurred boundary between Sophie Scholl and her representation on Instagram would inhibit consciousness of time. A possible explanation for the perceived influence of the account might be found in followers' engagement with *@ichbinsophiescholl*. Seeing content and stories on their Instagram timelines and being confronted with posts might enhance perceptions of the account's influence on the present. Furthermore, the uniqueness of the account in the media landscape might prompt followers to understand that the account was launched because of Sophie Scholl's political actions, suggesting that her influence extends beyond the past and into the present and the future.

5.5 Longitudinal View of PSI

Contrary to our hypothesis, PSI did not change over time. That is, followers did not experience stronger PSI with Sophie Scholl after engaging with her over a longer period and consequently seeing her more often. These findings contradict the results of previous research observing an increase in PSI due to the frequency of seeing a character on screen (Kyewski et al., 2018). It is conceivable that the participants already knew the historical figure (e.g., from history classes in school or from movies) and therefore felt some kind of relationship with her independent of the Instagram content. Furthermore, followers may not necessarily have been exposed to more content over the course of the study period. Research has indicated that social media users do not notice all the content to which they are exposed in their social media feeds due to the information overload that is generally characteristic of social media and encouraged by the algorithms driving the platforms (Matthes et al., 2020). Moreover, the descriptive statistics regarding followers' actual interactions suggest that followers reported seeing fewer posts and stories of Sophie Scholl at the second measurement time point compared to the first. This may have hindered an increase in PSI.

5.6 Implications and Future Research

The present study has revealed that the experience of PSI with a historical figure on Instagram supports followers' topic-related historical interest, indicating that such historical projects on social media can promote interest in historical topics. However, the experience of PSI was not positively related to followers' knowledge about the historical figure and did not lead to increased knowledge about the historical figure over time. Nonetheless, given that previous findings suggest that interest motivates individuals to inform themselves about a specific topic (Rotgans & Schmidt, 2018), such projects may not lead directly to a knowledge gain, instead potentially representing a first step toward interest, which in turn increases the likelihood that they inform themselves about the historical topic. Therefore, in educational contexts (e.g., school), such approaches might usefully foster student interest in historical topics. Furthermore, our findings suggest that seeing historical content on social media, such as Instagram, increases interactivity and exchange, promoting further engagement with historical topics.

Additionally, the present findings have revealed that PSI with a historical figure on Instagram blurs the boundaries between reality and fiction. Followers who experienced PSI were more likely to believe that the historical Instagram account depicted reality. These findings highlight the importance of marking fictional content as such to avoid diminishing the seriousness of historical events (e.g., by indicating sources and providing additional information about the production process). Furthermore, the producers of such historical social media projects should be aware that when presentation modes promote PSI (e.g., by simulating eye contact), they also promote the non-reflective processing of historical information.

Finally, the findings suggest that the construct of historical consciousness is defined by different dimensions, as already theoretically assumed by Pandel (1987). We have empirically demonstrated that consciousness of time and consciousness of reality, as subdimensions of historical consciousness, are affected by media representations.

Because social media also allows the development of relationships with (media) personas over time, future research should also examine the effects of developing a (parasocial) relationship with a historical figure via social media. This may be of substantial interest because individuals tend to trust people to whom they feel close (e.g., Papadopoulou et al., 2001), potentially encouraging them to perceive (historical) information as more trustworthy.

5.7 Limitations

This research features several notable limitations. First, it should be acknowledged that the longitudinal analyses were based on a relatively small number of participants, and the sample size may only have been sufficient to detect small to medium effects. Future studies should endeavor to include larger sample sizes in longitudinal investigations. Furthermore, the sample is not representative of the general population. It mainly comprised female, highly educated participants, negatively affecting the generalizability of the results. Nonetheless, the present sample can be perceived as representative of the followers of the historical Instagram account on which we focused. The study was further limited by beginning six weeks after the Instagram account was launched, which might have negatively impacted the results of PSI over time, due to an initial connection already having been established between Sophie Scholl and her followers.

To assess knowledge, we used several items addressing specific knowledge about Sophie Scholl. This might not have provided a comprehensive understanding of the knowledge followers might have gained by following the historical Instagram account (e.g., knowledge about World War II, the Nazi regime, or the German population's situation during World War II). Furthermore, we could not ensure that participants did not find answers online when responding to the online questionnaire. Future research should consider using other measures to assess followers' knowledge. Similarly, the quantitative assessment of historical consciousness might be considered insufficiently complex for accessing such a complex construct. Therefore, future research should consider additional assessments, such as qualitative assessments based on recipient responses (e.g., Lewers & Frentzel-Beyme, 2023). Furthermore, we assessed PSI with the historical figure on Instagram via items that used the name of the Instagram account (*ichbinsophiescholl*) instead of the name Sophie Scholl. This might have affected reflection processes, including awareness of the fictionality of the account. Meanwhile, in addition to user interest in historical topics, other personal characteristics (e.g., users' general social media interaction behavior) may influence PSI and the dependent variables examined in this study. Therefore, future research should consider the impact of individual factors. Finally, it should be emphasized again that the original definition of PSI assumes a one-sided interaction. Therefore, the implications of PSI for the contexts of other media should be treated with caution because this study has only considered one-and-a-half-sided PSI in the social media context.

6 Conclusion

The present study contributes to the understanding of PSI with historical figures on social media and its educational effects from a longitudinal perspective. We found that followers' actual interaction on social media (e.g., liking and commenting) related positively to the experience of one-and-a-half-sided PSI, supported by their pre-existing general interest in history. PSI with a historical figure on Instagram has been observed to positively relate to interest in historical figures and consciousness of time but negatively relate to consciousness of reality — that is, awareness of the fictional nature of the social media content. The longitudinal perspective did not reveal any increase in PSI and historical knowledge. In sum, our findings indicate that PSI with a historical figure on Instagram can enhance followers' historical interest and understanding of aspects of historical consciousness, but caution is advised to avoid diminishing audience perceptions of the boundaries between reality and fiction.

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