**Between the Homefront and the Battleground, Between Television and the Smartphone:**

**Evaluating the Use of a Second Screen during Israel’s Operation “Guardian of the Walls”**

**Abstract**

Second screen use—using smartphones and other portable devices while watching television—has attracted significant attention. Although media usage is important during crises, and despite research having recognized second screen usage’s signficance, no study has examined their use during violent conflicts, especially when civilians are directly affected.

We examined Israeli citizens’ second screen usage during Operation “Guardian of the Walls,” particularly correlations between users’ level of concern about the conflict, their immediate degree of threat (based on proximity to the conflict), and their second screen usage patterns. Results indicate that the higher the threat level users faced, the more frequently they used second screens, and their second screen usage rose as their concern levels and cognitive needs increased. When the threat increased, users’ cognitive needs increased, as did their second screen usage. Concurrently, although concern levels correlated with second screen usage, they did mediate between the threat level and second screen usage.

This study contributes to our understanding of the media’s role during violent conflicts from the perspective of threatened civilians, indicating that as technology enables us to stay constantly connected and not limited to a single platform, people are likely to use the full variety of options available.

**Key words:** Second screen, new media, cognitive needs, war, civilians under threat, Israel

**Introduction**

In May 2021, Israel and Gaza engaged in 12 days of a military operation, “Guardian of the Walls,” which, like previous violent confrontations in that conflict-ridden area, involved rockets fired on Israeli cities and towns as well as injuries and harm to civilians on both sides.

The media’s role in wars and other violent conflicts has long been the focus of research attention (Althaus, 2003; Bennett et al., 2007; Blondheim and Shifman, 2009; Kalb, 2007; Liebes and Kampf, 2009; Nobrstedt et al., 2000; Peled and Katz, 1974; Tenenboim, 2017; Wolfsfeld, 1997; Yarchi, 2016). More recently, especially in the last two decades, studies have begun examining the role that new media, particularly social media, play in these dangerous situations (Bennett, 2013; Evans, 2016; Knüpfer & Entman, 2018; Livio and Cohen-Yechezkely, 2019; Malka et al., 2015; Melki and Kozman, 2021; Merrin and Hoskins, 2020; Schafer et al., 2019; Wolfsfeld, 2018; Wolfsfeld et al., 2013).

The phenomenon of second screen use—that is, the use of smartphones and other portable devices while watching television—has attracted significant attention over the last decade. Scholars have examined usage patterns and gratifications, as well as the social, professional, economic, and political aspects of using second screens. Most studies in this field have focused on live sport and political broadcasts (Gil de Zúñiga et al., 2015; Gil de Zúñiga and Liu, 2017; Kim and Kim, 2020; Marín-Montín; 2020; Segijn et al., 2017; Weimann-Saks et al., 2019). Although the understanding that media usage is a major and meaningful part of any crisis situation (at both the individual and the national levels), and despite research having already recognized second screen usage as a notable phenomenon, no study has examined second screen usage in times of war or violent conflict, especially when civilians are directly affected, as was the case for Israelis on whom rockets were being fired.

The current study examines the role that second screen usage played in the lives of Israeli citizens during the tension-filled days of Operation Guardian of the Walls. Particular focus is given to the correlations between users’ level of concern due to the war and their immediate degree of actual threat, based on their relative proximity to the war zone, and their second screen usage patterns.

***The Media in Times of War***

The critical role of the media in our lives is particularly pronounced during events such as natural disasters, mass terror attacks, and assassination attempts on national leaders, in addition to wars and other national emergencies (Katz and Liebes, 2007; Leibes, 1998; Wolfsfeld, 1997). During such emergency events, both the scope and level of the media–government–public interaction is disproportionate to routine interaction. Such disproportionality is intensified even further when this tripartite relationship is expanded by the addition of other players, such as the military. The adverse nature of the elements of the crises also increases this disproportionality (Bennett et al., 2007; Wolfsfeld, 1997; Yarchi, 2016).

Research on the role of the media during wartime has addressed a vast range of topics, including the characteristics of the coverage of the conflict and the representative patterns of the players involved (Kalb, 2007; Liebes and Kampf, 2009; Nobrstedt et al., 2000; White, 2020). Other issues examined have involved the ways in which conflict coverage affects decision-makers and both local and international public opinion (Hammond, 2018; Miller and Bokemper, 2016; Sobel et al., 2020; Wolfsfeld, 2004), as well as institutional aspects, such as the reciprocal relationships among representatives of the military–government–media triangle, and how governments and other political players enlist the media to promote their policies (Ahmad, 2019; Bennett et al., 2007; Blondheim and Shifman, 2009; Livio and Cohen-Yechezkely, 2019; Yarchi, 2016). Another fertile field of research in this context (not addressed in this study) includes various aspects of war journalism, including professional dilemmas and challenges (Livio and Cohen-Yechezkely, 2019; Stuart and Zelizer, 2004) and the influence of the evolving media landscape on professional journalism work (Tenenboim, 2017) ranging from a normative perspective (Althaus, 2003; Neiger et al., 2010) to a cultural one (Liebes, 1997).

***War and Crisis in the Age of New Media***

The emergence of new media has evoked broad scholarly interest in the context of the coverage of wars and other crises (Bennett, 2013; Evans, 2016; Knüpfer and Entman, 2018; Melki and Kozman, 2021; Merrin and Hoskins, 2020; Wolfsfeld, 2018; Wolfsfeld et al., 2013). Scholars generally agree that in light of the unique features of new media, the balance of power in the political communication arena must be reassessed. Moreover, this reassessment must consider the potential damage this new media can cause compared to the advantages it may apparently offer to other players in the field (Lev-On, 2012, 2018; Livio and Cohen-Yechezkely, 2019; Weimann, 2006; Wolfsfeld, 2018; Wolfsfeld et al., 2013).

Naveh (2008) and Lev-On (2010) described the extensive activity conducted through the web over a broad range of platforms during the 2006 Second Lebanese War. This activity included local and private initiatives to disseminate up-to-date information on websites, forums, and dedicated blogs using email and social networks, civilian volunteer recruitment ventures, messages of a humorous–satiric nature, updates on the welfare of relatives, and criticism of decision-makers. Expressions of support for the army and the government were also expressed over the web during this conflict. People turned to diverse uses of new media to fill what was considered a void left by the authorities’ purportedly impaired functioning during wartime, particularly in matters related to the home front (Lev-On, 2010; Naveh, 2008). Bracken et al. (2005) highlighted the importance of smartphones during times of crisis, contending, for example, that smartphone–based interpersonal communication networks, combined with television, constituted the primary source of information during the terrorist attacks of September 11, 2001, in the United States. Katz and Rice (2002) proposed that smartphone use was effective during the course of the events of September 11th because it enabled the immediate transfer of information and helpedenabled individuals family and close friends. Other studies have focused on natural disasters, such as the 2004 Indian Ocean tsunami and Hurricane Katrina, during which new media also became a highly effective tool for managing the crises, operating in the service of authorities, citizens, and small organizations (Macias et al., 2009; Procopio and Procopio, 2007).

***Individual Media Usage under Threat***

When examining the role of media in times of war, as well as during other disasters and crises, numerous studies have focused on the perspective of the individual, as the levels of threat to them, both actual and perceived, during such times increase (Dalrymple et al., 2016; Frey, 2018; Huang et al., 2020; Lev-On, 2010; Malka et al., 2015; Naveh, 2008; Shejter and Cohen, 2013; Singh et al., 2020). Two classic communication theories can help elucidate the correlation between people’s reactions to threatening situations and their media use patterns: uses and gratifications theory and media systems dependency theory.

Media scholars consider the uses and gratifications theory an efficient, user-centered framework for reviewing and examining users’ interactions with and within media (Katz et al., 1974; Rubin, 2002; Ruggerio, 2000). According to this approach, the audiences or users of various media-related activities are mediated, in that they depend on the active selection and usage of different media choices. Therefore, efforts have been made to identify the sources of social and psychological needs that create media expectations, including cognitive and affective needs (Katz et al., 1974). From a more current perspective, uses and gratifications theory has been used to examine the primary needs of prospective audiences that are fulfilled by new media (Gan and Li, 2018; Rafaeli and Ariel, 2008; Rathnayake and Winter; 2018).

Studies based on the uses and gratifications the approach have also explored the general uses of smartphones (Joo and Sang, 2013), or specific application usage such as smartphone-enabled social networking by adolescents (Gan and Li, 2018; Sanz-Blas et al. 2013). In their work, Sundar and Limperos (2013) appraised smartphones as examples of the challenges arising when applying the current uses and gratifications theory, including theoretical and empirical questions concerning smarphones’ definition as a medium, as well as their content, process, and affordability.

Inspired by the uses and gratifications approach, Malka et al. (2015) examined civilian uses of WhatsApp during Gaza’s Operation Protective Edge (July 2014), another military operation that involved direct attacks on civilians, heavy casualties, and damages. The authors found that the highly popular social network was used in several surprising ways, including as a news source, thereby gratifying people’s growing cognitive needs. The researchers also noted a close correlation between people’s proximity to the war zone (actual threat level) and the volume of diverse usages of WhatsApp for multiple gratifications, a finding that can be explained as people’s reaction to their perceived threat and concern level (Malka et al., 2015). Kozman and Melki (2016) studied the uses and gratifications of media among displaced Syrian nationals in the ongoing internal Syrian conflict. The authors showed how the Internet and social media played a significant role in these people’s lives, especially regarding their need to stay informed. Finally, Shejter and Cohen (2013) evaluated the use of smartphones among Israelis during the 2006 Second Lebanese War and the 2009 Operation Pillar of Defense in Gaza. The researchers observed that during these periods, smartphone usage increased because of their most fundamental characteristic—portability—which renders them constantly and consistently available

The second theory that contributes to our understanding of media usage during dangerous crises is media dependency theory. Ball-Rokeach and DeFleur posited that media dependency is “the dependency of audiences on media information sources—a dependency that leads to modifications in personal and social processes” (1976: 5). Thus, in conditions of ambiguity, such as a natural disaster or a violent conflict, the mass media becomes the undisputed source of public information. However, significant changes in media production resources and consumption suggest the need to reassess the theory when moving from more traditional media outlets (television, radio, newspapers) to a multi-channel, multi-platform digital environment. Theoretically, in this new context, everyone can reach multiple sources of information anytime, anywhere.

Lowrey (2004) found a strong effect of external threat on the degree of media dependence. Lowrey claimed that for most citizens, the sense of threat is a stronger predictor of dependency on communication than are education, income, or community ties. This indicates that people are more dependent on television and newspapers than on interpersonal communication, despite having been found to rely more on interpersonal communication than on the radio or the internet. Like the uses and gratifications approach, media dependency theory has been assessed in the context of the internet and social media era and has been found to still be highly relevant (Kim and Jung, 2017; Li and Lin, 2016; Lin and Lagoe, 2013; Lyu, 2019; Maxian, 2014; Riffe et al., 2008). Nevertheless, no study to date has examined media usage of a second screen when individuals are under threat.

Media dependency theory implies that an increase in people’s actual—as well as perceived—exposure to threat will lead to an increase in their media dependency on both the micro and macro levels (Ball-Rokeach, 1985; Ball-Rokeach and DeFleur, 1976; Loges, 1994; Lyu, 2019). In such situations, people will tend to make greater efforts to reach reliable, up-to-date sources of information concerning the threat they are facing. Consequently, it can be valuable to study the phenomenon of the use of second screens by those facing immediate, large-scale threats.

***Second Screen Usage***

Gil de Zúñiga et al. (2015) defined the second screen phenomenon as use of an electronic device or screen to obtain more information or to participate in real-time discussion while simultaneously watching television, accessing the internet or social networking sites, or watching an event, etc. Keinonen and Shagrir (2017) noted that the immediateness of a television program could be enhanced by using digital platforms and social networks, which function as a second screen. Similarly, Hayat and Samuel-Azran (2017) argued that second screen usage involves looking up information and interacting with others by logging onto social networking sites. Blake (2016) defined the second screen experience as engaging with related media content on two screens simultaneously. Finally, in a study by Segijn et al. (2017), 60% of participants indicated having simultaneously used multiple screens at least once, with the TV–smartphone combination being the most prevalent. Marín-Montín (2020) found that social networking sites are a vital element of second screen usage related to television consumption.

Kim and Kim (2020) found that the use of social live-streaming services can be linked to psychological factors such as social well-being and loneliness. In this sense, use of a second screen may be considered a form of media multitasking. In examing the reciprocal relationship between media multitasking patterns and viewers’ needs and gratifications, Wang and Tchernev (2012) found that viewers’ emotional needs and media multitasking determine their level of emotional gratification. Multitasking increases emotional gratification when emotional needs are low and decreases emotional gratification when emotional needs are high. As Park et al. (2019) demonstrated, tweeting while watching television reduces viewers’ sense of transportation—defined as an integrative mingling of attention, imagery, and feelings—resulting in a reduction in their overall enjoyment of the program. Using a second screen during a live broadcast allows viewers to communicate with each other even when they cannot attend the event together in a shared physical space (Weimann-Saks et al., 2019). According to Gil de Zúñiga and Liu (2017), using second screens while viewing political media events increases engagement. These studies suggest that the motivation for using a second screen in such circumstances is twofold: searching for relevant information, and taking part in discussions and debates about the current broadcast. Drawing on this literature, our hypotheses are therefore as follows:

H1a: There is a positive correlation between actual threat level and the volume of second screen use.

H1b: There is a positive correlation between concern level and the volume of second screen use.

H1c: There is a positive correlation between users’ cognitive needs and the volume of second screen use.

H2: Cognitive needs and concerns mediate the correlation between actual threat level and the volume of second screen use.

**Methods**

***Participants***

Data for this study was gathered from a total of 411 participants (**51**% women, 49% men), ranging in age from 18 to 74 years (*M* = 42.96, *SD* = 15.75). All participants were native Hebrew speakers, non-religious (71.5%), and married (56.2%). We obtained the sample from an online panel representing the distribution of the Jewish-Israeli population based on figures obtained from the Central Bureau of Statistics. The sample size was estimated using G\*Power (Faul et al., 2009), based on a medium-sized effect, which demonstrated a 90% power to detect significant differences.

***Procedure***

Participants were asked to complete a short, anonymous survey that included demographic questions (response time ≈ 10 minutes).

***Measured variables***

*Independent variable:* *actual threat level*

We created a scale with three levels of actual threat based on the area of residence and possible danger: (1) far from the war zone without tangible danger; (2) secondary danger area with reasonable possibility of tangible danger; and (3) relative proximity to the danger zone with tangible danger***.***

***Mediators***

*Cognitive needs*

To assesscognitive needs,we used a 3-item scale (α = .83) rated from 1 (“very much”) to 5 (“not at all”). The items included statements relating to the contribution of information consumption to fulfilling a cognitive need, based on Malka et al. (2015) (e.g*.,* “Consuming information helps me better understand the events.”).

*Concern*

To assess the concern level,we used a 3-item scale (α = .65) rated from 1 (“very much”) to 5 (“not at all”). The items included statements relating to the sense of concern evoked by the security situation following the operation (e.g., “I am worried about friends/relatives in the security threat zone.”) Two items were omitted due to low internal reliability.

***Dependent Variable:*** ***Second Screen Use***

To assesssecond screen use,we used a 3-item scale (α = .97) rated from 1 (“several times an hour or more”) to 7 (“not at all”). The items included statements relating to what extent the participant used their smartphone while watching TV, based on Weimann-Saks et al.’s (2020) questionnaire, with minor adaptations to the context of a military operation (e.g., *“*I use a smartphone while watching TV to be updated on security events simultaneously on both platforms.”)

**Results**

To examine news consumption habits, we asked participants how often they used various media platforms to obtain updates on events related to the military operation. In the new media arena, participants reported receiving updates at least once each day via the following: 74% from online news sites, 51% from WhatsApp, 46% from Facebook, 34% from applications designed for security updates on smartphones, and 15% from Twitter. With regard to traditional media, 67% reported that they tended to keep up to date via television news broadcasts and 41% via radio, both at least once each day (Figure 1).

 **[Figure 1 here]**

Results show that, overall, the level of concern decreased depending on the level of the actual threat. The differences among the mean levels of concern are not significant. However, it is significant that the highest level of concern was in the southern part of the country, where many missiles fell every day (M = 3.72, SD = .79); followed by Tel Aviv, where several missiles fell daily (M = 3.69, SD = .77); and the lowest level was in Jerusalem, which, with the exception of the first day of conflict, was not a danger zone (M = 3.57, SD = .79). Unexpectedly, results show a slight increase in the level of concern (M = 3.61, SD = .97) in the northern part of Israel, generally considered an area of threat in another, unrelated front, and where no missiles fell during this operation.

To evaluate H1a, we computed Spearman correlations between actual threat level and second screen use. As expected, a significant positive correlation was found (*r* =.21, *p* < .001) To evaluate H1b and H1c, we computed Pearson correlations among the research variables. Again as expected, a significant positive correlation was found (*r* = .22, *p* < .001) between concern and second screen use (H1b). A positive correlation (*r* = .24, *p* < .001) was also found between cognitive needs and second screen use (Table 1).

 **[Table 1 here]**

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To examine the mediating role of cognitive needs and concern in the relation between actual threat levels and second screen use (H2), we used Hayes’ (2018) PROCESS bootstrapping command with 5,000 iterations (Model 4). The analysis treated actual threat level as the predictor variable, cognitive needs and concern level as mediators, and second screen usage as the dependent variable. The 95% confidence interval (CI) for the direct effect of actual threat level on second screen usage did not include 0 (95% CI [.196, .598]) with 5,000 resamples, *F* (3, 401) = 18.36, *p* < .001. The indirect effects of the actual threat level on second screen usage through (a) cognitive needs did not include 0 (95% CI [.049, .062]); and through (b) concern did include 0 (95% CI [–.015,.068]) with 5,000 resamples. In other words, the model indicated only an indirect effect of the actual threat level on second screen usage through cognitive needs and no effect through concern (Figure 2).

  **[Figure 2 here]**

**Discussion**

Violent conflicts have always been causes of human suffering. Wars that directly involve civilians, turning the home front into war zones, are the most egregious in this regard. Using media during such events as a means for gratifying their unique needs is one way in which civilians try to cope with these intolerable situations (Kozman and Melki, 2016; Lev-On, 2010; Malka et al., 2015; Naveh, 2008).

The current study examined the usage patterns of second screens by Israeli civilians during Israel’s Operation Guardian of the Walls against Gaza, which took place over 12 days during May 2021. The study aimed to understand what conditions led to increased second screen usage. We investigated the potential effects of cognitive needs, concern level, and degree of actual threat (relative proximity to the fighting areas and the locations under missile attacks) on civilians’ usage of second screens.

According to the study findings, our first hypothesis, which predicted a positive correlation between the actual threat level and the amount of second screen use, was confirmed. That is, the higher the actual threat level faced by media users, the more frequently they used their second screens throughout the period of the war. Furthermore, our next two hypotheses—regarding the correlation between users’ concern levels and cognitive needs and the amount of second screen usage—were also confirmed, with the volume of users’ second screen usage rising as their level of concern and their cognitive needs increased. In other words, during the operation, people tended to make more intense use of second screens to respond to their situationally-driven reactions and needs.

Our last hypothesis concerned mediated correlations between actual threat levels and second screen usage. Specifically, we assumed that users’ cognitive needs and concerns would mediate their actual threat level and second screen use patterns. However, our findings indicated that an indirect effect of actual threat level on second screen usage was connected only to cognitive needs, not concern levels. That is, as the degree of actual threat increased, users’ cognitive needs increased as well, as did their second screen usage. At the same time, although the concern level was directly correlated with second screen usage, it did not fulfill a mediating role between the actual threat level and second screen usage. This finding is especially noteworthy, indicating that people’s motivations for adding second screens to their media consumption habits under such circumstances are not limited to cognitive ones. One explanation for this might be that actual threat level and the subjective feeling of concern are not necessarily aligned. For example, some people may feel concerned although they are in a relatively safe zone, while others might not feel concerned even if they experience life under fire. Others may lie about such feelings, finding it inappropriate or undesirable to admit their unease. Further research should examine these thought-provoking relationships between actual threat level and concern as reported by the study’s participants.

The current study’s findings also suggest how meaningful the use of second screens was for the Israeli population during a war that directly threatened their lives and the safety and well-being of their loved ones. As the negative emotions associated with such a challenging situation became stronger, and as users’ actual threat level grew, second screen usage became more intense. A similar trend was revealed regarding users’ cognitive needs. As the literature has shown, people’s cognitive needs increase during times of crisis, followed by a rise in their search for relevant information (Malka et al., 2015). According to the current study, people’s search for information is not limited to their routine media consumption habits, but spreads to the realm of second screens.

As with other research that focuses on one particular case study, the ability to draw general conclusions based on our research is limited. Future studies should examine the characteristics of second screen usage under severe circumstances (e.g., war, terrorist attacks, natural disasters) in different situations and countries. In this study, we focused on how and the extent to which civilians’ concern level affected their second screen usage during Operation Guardian of the Walls. Future research should investigate the role of related emotions, such as fear and anxiety, in this context.

As previously mentioned, people’s willingness to admit to the very existence of such emotions might be affected by their perception of how legitimate those emotions are perceived during times of national crisis, as in routine times. Thus, research in this field might examine the use of more objective methods to measure actual concern, fear, and anxiety, instead of using participants’ self-reported levels.

Uses and gratifications theory combined with media systems dependency theory could potentially produce interrelated explanations for related behavior in times of war. Nevertheless, since both theories were initially used to consider mass media and audiences’ interactions with a relatively small number of media outlets, this research offers new insights regarding second screen usage. Again, the user is the sole party responsible for their personal media-related activities, gratifications, and dependencies; thus, it is essential to understand the behavior and perceptions of various audiences and users in such times. In this sense, the current study contributes to our understanding of the media’s role during times of war from the point of view of civilians under threat. Furthermore, it indicates that as technology enables us to stay constantly connected and not limit ourselves to a single platform, people are likely to use the full variety of options available.

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Figure 1.

Figure 2.



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Figure 2: The mediation model between actual threat level and second screen usage through cognitive needs and concern