"So-called privacy breeds evil": Narrative Justifications for Intimate Partner Surveillance in Online Forums

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A growing body of research suggests that intimate partner abusers use digital technologies to surveil their partners, including by installing spyware apps, compromising devices and online accounts, and employing social engineering tactics. However, to date, this form of privacy violation, called intimate partner surveillance (IPS), has primarily been studied from the perspective of victim-survivors. We present a qualitative study of how potential perpetrators of IPS harness the emotive power of sharing personal narratives to validate and legitimise their abusive behaviours. We analysed 556 stories of IPS posted on publicly accessible online forums dedicated to the discussion of sexual infidelity. We found that many users share narrative posts describing IPS as they boast about their actions, advise others on how to perform IPS without detection, and seek suggestions for next steps to take. We identify a set of common thematic story structures, justifications for abuse, and outcomes within the stories that provide a window into how these individuals believe their behaviour to be justified. Using these stories, we develop a four-stage framework that captures the change in a potential perpetrator's approach to IPS. We use our findings and framework to guide a discussion of efforts to combat abuse, including how we can identify crucial moments where interventions might be safely applied to prevent or deescalate IPS.

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1 INTRODUCTION

Intimate partner violence (IPV) is a widespread societal problem, causing immense harm to individuals, families, and communities. Intimate partner surveillance (IPS) is a distinct subset of IPV that describes the deliberate surveillance of an intimate partner, with or without their knowledge, via technical and non-technical methods. Although prior research has studied how IPV abusers speak about their behaviour in in-person contexts [28, 50], little is known about how these individuals

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speak about their behaviour on online spaces. Importantly — and perhaps most concernedly — there is a lack of knowledge about how online communities may foster discussions of abuse, whether to validate abusive behaviours towards others or challenge these disclosures when they are shared.

This lacuna of evidence is particularly concerning in light of the power of online communities to reinforce and cultivate positive or toxic beliefs and behaviours [16], and the perception of anonymity online that empowers users to disclose things they may not admit to in real life [31, 75]. Our recent work [89] highlighted how these online social dynamics play out in the context of IPV. Through a mixed-methods analysis of a dataset of publicly available online forums, we showed how online communities centred on relationship infidelity can also become places where would-be abusers connect to trade IPS stories and strategies. While our prior work identified *where* online these conversations take place, and *what* IPS attacks are being surfaced, we stopped short of investigating *why* users were interested in committing them and *why* they sought information online on how to conduct them.

In this study, we address these gaps through qualitative analyses of 556 story posts from the dataset collected in our prior study [89]. We find that these forums contain detailed accounts of IPS shared with other forum-goers through *storytelling*, and offer new insights into perpetrators, potential perpetrators, and those who decide against IPS. We provide a list of 21 justifications for a poster's choice to use IPS that sought to legitimise and excuse their behaviour to others. The four most prevalent justifications were posters describing their need to (1) *gather digital evidence of infidelity*, (2) *check their target is being faithful*, (3) *understand changes in their target's behaviour*, and, most concernedly, to (4) *control their target's devices/accounts*. While each story in our data was unique, all stories contained consistent sequences of events from which we distil common narrative pathways. Our findings also demonstrate there are five main motivators for the poster to share these narratives: (1) requesting *guidance* on committing IPS, (2) to *support* others with similar experiences, (3) to *gatekeep* information from new posters, (4) to *boast* about their use of IPS, and even (5) to *advise* others on ways to commit IPS. To draw all of these findings together, we generate a conceptual framework from grounded theory [44] that illustrates the four-step process of a poster's attitude change towards the use of IPS from contemplation of an attack to reflection on abusive behaviours. We also identify six important influences on a poster's transition through each stage of our model, and use it to build on prior knowledge of the cyclic nature of abusive behaviours. We contribute this model with the intent to provide insight into the thought processes of a potential attacker.

In summary, our findings make the following contributions:

(1) we demonstrate how users on online infidelity forums leverage storytelling to disclose detailed accounts of their use of or interest in perpetrating IPS;
(2) we identify five functions of these stories shared on these online spaces;
(3) we present a list of 21 justifications for IPS that posters use when describing their choices;
(4) we present a four-stage framework that models a person's change in attitude towards IPS as they move from contemplating an attack to reflecting on their actions against a target.

We conclude by examining the broader issues raised by our work. We outline how researchers could learn to use online forums that discuss infidelity as a data source on potential perpetrators while balancing out the challenges that arise with studying these groups. We offer suggestions as to how interventions both online and offline could be designed with safety in mind based on our findings in an attempt to deescalate or dissuade individuals from using IPS. Finally, we identify ethical and moral challenges with leaving such communities 'to their own devices' and suggest approaches to designing safer spaces online.

2 RELATED WORK

Intimate Partner Surveillance. A small but growing body of work examining technology and IPV has detailed technology's role in the strategies perpetrators use to stalk, monitor, intimidate, and harass their targets [37, 62, 67]. In particular, prior work has shown technology plays a large role in IPS, a sub-type of IPV in which a perpetrator deliberately monitors an intimate partner, with or without their knowledge, through a combination of technical and non-technical means [19]. Much of the literature on IPS focuses on spyware, and/or the re-purposing of non-spyware applications for abuse [25, 37, 96]. Frequently, perpetrators also use victims' children and family members as both subjects and agents of IPS, making it extremely challenging for their targets to avoid harm [48, 67]. In response to this threat, interventions such as *technology clinics* have been developed, in which technologists work directly with survivors to locate and mitigate breaches of security [36, 49]. Other interventions provide training and materials for survivors to identify security risks, secure their devices, and document privacy violations on their own [20].

A recent NortonLifeLock Online Creeping survey found that 46% of 2,000 Americans interviewed admitted to stalking an ex- or current partner online without their consent, with 10% admitting to installing spyware to monitor text messages, phone calls, emails, and photos [88]. In a measurement study of the Apple and Google mobile app stores, Chatterjee et al. [19] identified a significant ecology of smartphone apps that were easy for abusers to install and use to harm their victims, and that could remain undetected by antivirus tools, with many actively promoted for use in IPS [19]. Although these studies illuminate the technical landscape of available software, no prior work has focused on the individuals who use these tools to surveil their victims. For abuse that is not technological, prior work showed how analyzing abusers' understanding of their activities helps educate interventions strategies [28, 50]. However, to the best of our knowledge, no studies have positioned the accounts of individuals who claim to use IPS either in-person or online as a valuable site for research in their own right. As a result, we seek to similarly provide a more complete picture of IPV by shining a critical lens on the individuals who report using technical and non-technical approaches to IPS. In this work, we focus on online, self-reported descriptions of IPS to build theories about how potential perpetrators view IPS.

Narrative, Violence, and Abuse. Storytelling has long been identified as a central cultural mechanism for constructing meaning for both teller and listener. This is because people rarely describe disparate events, but rather impose a narrative that connects them. In this way, stories help individuals make sense of their reality and communicate it to others. In HCI and CSCW, a growing corpus of work has explored the use of narrative and storytelling as discrete research entities, the former as a type of artefact from which we might better understand the human condition, and the latter as a collaborative design practice [32, 33, 57, 70]. Both strategies have proved useful for researchers working with victims of domestic violence: Clarke et al. [21, 22] and Capel et al. [15] used cultural probes within a therapeutic setting to enable victim-survivors to share their stories of abuse and recovery. Concerning technology abuse, a variety of prior works solicited stories from survivors of IPV to understand their security, privacy, and safety practices and their abuser's tactics [26, 35, 37, 67, 72].

Such accounts have also permitted scholars to identify the cyclic nature of abusive behaviours within intimate relationships. Lenore E. Walker created the *"cycle of abuse"* model to describe the different cycling patterns of calm (tension-building phase), violence (acute violence or abuse), and reconciliation (honeymoon phase) that abusers would use on their victim-survivors [91]. In breaking the tension-building stage down further, Scott Allen Johnson identified an abusive individual acting out a revenge plan, self-destructive behaviour, victim grooming and then conducting

actual patterns of violence [54]. These activities are then followed by a sense of relief, fear of consequences, distraction, and rationalisation of abuse. While these models have been established through validation against in-person users of violence, it is unclear as to whether such cyclic behaviour can also be determined from the accounts of perpetrators online.

IPV narratives are an especially poignant focus of study, as they are not only the foundation of the recognition of domestic violence as a societal issue rather than an individual-level problem [27] but also a tool for shaping the interventions and social changes we might envision [61]. To not unpack, or deconstruct, stories about domestic violence is to leave dominant social discourses and relations of power intact and to obscure the direct harms caused to marginalised groups [70].

We note that the majority of understanding about the existence and impact of domestic violence is sourced from victim-survivor populations due to the difficulties in eliciting accounts of abusive behaviour that can have legal consequences for disclosure. When disclosures do occur, interventions with perpetrators have shown that they frequently shape narratives in ways that deny, minimise, or blame others for their abusive actions (i.e., victim-blaming) [50], while also providing sympathetic and emotive justifications for their actions [65]. In in-person interventions, Jeff Hearn categorised the accounts of 75 perpetrators in in-person interventions as either justifications, excuses or confessions to explain their use of violence against others. However, Hearn stopped short at sub-categorising these accounts by thematic content [50].

Our work goes a step further to rectify this lack of understanding and identifies potential perpetrators and those who describe causing harm to their intimate partners in online spaces, and who volunteer their stories without the presence of an intervention or research study. To our knowledge, we are the first to identify, analyse, and scrutinise posters who share narrative accounts of IPS and the cultural norms of the online communities that might solicit them.

Disclosures of Stigmatised Behaviours Online. In this work, we focus on online communities of potential IPS perpetrators and will see many similar dynamics in terms of joint sense-making and support structures for this form of abuse. By contrast, prior work has instead focused on online communities and their role in allowing individuals to share and receive emotional and informational support, particularly on issues that might seem sensitive or confidential to in-person social circles [31, 75]. This is due to what scholars have termed the *online disinhibition effect*: the phenomenon of users increasing the frequency and content of what they share in online pseudo-anonymous spaces, where they might avoid social stigmas that result from disclosure. This effect has been well-documented in HCI: studies have examined online communities for opioid-use recovery [11], self-harm [73], and homelessness [53]. This work has shown that online spaces can be crucial to the development of social support for individuals with stigmatised identities, by providing them with content to passively consume online, or opportunities to safely contribute to a community through a pseudo-anonymous username. The study of these online spaces, particularly those dedicated to sensitive topics such as violence that are especially challenging to evoke in-person, can help scholars understand how interventions can better meet the needs of these communities [62] or prevent further harm caused to vulnerable groups that they may be targeting.

Existing work at the intersection of stigma and domestic violence is predominantly focused on better understanding (and therefore combating) the blame, discrimination, and shame that many victims experience as a result of being abused [69, 87]. However, there still exists a notable self-stigmatisation and negative self-image that can form from disclosing the use of abusive behaviours to others [50], suggesting that perpetrators may go online to find audiences where they might speak about and make sense of their actions. While some work has examined how victim-survivors

might make use of forums to share their experience of technology-facilitated abuse [62], we are the first to contribute an analysis as on how and why potential perpetrators share accounts of abuse.

Online Infidelity Forums. The perception of and/or accusations of infidelity–the action or state of being unfaithful to a spouse or other sexual partner–has been identified as a trigger for IPV in both online [29] and offline settings [71, 85]. Importantly, while self-reported marital infidelity has not been significantly associated with IPV, the *perception* of a partner's infidelity has been significantly associated with risks for sexual coercion, physical abuse and coercive control [7, 23]. As such, individuals who suspect their partners of sexual infidelity (whether true or otherwise) have been demonstrated to be more likely to commit IPV than individuals who do not [8, 55].

In addition to studying how online spaces present new access to actions that might constitute infidelity, such as viewing pornography or engaging in online dating [5, 24, 64], it is important to also understand how individuals may seek out online resources for handling the complex social situations around infidelity. Strains on physical and mental health that can arise from the impact of infidelity have also been positively correlated for users seeking weak-tie social support, particularly through online communities composed of strangers [77, 97]. Building on this, we investigate publicly available online forums that discuss infidelity within relationships as a location where individuals may share strategies for and accounts of IPS and IPV. We focus on forums designed around the discussion of infidelity, rather than the influence of online spaces on infidelity [83, 93].

Specifically, we analyze a dataset that we previously collected and analysed in Tseng et al. [89]. The dataset consists of posts from three publicly available online forums dedicated to the discussion of infidelity. All of these forums contain a substantial number of users who actively sought and provided emotional and practical guidance on the actual or perceived presence of infidelity. In addition to collecting the dataset, our prior work [89] used a mixed-methods analysis to produce a taxonomy of the *methods* that potential abusers report using—but stopped short of examining potential abusers' justifications for these abusive behaviours. In this work, we build on our understanding of the forum landscape by conducting a narrative and grounded theory analysis into the language, story content and thematic patterns offered by the posters themselves. In this way, we offer a novel conceptual framework to better understand the *mindset* of forum posters interested in committing acts of IPS.

We want to be clear that our goal is not to criticise individuals who seek reassurance on the forums about challenges in their intimate relationships. Many of the posts in these forums took on a question and answer format (e.g., *'She's cheating again, what should I do?'*) that resulted in other members providing advice on navigating divorce proceedings, moving out of shared living arrangements, or relationship counselling. However, a significant proportion of posts also contained interest in—or experiences of—perpetrating IPV, IPS, or both. Our prior work [89] describes how we filtered the posts on these forums to find those that contained IPS-relevant content; the analysis reported in this paper focuses on this subset.

3 CONSTRUCTING A DATA SET OF IPS NARRATIVES

While exploring the infidelity forum dataset in our prior work [89], we noticed that many posts reporting IPS were written in a narrative format, with clear characters (posters, targets, friends, and family members), settings, and chronological progression of events [79]. These narratives are the basis of the phenomena we report in this study. We first briefly describe the three forums included in the dataset and then our procedure for extracting narratives that discuss IPS.

Forum A. Dedicated to the "*discussion of investigative equipment*," this forum encourages users to share ideas on scrutinizing their marriage partner's activities. Discussion focuses on best practices for snooping on partners, recommendations for spyware tools, and personal anecdotes of users'

	Forum A	Forum B	Forum C
IPS-relevant threads$^{\alpha}$	82.40%	60.80%	17.60%
IPS-relevant 'story' posts	121 posts	303 posts	132 posts
The following statistics refer to the body of IPS-relevant 'story' posts within each forum.			
Average post length (stddev)	163.60 words (141.23)	339.97 words (302.27)	218.63 words (268.27)
Unique users posting 'story' posts	89	155	69
Average 'story' posts/user	1.36	1.95	1.91
Date ranges of 'story' posts	09/19/07 - 09/22/19	02/28/12 - 09/22/19	08/08/17 - 12/02/19

Table 1. Summary of IPS-relevant threads and 'story' posts across each forum in the dataset. ($^{\alpha}$percentage of random sample of 250 threads per forum tagged as relevant to IPS in [89].)

experiences with private investigators. Forum A is a subforum of a larger parent website, founded in July 2009, that contains links to books, web pages, and radio shows, as well as forums that seek to help users overcome marital conflicts. As of December 2019, the parent site had over 2,317,762 posts in 133,243 topics (threads) made by 71,042 registered members.

Forum B. Our second forum is dedicated to detecting lying, cheating, and deception in romantic relationships. It aims to provide tips on how to detect sexual infidelity and navigate complex social situations and recommends approaches for challenging an unfaithful partner. Forum B is also a subforum of a larger website that includes resources on practical advice for managing an intimate partner who is suspected of lying and/or being sexually unfaithful. The parent site, founded in 2004, has a thriving community of authors that contribute semi-regular blog pieces related to the topics of infidelity, lying, and IPS. As of December 2019, the site had over 79,472 posts in 10,337 threads made by 23,541 registered users.

Forum C. Our third forum describes itself as a supportive community for people who are experiencing, or have experienced, infidelity in a relationship. The forum has 13 explicit rules by which users must abide, including the discouragement of disclosure of personal information, bans against the "*encouragement of abuse/hate/violence/revenge*", and the promotion of respectful communication between posters. Forum C is part of Reddit.com, an online content curation and social media site where posts are organised into user-created communities of interest, called subreddits. As of March 2020, Alexa World Rankings hold that Reddit is the 21st most-visited site in the world [4].

Extracting narratives of IPS. To filter the existing dataset to isolate narratives (stories) only, a team of four researchers went through the dataset systematically and tagged posts for inclusion if they met one of the following criteria:

(1) The poster introduced themselves, their target, and/or other people within their post [18];
(2) There was a clear representation of a single or a pattern of event(s) [1];
(3) There is a chronology of the events described [9];
(4) Individuals mentioned within their post demonstrate agency, causality, or motivation in bringing about change to their situation [51].

These criteria encompass a range of scholarly definitions for online communication that may constitute a *story* [1, 9, 18, 51]. We continued to sample threads and tag stories until we reached theoretical saturation [42], where further sampling did not result in discoveries within the data. Where appropriate, we also coded for contextualising details that spanned multiple posts from the same user, but that may have not in isolation constituted a story. Posts that met these criteria were included in our final dataset. In total, our resulting dataset included 556 stories (Table 1), ranging from the minimal representation of reporting a single event, to a series of logically-sequenced events, to the direct demonstration of causality on the events within the story.

Ethics. We are sensitive to the ethical tensions around the use of online discussions of highly personal topics for research, particularly surrounding the concerns that users may have expectations to privacy when participating in online forums [86]. The dataset includes publicly available fora accessible to any Internet user without authentication. We did not store images or pursue identification of people from their forum posts. To jointly protect the identities of the individual users and communities, and to not advertise the existence of this site to a wider audience we have performed several abstractions in our reporting of our findings. These include providing pseudonyms for users we quote and rewording segments of these posts to mitigate the risk of identification through search engines. Our study was IRB approved.

4 NARRATIVE ANALYSIS OF IPS STORIES

Following Wilson and Hutchinson [94], we used two qualitative approaches to analyze the 556 story posts in our dataset. The first, narrative analysis, provided insight into the structure and the function of the stories told within these forums. The second, grounded theory (discussed in the next section) [43], made discoveries about this data that we used to construct a theoretical framework on potential perpetrators of IPS. In combination, these methods are theoretically commensurable and methodologically complementary, producing divergent perspectives on the phenomenon under investigation [60].

4.1 Methods

Narrative analysis refers to a set of approaches to diverse kinds of texts that have a 'storied form' in common [79]. It provides a holistic approach to written or spoken communication that preserves context and particularity [78]. Narratives require a person to be actively involved in describing a subject such as surveillance by being a protagonist or a narrator, and so are direct insights into how individuals form and re-form their identities [68]. These stories can also continue to influence how the person views him/herself and makes decisions to act [52] that are important features for capturing how a potential perpetrator makes sense of their abuse. While narrative analysis includes several different frameworks, there are four typical forms that can be used in conjunction with each other in a single study: *structural*, *functional*, *thematic*, and *dialogic/performance* [6]. For this work, we utilized all these frameworks except dialogic, which studies the impact of the narrator and their story's content on an audience. This does not make sense for our study since the majority of people who constitute the audience (i.e., viewers of the site) cannot be identified [6, 96]. We acknowledge this analysis could be applied to a small subset of our data for stories that contained responses from the forum community yet these were not evenly distributed across the forums.

Structural analysis of a narrative involves examining particular characteristics, such as plot elements and characters (in our context, the poster, their target, and potentially family members). While stories may differ dramatically in terms of content, setting, and style of performance, Labov identified that many stories follow a common structure of four essential and two optional components that can occur in any order: *abstract (optional); orientation; complicating action; evaluation; resolution;* and *coda (optional)* [59]. Each component can be used as a tool to analyse narrative patterns, recognise recurring themes and ideas, and provide a semantic structure for content comparison between stories. In general, we were able to identify these six components within our data by segmenting each story post into structural components and using those segments to identify patterns.

Lucaites and Condit argue that despite the acknowledgement of the rise in importance of narratives, most studies consider narratives outside of the context that produced them [2]. To

remedy this, scholars have suggested corresponding ***functional analyses***, which examine how a given narrative functions in and acts upon the meanings and structures of a culture and society. This is particularly relevant within a community-mediated space such as an online forum [84]. For this form of analysis, we read each story in detail and identified the intended purpose of the story by scrutinising Labov's *resolution* sections in greater depth, writing out the intended meaning of the story and grouping the language used by the poster in a keyword search. We used these approaches to sort the stories into functional categories that were refined and developed across each forum. This process was informed by Reissman's seven functions of narrative work [80].

Finally, to identify and capture the complexities of meaning within our data set, we used inductive ***thematic analysis*** as described by Guest, MacQueen, and Namey [45]. We sought to identify whether our story posts followed a common or master narrative (meta-narrative), defined as a single, or several "*known trajectories of literary and rhetorical form*" [46]. We were interested in analyzing similarities across a story's beginning, middle, and end to identify if posters were relying on similar thematic themes or events in their accounts of IPS. We did this through placing each post on a rough, chronological timeline where key moments or events that changed the course of the story were illustrated using semantic labels (i.e. *'gathered more evidence'*). These pathways were then compared through the use of an alluvial diagram, Figure 1, shown later in this work.

We structure our findings from the narrative analysis by discussing: the *characteristics or events* that stories have in common (4.2); the *justifications* posters offered for their use of IPS (4.3); the *purpose* of posting these stories in these forums (4.5), and the *personal* and *contextualising* details shared by posters discussing their (prospective) attacks (4.4).

Throughout, we use the terms *poster* and *target* to retain both the direction and intention of the IPS attack while avoiding labelling people as a perpetrator and/or a victim-survivor because we are unable to verify the personal information of posters. In cases where we address the poster directly, we use the term *potential* perpetrator to signify the spectrum of this user group; from posters who consider the potential of perpetrating violence, to posters who have perpetrated violence and those in-between.

4.2 What events and actions do posters describe in their stories?

We begin by presenting the narrative pathways that the stories in our dataset followed. These pathways provide a high-level overview of how posters share their experiences of, and motivations for, using IPS against their targets. We define a narrative pathway here as a chronological walk through a story consisting of a three-act structure [34]: the first act is the *setup* (exposition, inciting incidents), the second is the *confrontation* (actions performed in response), and the third is the *resolution* of the story (resolution of tension, new questions).

Our analysis yielded 25 reoccurring themes (e.g., *demanded access to target's devices/accounts*, or *gathered more evidence*). Using these 25 themes, we performed a thematic cross-comparison across all of the stories to identify commonly occurring combinations of core choices, events, processes, or conclusions. All stories had key choice-points that divided pathways according to the choices made by the characters within the posts. Consider the following story paraphrased from our dataset:

> "*Looking for insight here...recently my wife has started to become more social with her co-workers. She's in a job where she works with a lot of men. Over the years she's lied consistently about our finances, but lately, she's also been lying about who she's out drinking with. I recently got hold of her phone and read some of her text messages that I found suspicious, she says "love ya" to men and I'm not happy with that. She found out, got cross at me for taking her phone and now she's locked it. I feel she's hiding something. Any suggestions for ways around her password? Cheers.*"

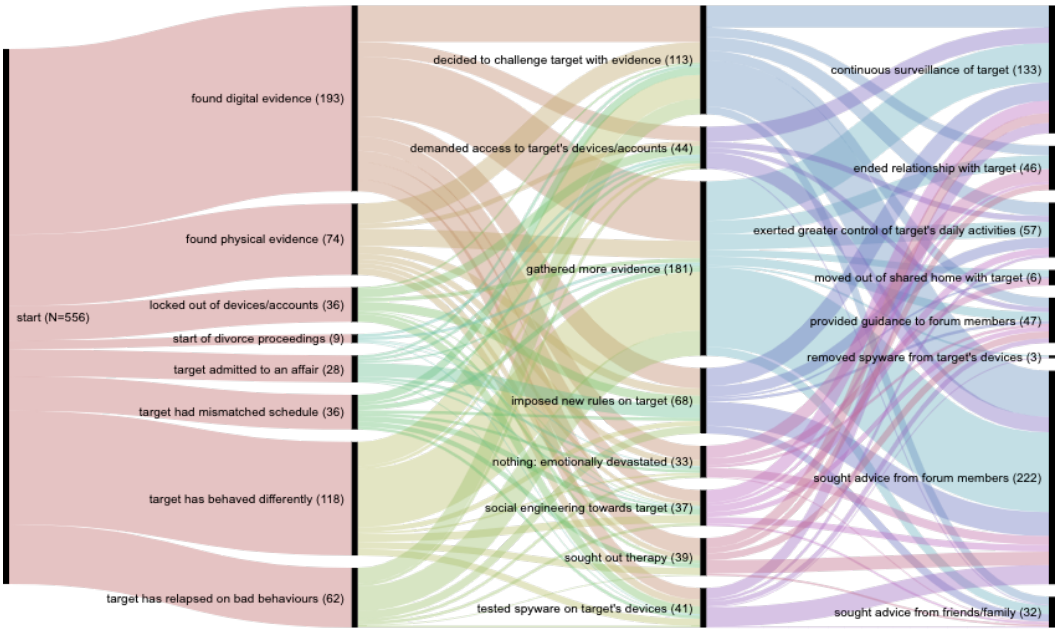

Fig. 1. Composite flowchart of the narrative events and their chronological sequences broken down into three key acts: the setup (left), the confrontation (middle) and the resolution (right). Each node describes one of 25 themes we identified within the narrative and the number of stories (N) that contained these events. Unless otherwise stated, actions refer to the poster.

This story follows one of the most prevalent narrative pathways we identified, as can be seen in Figure 1. The story begins with the poster describing how his *target has behaved differently*. He then proceeds to *gather more evidence* by accessing his partner's phone without her permission. Finally, he concludes by *seeking advice from forum members* about how to perpetrate further IPS by overcoming his target's password protections. This example also highlights the nuances contained within these stories: the poster clearly states that he has accessed his partner's phone without her permission and is looking for ways to access more information. Importantly, this poster also shares contextual details as to why he believes that his actions are justified (*"she's lied consistently"* and *"she's hiding something"*) and what kind of suggestions he might be expecting from this community. We now provide more detail on how posters in our dataset justified their use of IPS.

4.3 How do posters justify their use of IPS against their targets?

We scrutinised the story posts in our dataset to understand the justification that posters provided for their actions, particularly what they said caused them to perpetrate acts of IPS. A summary of the different justifications we identified is shown in Table 2.

The need to check their target is being faithful. Many posters in our dataset contributed stories that reported a history of being in a relationship with someone who had committed acts of infidelity in the past. These posters frequently cited IPS as a way to continuously check whether their target was now being faithful. Posters that used this particular justification often explicitly described the number of times a target had already committed or had been intending to commit acts of unfaithfulness. In many stories, the poster also described explicit rules they had set for the target, including rules regarding contact with a suspected affair partner, visits to locations where

The poster		**The target**	
Has discovered	Digital evidence using surveillance	Has changed	Their behaviour around the poster
	Physical evidence using surveillance		Their job or workplace
	Use of pornography / dating site		Their daily routine
	A target's device / account password		
Is challenged by	Problems with their use of spyware	Is accused of	Admitting to an affair
	Locked out of a target's accounts		Reacting badly to poster's accusations
	Their technical skill to install spyware		Relapsing on disallowed behaviour
Needs control	Of their target's communication	Possesses	The capability to detect spyware
	Of their target's everyday activities	Provides	Access to personal device(s) / account(s)
Poster & target			
Have jointly	Started marriage counselling		
	Acquired new technologies (i.e., devices)		
	Expressed a desire for closure post-affair		
	Needed evidence for court proceedings		

Table 2. List of different justifications used within posts to excuse IPS.

infidelity might be more likely (e.g., bars, restaurants), or how open the target's devices must be to the poster. These rules were meant to ensure that the poster could not or would not relapse into old behaviours that the poster deemed inappropriate or harmful to their relationship. However, despite a potential agreement by the target on these rules, posters often suspected that the target may have violated the rules by contacting an affair partner, or reverting to their *"old ways"*:

> *"I confronted my boyfriend with evidence when I caught him looking at porn. I said I wasn't happy with it in my relationship. He promised me it would stop, and it looked like it did. But then I checked his Internet history and he'd been looking at it every day, back to his old ways again ... Do you think it's still okay if I snoop?"* (Forum B, User 91)

As shown in this example, in many of these stories, IPS was justified as a way of checking up on whether the target was abiding by the rules, particularly if the poster and the target were going through a form of relationship counselling. Posters also sometimes described feeling vindicated in their use of IPS upon discovering that their target had violated the rules, regardless of whether they were fair or attainable.

The need to gather digital evidence of infidelity. Many of the posters in our forums had already accidentally or purposefully performed IPS through the discovery of digital evidence that suggested or proved their target's infidelity. Such evidence manifested in many forms, including text messages from an unknown contact, security texts containing two-factor authentication codes interpreted to signify a hidden email account, a pornographic website listed in a target's browser history, or financial records with unexplained purchases. When the discovery of such evidence was accidental, posters described going about their normal routine and coming across digital material that seemed out of the ordinary, ranging from accidentally glancing at the target's cellphone when a text message appeared to stumble upon the browser history on a shared machine:

> *"I just noticed my partner had their laptop open, it was an online dating website ... My heart sank. I knew they had already cheated or were at least trying to."* (Forum A, User 9)

In more deliberate investigations that sought digital evidence of infidelity, posters explicitly described accessing their target's device without their knowledge during a window of opportunity when the target was occupied, such as in the bathroom or at work. In some cases, posters described the *absence* of digital evidence as being evidence in itself:

> *"I waited until he left the room and checked his voicemail. Nothing there. There are definitely things missing in his call log. I think he's deleting them."* (Forum C, User 60)

In these cases, we saw that the absence of particular pieces of digital information, such as call logs or voicemails, caused the poster to believe that the target was making an active effort to remove or hide this information from them. Many posters interpreted this activity as evidence of unfaithfulness and expressed interest in gathering more evidence via IPS. In addition, receiving an unsatisfactory response to a direct challenge on the target's behaviour led some posters to use IPS as a means of gathering what they believed to be more satisfactory answers to their questions:

> *"... so, storytime. He denied he was seeing someone but I pushed him on it. Finally, he said 'nothing happened' with this person because he still loved me (yeah right!). Then I found out he was still writing smushy emails to her ..."* (Forum C, User 27)

Targets provided unsatisfactory responses in many ways, such as by avoiding answering direct questions through silence or misdirection, physically avoiding the poster, presenting what posters believed to be *"trickle-truthing"* (lying by omission), or denial in the face of reportedly *"concrete proof"*:

> *"I made up the saddest portfolio you could think of, 19 pages of concrete proof she had been cheating. I slammed the papers down in front of her face and the b*tch says all the texts weren't hers and they were just fake ones that I'd written with my spyware ... She avoided me for weeks, denying everything, until slowly with the help of this site I was able to piece together the truth."* (Forum B, User 55)

Often, posters believed that more digital evidence could be found via the same source as the initial evidence, as well as by widening their IPS to other information sources. Interestingly, we saw a correlation between how unsatisfactory posters found their target's responses to direct challenges, and how satisfied they were with the answers they obtained via IPS. In cases where targets refused to provide information to the poster, posters described feeling appeased by the information that was instead sourced by their use of IPS.

The need to understand changes in their target's behaviour. Posters frequently described a sudden or gradual change in their target's behaviour as justification for IPS: they wanted to investigate why their partners had made a change. Inciting changes ranged from spending more time on social media, to using personal devices in ways that could be considered secretive, to adjusting daily routines:

> *"... he's started leaving earlier for work every day and suddenly he's keen to start exercising? He's never been the physical type and then overnight he's started dressing nicer ... even wearing aftershave, why the sudden change?"* (Forum C, User 9)

A change in a target's sexual behaviour, whether an increased libido or a withdrawal from sexual activities altogether was a very common justification for posters interested in surveilling their partner. This could be a result of several posters linking to off-site resources (such as [76]) that identify changes in sexual behaviour as key indicators of sexual promiscuity, though we cannot verify this from our dataset. We also noticed that targets with female pronouns were discussed in more sexually explicit detail, which may further violate the privacy of the target:

> *"... where to begin! She was saying such sexual and aggressive things, I've never experienced her talking dirty the way she was doing that night ... continuously asking for more. I haven't experienced her like this since my honeymoon ..."* (Forum B, User 126)

While many of the changes that posters observed in their target's behaviour could, in reality, be explained by other changes in the target's life, posters tended to jump straight to assuming sexual infidelity, even for benign behaviours such as the target being tired after work or spending more

time with friends. We note that few if any posters reported starting a conversation with the target on how or why their activities had changed.

The need for control of their target's devices/accounts. Prior work has reported that people in intimate relationships often share devices or accounts for communication, navigation, entertainment or convenience [47, 66]. Research also suggests that in coercive and controlling relationships, a perpetrator may demand access to a victim-survivor's devices and accounts for continuous monitoring and/or restricting their communication with others [37, 48]. This is in order to reduce the *"life space"* [63] or *"space for action"* [56] that the victim-survivor may have to perform activities that do not involve their abuser. This can be illustrated by our example below:

> *"Now all it takes for me to ask randomly to see or use her phone. If she refuses or acts weird about what I'm asking I know that she's being secretive and cheating again. That's a clear sign that someone's up to no good is refusing to let you look . . . so-called privacy breeds evil."* (Forum C, User 49)

In many of the stories in our data, we identified that the reason posters sought to perform further acts of IPS was that they had *already* been performing IPS, often without the knowledge of their target, but had recently lost access to the target's devices/accounts, and were now seeking to regain their access. In some cases, the posters' loss of access could be due to external factors, such as changes in security policies or software updates. In others, we found that perpetrators perceived their targets intentionally added new security measures to combat IPS:

> *"I just know she's added a new password to her system to stop me from getting access to her things. All I want to do is install a keylogger and I don't think that it's too much to ask."* (Forum C, User 20)

For most posters, the fact that they were suddenly locked out from a device or account was a signal that something *"'was not right"* with their target, and warranted further action through IPS. In these stories, IPS was described as providing the ability to regain posters' control over their targets and to renew access to a target's personal information (both with and without their knowledge). We found this story type to evidence especially dangerous behaviours:

> *"I've forced her to cancel her Facebook account and I've been slowly working on blocking her other accounts to protect her from new temptations online. Didn't take much to convince her. Now I want to have a look at her email account and I'm eager to install spyware on her phone to ensure things don't slip through the cracks."* (Forum A, User 36)

In these severe cases, it was clear that the target was often already abiding by the rules that the poster had set for their behaviour. But these posters remained unsatisfied and wanted further control of their partners' online and offline activities.

4.4 What personal information do posters share about themselves and their target?

Within our focus on infidelity forums, where intimate and/or sexual relationships are discussed in length, we discovered that the overwhelming majority of stories provided detailed information about the relationship between the poster and target including marital status and living arrangements. Of the 534 stories that included personal information, all but 32 referred to the poster and target as being currently in, or recently separated from, an intimate relationship. In the other 32 stories, the poster was often interested in surveilling the affair partner (i.e., the *other woman* or *other man*). Sometimes posters described wanting to also include their target's family members (e.g., children) and friends in their attacks as a means of gaining further insight into their target's activities.

As shown in Table 3, posters often conducted their attacks in a *shared domestic environment* with their target, enabled by the close physical proximity that cohabiting individuals have to each other's

Physical spaces	Sample descriptors	Digital Focus	Functionality
Shared domestic environment	*house, home, trailer, apartment*	Laptop/desktop	browsing history, emails, online banking
Target's workplace	*work, office, company, factory*		
Target's vehicle	*car, van, truck, motor, ride*	Phone	emails, photos, call history, apps, browsing data, GPS logs, texts, voicemail, social media
Hotel	*hotel, motel, inn, spa*		
Target's route to/from work	*commute, route, drive, travel*		
Holiday destination	*hotel room, spa, rental home*	Work devices	emails, call history, GPS logs
Affair partner's home	*place, house, apartment*	Printed records	online receipts, phone records bank statements

Table 3. Examples of physical locations and digital devices and information targeted by IPS.

	A	B	C		A	B	C
Inferred gender of poster				**Relationship of poster and target**			
Female	1	31	2	Current/former intimate partners (married)	73	95	40
Male	1	32	29	Current/former intimate partners (unmarried)	1	47	23
Not specified$^{\beta}$	119	240	121	Affair partner	3	10	1
Inferred gender of target				Family member	1	1	1
Female	29	33	30	Friends	2	2	0
Male	52	120	25	Not specified	9	12	6
Not specified$^{\beta}$	40	150	77				

Table 4. The inferred genders of the posters and targets within each forum of our dataset, as well as their stated relationships. $^{\beta}$exclusion of pronouns or use of gender-neutral terms (e.g., spouse, other half, partner)

devices and possessions [65, 66]. Posters often extended their surveillance to the target's *vehicle* and their *routes to/from work*. Interestingly, a target's *workplace* was often positioned as a direct challenge to posters' uses of IPS, since it was often beyond a poster's existing sphere of surveillance, as well as being a place where the suspected affair partner also worked. Where an affair partner was identified, their home was also targeted for surveillance: posters in these situations often hoped to discover their target's activities and to gather evidence for court proceedings (e.g., divorces).

Table 3 also shows the types of information and devices targeted for IPS. In addition to surveilling text messages and social media accounts, which have been discussed in prior work [37, 67], we also found that many posters targeted printed records, such as data from a phone provider or carrier that acted as a compromise for posters who did not have physical access to a target's device. Here, the metadata generated with text messages or calls, such as timestamps and call duration, provided important personal information on their target's communication with others.

We also analyzed the gender of both the poster and their targets by identifying third-person pronouns contained within the story: *female* (she, her, herself), *male* (he, him, himself), and *neutral* (it, they, them). As shown in Table 4, only a minority of posters included their gender pronouns. However, posters did frequently imply, via pronouns, the gender of their targets. Interestingly, despite intimate partner violence being overwhelmingly experienced by women and perpetrated by men [38, 39], we were surprised to discover an over-representation of male targets in our data set than would be expected in the general population. However, we acknowledge that pronoun identification may not be an accurate way to establish gender, as many individuals intentionally maintain a gender-neutral identity (e.g., to avoid gendered harassment), choose not to disclose personal information due to privacy concerns, or present an identity online that may not match their gender identity in other spaces [3, 14]. We also acknowledge that the inclusion of our forums including Reddit where significantly more men report using the site than women [12] may also introduce a selection bias.

4.5 Why do posters share their stories?

We turn now to understanding what posters are attempting to do or achieve by posting their stories on these forums. The content and events described in the stories we analyzed ranged widely, from descriptions of stalking ex-partners by tracking their car to incidentally discovering a target's hidden email correspondences. We categorised all 556 stories into 5 distinct *story-types*. In summary, we found that stories are used to: (1) **request** information from the forum on next steps for their IPS; (2) **advise** others on how to perform IPS effectively; (3) **support** other users by sharing similar experiences; (4) **boast** to other users about their use of IPS and control of their target, and (5) **gatekeep** techniques for IPS from newer members of the forum. In many cases, stories embodied more than one of these story types at a time. We detail each type below.

To request guidance on IPS from others. Posters frequently shared their stories so that they could seek advice or guidance from other forum-goers, on topics ranging from how to navigate their difficult social situations to how to solve technical problems with their IPS tools. We identified 336 stories of this type, each of which detailed the poster's situation and their IPS efforts thus far to contextualize the kind of advice they were looking for. Advice sought included suggestions for getting around their partner's suspicions, ideas for gathering more information, and tips for how to gain additional access to their partner's personal devices and information:

> *"…my conniving b*tch of a partner swears on our children's lives that she'll never lie to me again. Well you know what women are like, and I'd rather be safe than sorry, so I just smashed her iPhone so that I can take it to 'get repaired' …any pitfalls to installing spyware, or do you have any further suggestions?"* (Forum A, User 30)

Since posters were pseudo-anonymous (i.e., used a screen name), the stories could explicitly describe their problems without fear of challenge from a close social group or their target being *"tipped off"* about their behaviour. Requests for information became more urgent when the poster had pressing questions or time-constrained situations, such as a sudden change in circumstances, non-functional spyware, or a specific window of opportunity to further investigate their target.

To advise others on ways to commit IPS. Our dataset also featured 198 stories in which posters used their narratives to provide answers and advice to others. Personal anecdotes were used as a way to report a user's own learning about their use of IPS against targets, and to directly provide useful *"tips and tricks"*. Posters often urged other users to *'keep snooping'* until they found the information they were after:

> *"Look, you won't find what you're after straight away. Continue to convince them that leaving the house is a good idea, after work drinks …that kind of thing. Then go through e-v-e-r-y-t-h-i-n-g digital: laptops, old phones she doesn't use any more, whatever you can lay your hands on. Slow, methodical snooping is best to avoid her suspecting anything, but believe me, you WILL find something juicy if you keep at it ;)"* (Forum B, User 79)

When instructions for installing spyware were provided, they were often easy to follow, and other users frequently confirmed in responses that they had followed them successfully. This suggests that the instructions provided were acted upon and occasionally changed the events of another person's story. We also discovered that some users were promoted by others as being *pros* in providing advice. These individuals gained this status through their history of providing information to others and the in-depth nature of responses to other posters' request for help:

> *"... you won't make it on your experiences and knowledge by yourself. You'll need the skills of the pros on this forum like HurtAndLonely*[1]*, RockafellaTwist, YummyKillerr, Unsong, MaxT and the many other saints on here."* (Forum A, User 76)

To support others with similar experiences. In addition to providing advice, we found that 52 stories were also posted to support other users by sharing similar experiences and/or expressing pity, sympathy, or empathy for another user. Although some stories did cross into discussing social advice on how to recover from the impact of discovering infidelity, most of these stories provided no explicit social, technical, or practical guidance on a poster's next steps:

> *"... my hubby gave me access to everything I wanted, but he was still going off with his madame because he had a Facebook account I didn't know about ... it's tragic really.* (Forum C, User 18)

Such story posts were offered as a means of joint sense-making, both of the impact of their target's perceived infidelity and their actions of IPS in response. This expression of support created, in some posters, a sense of a *"community of sufferers"*, where individuals expressed feeling less isolated and less guilty about their attempts to surveil their target:

> *"... your story sounds exactly like mine. I knew there was something going on but I had nothing to prove it. I snooped all the time, it felt amazing. Joining this website has taught me I'm not the only one and the trust is completely gone in our marriage. I won't be able to trust her ever again."* (Forum B, User 151)

To boast about their use of IPS. In 41 story posts, we found users touting the level of power and control they had over their target through their skill in applying IPS techniques. These stories often reported successful attempts at *"catching out"* a target, or claimed that they had total control over their target's digital and non-digital life. This story type frequently overlapped with the *advise* story type, which often referenced prior events where the poster had successfully used IPS against their target. However, these stories also displayed a clear and distinct sense of power over their target, often positioning the target as someone to be mocked or demeaned through the forum:

> *"I have never told my tw*t of a husband how I knew what I knew ... when he asked I laughed and told him it was none of his beeswax. It nipped it in the bud without giving away my precious source. I told him I was watching his every move."* (Forum A, User 34)

Although we cannot verify whether this user is indeed *"watching every move"* their target makes, this particular type of post suggests the capacity for coercive and controlling behaviours due to the pleasure derived from constant control of their target. Although this story type only accounted for a relatively small number of stories (41), these stories were notably never challenged by other members of the infidelity communities as being unacceptable or abusive. However, we acknowledge that some of these damaging stories may have been deleted by moderators for potentially violating the forum's terms and conditions and therefore excluded from our data-set.

To gatekeep information from new posters. The final story type that we identified was the use of 19 stories as a way of gate-keeping particular IPS resources or techniques from newer (and therefore unknown) members of the forum. Many moderators or frequent users of the forums questioned newcomers on details of their stories before other members of the forums could provide information. For example, after sharing a personal anecdote of their own, this user responded to another user who was asking for tips on gaining access to their target's smartphone:

[1]Names have been changed to preserve anonymity.

> *"You'll need to post your story here before asking for answers. It's how we know you're legitimate. As soon as you do that, there are lots of people who can help you monitor your spouse - just say the word and I'll reference them here."* (Forum B, User 110)

In these instances, we saw the emotional impact and social value inherent in a poster's story was leveraged against the capacity of the board to provide potentially helpful information. In addition, the act of gate-keeping served the joint purpose of being a story itself and also providing a reason for other people to post their stories on IPS. The frequency of gate-keeping stories varied depending on the forum's level of moderation (i.e., more moderators led to higher gate-keeping).

5 GROUNDED THEORY ON USERS OF INTIMATE PARTNER SURVEILLANCE

While the causation of violence may vary depending on a person's situation, scholars establish that some basic principles apply to a person becoming gradually accustomed to the use of harm against others [10, 41, 81]. To build on our findings of why potential perpetrators share accounts of IPS online, we used a second qualitative approach to examine how *patterns of behaviour and attitudes* towards IPS were reported to *change over time* and be influenced by *wider contextual factors*. These nuances are frequently captured outside of a conceptual lens of a story [78]:

> *"...a spouse should have a right to see everything that is theirs. It's a tough choice to make to snoop, but you need to maintain a healthy marriage ..."* (Forum A, User 6)

This post pulls on social norms and expectations about marriage and property rights that go beyond descriptions of characters or events. It provides insight into how a poster reports their belief in the acceptability of the use of IPS in the context of wider cultural factors. We chose to use a Glasserian Grounded Theory [42] approach to theory generation to describe individuals who express an interest in or report perpetrating IPS. We also performed this analysis in response to the lack of existing theories that are sufficient to explain the relationship between a person and their choice (or not) to perpetrate IPS [90]. This is in order to establish whether our work is distinct from, or supports the work of other scholars who have examined how violence might change over time in real life, such as occurring in repeating cycles [91] and having distinct phases of violence [54].

5.1 Methods

Our first round of open-coding at a line-by-line level of 556 stories produced 145 codes, including in-vivo codes (e.g., "congratulations on surviving"), descriptive codes (e.g., domestic violence), and patterned codes (e.g., social manipulation) that were inferred through grouping descriptive codes together. After coding each forum in-turn, we grouped codes that fit a common theme to produce thirty-one concepts. Our concepts were grouped once more to find *"higher order commonalities"* [90] where we identified twelve categories to represent our data. Following this process, we used axial coding to place our categories into an axial coding paradigm model [43] to identify relationships between these entities that included causal conditions, the phenomenon under study, strategies used in response to the phenomenon, and the consequences of these actions. Our final stage of selective coding determined eight categories suitable for being transformed into a theory, grounded in our data [42]. We anticipate that our grounded theory should mirror findings that we have reported in our Narrative Analysis.

5.2 Findings

We represent our grounded theory findings by a four-stage model (Figure 2) that illustrates the attitude shift in a potential perpetrator's approach to and use of IPS, as well as what they identify as consequences resulting from their actions. We describe each of the four stages in detail: *setting expectations*, *change in attitude/thinking*, *escalation* and *reflection*, and describe the six influences on

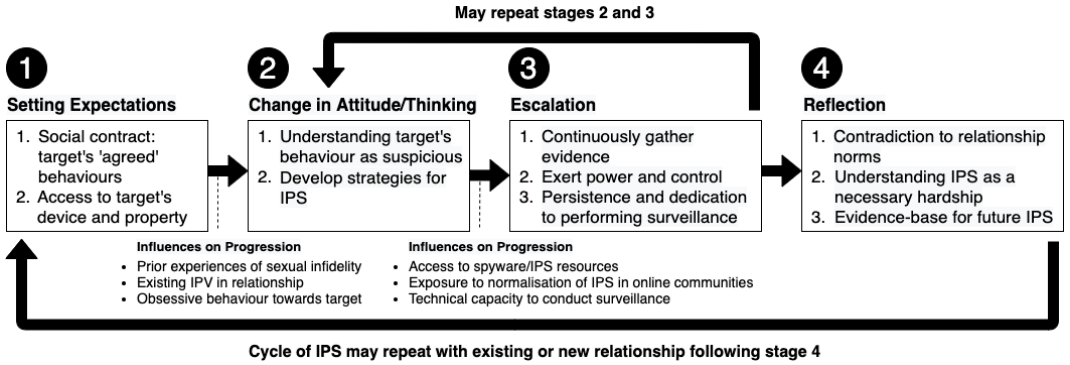

Fig. 2. Our four-stage process framework on the expectations of a poster before IPS, their change in attitude/thinking towards their target, escalation of abusive behaviours and reported reflection on the poster's use of IPS. We label influences on the progression between stages.

progression through this model. Not all posters proceeded through all stages of this model, and repetition of certain stages was common across the dataset.

In generating this theory, we identified a small number of similarities between our model and prior work examining perpetrator behaviour. For example, we recognised a closeness in Johnson's analysis of an initial *tension-building* stage of abuse where perpetrators make a plan of action to enact violence, and a similarity across the resulting rationalisation of abuse following an incident [54]. Our model does, however, deviate from Walker's *cycles of abuse* theory, which depicts supposed *Calm* (periods without immediate violence) or *Reconciliation* (apologetic actions for prior abuse) stages between abusive incidents [91]. Our findings suggest that IPS performed with digital technologies is better understood as a form of what Woodlock et al. call *digital coercive control* [95], where each incident or action is understood to consist of small and discrete acts of continuous escalation, rather than periods of violence and non-violence, as Walker and Johnson describe.

Stage 1: Setting Expectations. We found that posters had strict expectations of how their target should behave within an intimate relationship. While descriptions of relationships were commonplace on infidelity support boards, we identified many posters described restrictive beliefs of what demonstrations of trust and respect a target should perform for them. Trust was often evaluated by a poster by how well a target followed a *social contract*: implicit or explicit rules in a relationship that were primarily crafted by the poster. These rules often included a poster disclosing they expected to have open access to the target's devices, accounts, or property on request. We found statements around access to physical property to be especially commonplace when posters described being married to their target, such as our example from *Section 5*. Other rules also included posters describing that they enforced a *"no contact"* rule for a target with an affair partner. This could in some cases be used as an excuse to determine who their target could contact online or what online accounts they were permitted to create (i.e., social media). We theorised that many of these social agreements could be challenging for a target to satisfy completely. These included requests to never speaking to a (suspected) affair partner in their workplace that sometimes included bosses, being able to produce receipts for all purchases or being disallowed from visiting the houses of family or friends. We interpreted some posters in this stage to be deliberately setting their target up to fail to justify their abusive behaviours. Importantly, posters disclosed scenarios that identified their target as the reason posters were behaving abusively towards them, similar to victim-blaming narratives that have been identified in in-person perpetrator groups [82]:

> *"He's cheated in the past, so I thought I'd let him know who's the boss this time. Absolutely no contact his baby momma or his kid with her . . . I don't care what the courts say about child visitation, I know he's using that as an excuse to still talk and screw her. Let's say I've developed a healthy interest in his GPS location too to ensure he's following the rules . . . every three hours I expect a status report on where he is."* (Forum A, User 58)

We also identified three important influences on posters progressing to the next stage of IPS in our model. Posters who described prior relationships that involved actual or suspected sexual infidelity were more likely to report becoming interested in IPS as they believed that their previous experience determined that their current or new partner would also be unfaithful. Perhaps unsurprisingly, posters who described other forms of IPV towards their target (e.g., economic abuse) were also more likely to describe considering IPS. In these instances, we theorise that such posters are already accustomed to the mindset of harming their partners. Finally, we identified a key risk factor for progression for posters who described extensive interest in their target's behaviours, activities, and possessions in a manner that could be considered obsessive. These included posters describing persistent urges to know their target's locations or describing reoccurring explicit images of their target intimate with another person.

Stage 2: Change in Attitude/Thinking. Once a poster had progressed from *Stage 1*, our analyses demonstrated that there was a noticeable change in a poster's attitude and thoughts towards their target and the suitability of use of IPS that we identify as *Stage 2*. Posters began to refer to their target using degrading language (including swear words) and interpreting their actions in a negative light. Most commonly, posters reported a strong belief that their target was hiding information from them, lying about a poster's requests for answers, or actively trying to gaslight (emotionally manipulate) the poster. As such, posters then began to *understand a target's behaviour as suspicious* and began to *develop strategies for IPS*. Each unexplained response or denial of access to a target's devices was interpreted as active and deliberate concealment from the poster. At this stage, posters *firmly* believed that they could not trust their target or believe them to be honest. Regardless of whether the target was indeed concealing their activities from the poster, our analysis shows that understanding their target's actions in this way necessitates, in the eyes of the poster, a need to prove that the target is being secretive with their devices or behaviour:

> *"Her old boyfriend moved back into town, so my approach was to work with my paranoia and think about tracking everything she has, like texts and emails. I am a technical guy, and although she knows she has no idea what methods I have at my disposal, I'd like to fly under her radar entirely to get to the truth about my suspicions."* (Forum B, User 104)

At this stage, posters who may have expressed uncertainty about the use of IPS in *Stage 1* based on moral or legal grounds began to understand IPS as a potential strategy. From our analysis, we found three important determiners as to whether posters moved from *Stage 2* where posters *consider* the use of IPS, to the next stage, *Stage 3*, where they *use* it. Posters who cited online resources, such as websites for purchasing GPS trackers, cited feeling more confident to execute their planned strategies for IPS. In many cases, posters directly cited forum members who condoned the use of IPS had a direct, positive influence on their confidence to attempt attacks against their target. Finally, if a poster cited a good technical capacity to understand spyware or social engineering had an impact on whether a poster was keen to attempt IPS. Importantly, we identified cases where a poster who did not have the technical ability to install spyware to either be discouraged from progressing or seek out other non-technical methods for surveillance.

Stage 3: Escalation. Posters who progressed into *Stage 3* were using or had used IPS against their targets. In these cases, posters reported using a range of different surveillance attacks, from directly

accessing the target's smartphone to remotely monitoring their location. Every story positioned the target and their devices as things to watch carefully. We uncovered two aspirations that posters aimed to achieve in this stage: (1) the ability to *continuously gather 'evidence'* to verify suspicions of infidelity, or (2) the ability to use it to exert *power and control over their target*. For verifying suspicions of infidelity, IPS was framed as the *only* way to determine whether a target was being faithful or following the 'rules' of a social contract outlined in a relationship (*Stage 1*). If such verification could not be found through other means, posters often described a *continuous and persistent dedication to surveillance* in an attempt to discover evidence:

> *"…I don't care how long it takes to find out …I've finally found proof after years of suspicions and it feels wrong to stop searching now."* (Forum A, User 4)

The obsessive behaviour determines whether Stage 2 and 3 within our model repeats as posters did not indicate when this search for behaviour was expected to stop. For posters who were disinterested in answers to infidelity, IPS was used as an attempt to (re)gain power or exert control over their target's behaviours. As such, IPS was understood in this context to *explicitly* keep someone in line with the poster's normative expectations of a relationship, frequently even without any actual evidence of infidelity or unfaithfulness. We found the stories that used this strategy to be particularly dangerous since these posters often used their stories to advise others to adopt the same norms and tactics that they had to cause harm.

Stage 4: Reflection. For posters who stopped or paused their use of IPS, we identified a final stage, *Stage 4*, where they reflected on their actions. For the most part, posters did not recognise how their actions in perpetrating IPS against their targets violated their own described relationship norms and expectations (e.g., respect and trust). This inability to view their behaviour as in violation of these norms persisted even as posters described themselves pulling back from IPS, for example by deleting evidence of spyware. We note that only a few posters admitted to the contradiction in their actions and feeling shame about their use of IPS, with even fewer engaging in active reflection.

When posters described the pain and psychological impact of IPS within their stories, they did so only concerning the harm that *they* (instead of their target) experienced as a result of needing to surveil their target. Examples include posters describing anxiety, the inability to form new intimate relationships, and a compulsion to continuously surveil their target. In describing these impacts, posters framed IPS as a hardship that was an *essential part of the challenge of maintaining a relationship*. Many posters described how being with an intimate partner necessitated these negative impacts so that trust could be established. All told, we identified only a handful of cases where posters expressed regret for using IPS, for either their health or their targets, with a few saying they wanted to stop using IPS in their current or future relationships.

> *"This is all exhausting, continuously checking in on her…I'm fighting the urge to be one of those controlling guys that goes through her phone at night. I did it every night while she was sleeping and I had to stop myself because I was making myself crazy. I'd fantasise about putting GPS in her car. Wish I could keep her in a bubble where no guys could ever talk to her. These thoughts are crazy, but I just can't help myself."* (Forum C, User 3)

Finally, we identified that many posters reported using the experience of progressing through stages 1 to 4, such as finding evidence of an instance of infidelity through IPS, as forming the basis of a new social contract for the same or a new intimate relationship. In these cases, we identified that the process of IPS restarted.

6 DISCUSSION

Our analyses provide an in-depth view of how users of infidelity forums report using or being interested in IPS. At a high level, we found that posters' narratives concerning an intimate partner's actual or perceived infidelity (1) were used as a mechanism to convey interest in and reports of IPS, and (2) provided a platform for sharing advice and support to encourage others to continue or escalate their IPS. We also found that (3) these stories possessed common justifications for IPS, patterns of events, and reasons for disclosure to online communities. Finally, (4) the stories provided the basis for a four-stage model for the progression of IPS, from concept to execution. We now contextualize our findings in the existing literature on IPV and IPS and discuss implications for the design of interventions that challenge abusive behaviours in-person and online.

Learning from accounts of IPS online. Our work highlights how online communities not only provide ample resources for the perpetration of IPS but also present a space for potential perpetrators of IPS to seek validation and self-understanding of their abuse via narrative storytelling. As our findings demonstrate, users who share narrative accounts include people expressing curiosity towards IPS, people making active plans to commit IPS, and people who report having surveilled a partner. Such a large cross-section of different people at various stages of attitudes towards IPS (*Figure 2*) may not be accessible to researchers under normal circumstances. Either self-identification or state-identification of perpetration of harm may lead an individual to partake in self-censorship or a refusal to verbally disclose the extent of their abuse or their attitudes towards their behaviour out of concern for receiving a larger penalty for their behaviour [28, 50, 92]. Collation of these accounts in itself responds to the largest challenge in developing an accurate mental model of individuals who commit IPS: recruiting such participants in-person often leads to non-engagement, reluctance to participate, or an expression of ambivalence towards the topic of violence as a means of avoiding responsibility for their behaviour [13, 50]. Such challenges do not exist in the same way for investigation of online spaces, where posters willingly go into great detail about IPS.

While we were anticipating posters to present themselves in a positive light when partaking in immoral or ethically dubious activities for surveillance [65], we were surprised at the extent, detail and sophistication of poster's efforts to justify their behaviours to others (and potentially themselves) via narrative accounts of IPS. In many ways, this approach not only permits us to learn more about how individuals behave outside the bounds of in-person research but also suggests that online forums could provide new channels for examining this range of people from afar.

An important area of future research is to validate and verify the theoretical model presented in this work by eliciting firsthand accounts from perpetrators of IPS outside of the online spaces we scrutinise in this study. We are interested in investigating whether our conceptual model is a comprehensive *description* of the ways that potential perpetrators describe their IPS online, and could be used as a *prescriptive* model for predicting future abusive behaviours. Such testing of this model should be performed within safety-focused environments, such as perpetrator intervention programs, where perpetrators are already engaging with trained professionals (e.g. batterers intervention programs [82]). However, we acknowledge the challenge posed by the fact that stories often change in their *retelling*. If the story posts on our forums were the first time these users disclosed their accounts, they may include details or descriptions that are excluded from in-person disclosures. Testing our theory will be challenging; on the one hand, we want to reveal details that match our findings of the justifications used and the processes described. Yet, on the other hand, we acknowledge there may be details that would be explicitly excluded from an in-person disclosure.

Designing safe interventions. Our analyses show how theories, causes, and explanations can be (and are) reused by perpetrators on infidelity forums to explain, excuse, justify, or perpetuate

violence, and even provide patterns for others to follow. In contrast to many stereotypical representations of violence, which create images of a sudden and violent explosion of aggression [27], our mapping of narrative pathways in Figure 1 and our four-stage process model in Figure 2 identify that IPS is a calculated and methodical activity for many posters. This model suggests that there are clear and identifiable points for a poster to be challenged on the unacceptability of their behaviour—when it is deemed safe to do so—before such harm escalates for current targets, or repeats for future ones.

A potential starting point for intervening may be found in the locus of our research focus itself: the power of narrative. While we saw many users enabling posters to continue or intensify their IPS, a small subset reflectively questioned the motivations of the poster towards their target as described in their stories — an approach that Tseng et al. identifies as *de-escalation* [89]. In our cases, respondents questioned the motives of a poster to perform IPS on a target and suggested reflective approaches to consider the hypocrisy of covertly hiding their surveillance from a target because they believe their target is hiding something from them. This is an interesting use of a common deescalation strategy, currently taught in in-person groups [74], that requires being placed in the shoes of the target to increase empathy: perspective-taking. We foresee an intervention that could consist of trained professionals asking posters whether they would follow a strict social contract as described in stage one of Figure 2. By identifying inconsistencies in their way of thinking before IPS has occurred, it might be possible to deter a potential perpetrator from obsessively trying to prove that the target is behaving suspiciously. For cases where IPS is currently happening or has happened, we might be able to leverage some posters' descriptions of pain and psychological impact to question whether these actions are useful or healthy to the poster.

There remains a challenge with how to intervene with people who *visit* rather than actively participate in sharing their stories on these forums, as they may also be looking for ways to execute these activities. As we described prior, many visitors to the sites posted questions concerning posters' emotional well-being and advice for navigating complex challenges in their relationships. However, being exposed to an environment where IPS is normalised and actively encouraged was identified as a serious influence on progression from considering IPS to performing it (Figure 2). Search engines have attempted to deploy technical interventions by displaying a warning message before search terms about the legal and moral implications of viewing and possessing particular material (e.g., images of child abuse). Posters described their actions in a variety of ways, yet in nearly all instances they minimised the harm of their actions by describing their actions as 'tracking' or 'watching'. Search engines might also display warnings of the legal consequences of surveilling a partner to potentially deter such searches.

Making safer spaces online. Under normal circumstances, disclosure of the intent to cause harm to others can be highly destructive for online communities [17]. However, within the public—albeit niche—communities we examined, these behaviours were not only common, but they were also condoned and sometimes even encouraged. Our findings are concerning not only for victim-survivors and IPV support organisations, but also for other emotionally vulnerable users who may find themselves susceptible to the influence of charismatic and supportive 'pro' users, or other forum visitors who actively promote and even celebrate harmful and abusive actions within intimate relationships.

While it may be tempting to challenge users directly about the unacceptability of their behaviour (as is customary in in-person interventions [74]), this would neither be safe or sensible to do online due to the risk of escalating abuse of current or future targets. There is both an ethical and moral challenge in leaving communities 'to their own devices' without implicitly condoning such disclosures from a research perspective. However, extreme care needs to be taken when

considering potential interventions [16, 73]. Existing approaches of equipping moderators or active members with additional permissions to remove harmful content may be ineffective here since, in these communities, moderators often reinforce and encourage such behaviour. Conversely, simply shutting down online spaces that promote harmful behaviour have been met with mixed results, since pushing communities to the periphery of the Internet may make any interventions increasingly difficult to implement. Even simply preventing users from finding spyware for use in IPS may have limited success, as many users expressed a drive to control and coerce targets that extended beyond a reliance on a particular tool. Rather, it was a mindset that consistently moved the goalposts of the burden of proof for targets, as we annotate in our four-stage process model.

Given these considerations, anti-IPS advocates concerned about the role of online spaces in perpetuating abuse might look to the literature on violence prevention strategies with other harmful groups online, such as alt-right groups. Such communities may be comparable as they have been identified as being moderately technically sophisticated and explicitly target individuals at a vulnerable stage of development [30]. In these spaces, it is common to extract checklists and classifiers for harmful or abusive content from accounts verbatim, to inform moderation models for websites that may distribute this content to a wider audience such as social media [40, 58]. Tseng et al. [89] showed that simple keyword-based searches were likely insufficient for detecting IPS-relevant conversations, and laid out an agenda for more sophisticated natural language processing (NLP) methods that might take advantage of more complex criteria for what defines an IPS-relevant conversation. Our findings, such as the justifications used and the change in attitudes towards IPS, could directly inform these models, ensuring that coercive and controlling behaviour does not go undetected, unchallenged or free to permeate across the Internet.

7 CONCLUSION

This paper presents qualitative analyses of 556 posts from three publicly-accessible infidelity support forums in which users reported narrative accounts of using IPS against their targets. We found that sexual infidelity within an intimate relationship was used as a means of excusing abusive behaviours. We identified that posters' stories followed common narrative pathways and used a set of common actions, events, and themes that we list in this work. Within these accounts, we identified a list of 21 justifications that posters used to legitimise their control and harm of others. We supplement these findings with a conceptual framework of how posters make sense of their use of IPS over time in reporting to this community. Our findings raise interesting questions as to how this data-set could be used to inform professional approaches to perpetrators online, how we could validate our conceptual model outside of online spaces and ideas for intervening safely.

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REFERENCES

[1] H. Porter Abbott. 2008. *The Cambridge Introduction to Narrative* (2nd edition ed.). Cambridge University Press, Cambridge; New York.

[2] John Louis Achterbosch and Celeste Michelle Condit. 1985. Homo Narrans Re-constructing Narrative Theory: A Functional Perspective Journal of Communication (pre-1986); Fall 1985; 35, 4; ABI/INFORM

Global pg. 90. *Journal of Communication (pre-1986);* 35, 4 (1985), 90. https://olympictest.bc.edu/res/gssw-research-home/funding/proposal-development/_jcr_content/content/download_44/file.res/Lucaites,%20'Re-constructing%20Narrative%20Theory%20a%20Functional%20Perspective'.pdf

[3] Alessandro Acquisti and Ralph Gross. 2006. Imagined communities: Awareness, information sharing, and privacy on the Facebook. In *International Workshop on Privacy Enhancing Technologies*. Springer Berlin Heidelberg, Cambridge, UK, 36–58. https://doi.org/10.1007/11957454_3

[4] Alexa. 2020. Alexa: Top 500 websites. https://www.alexa.com/topsites

[5] Cassandra Alexopoulos, Elisabeth Timmermans, and Jenna McNallie. 2020. Swiping more, committing less: Unraveling the links among dating app use, dating app success, and intention to commit infidelity. *Computers in Human Behavior* 102 (Jan. 2020), 172–180. https://doi.org/10.1016/j.chb.2019.08.009

[6] Mike Allen. 2017. Narrative Analysis. In *The SAGE Encyclopedia of Communication Research Methods* (2nd edition ed.), Mike Allen (Ed.). SAGE Publications, Inc, California. https://doi.org/10.4135/9781483381411.n368

[7] Steven Arnocky, Shafik Sunderani, Wendy Gomes, and Tracy Vaillancourt. 2015. Anticipated partner infidelity and men's intimate partner violence: The mediating role of anxiety. *Evolutionary Behavioral Sciences* 9, 3 (2015), 186–196. https://doi.org/10.1037/ebs0000021

[8] Julia C. Babcock, Daniela M. Costa, Charles E. Green, and Christopher I. Eckhardt. 2004. What situations induce intimate partner violence? A reliability and validity study of the Proximal Antecedents to Violent Episodes (PAVE) scale. *Journal of family psychology: JFP: journal of the Division of Family Psychology of the American Psychological Association (Division 43)* 18, 3 (Sept. 2004), 433–442. https://doi.org/10.1037/0893-3200.18.3.433

[9] Mieke Bal. 2009. *Narratology: Introduction to the Theory of Narrative* (3rd revised edition edition ed.). University of Toronto Press, Toronto.

[10] Albert Bandura. 1978. Social Learning Theory of Aggression. *Journal of Communication* 28, 3 (1978), 12–29. https://doi.org/10.1111/j.1460-2466.1978.tb01621.x _eprint: https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1460-2466.1978.tb01621.x.

[11] Monica J. Barratt. 2011. Discussing illicit drugs in public internet forums: visibility, stigma, and pseudonymity. In *Proceedings of the 5th International Conference on Communities and Technologies (C&T '11)*. Association for Computing Machinery, Brisbane, Australia, 159–168. https://doi.org/10.1145/2103354.2103376

[12] Michael Barthel, Galen Stocking, Jess Holcomb, and Amy Mitchell. 2016. Reddit news users more likely to be male, young and digital in their news preferences. https://www.journalism.org/2016/02/25/reddit-news-users-more-likely-to-be-male-young-and-digital-in-their-news-preferences/ Library Catalog: www.journalism.org Section: Publications.

[13] Rosanna Bellini, Jay Rainey, Andrew Garbett, and Pamela Briggs. 2019. Vocalising Violence: Using Violent Mens' Voices for Service Delivery and Feedback. In *Proceedings of the 9th International Conference on Communities & Technologies - Transforming Communities (C&T '19)*. ACM, New York, NY, USA, 210–217. https://doi.org/10.1145/3328320.3328405 event-place: Vienna, Austria.

[14] Amy Bruckman. 1996. Gender swapping on the Internet. In *High Noon on the Electronic Frontier: Conceptual Issues in Cyberspace* (2nd edition ed.), Peter Ludlow (Ed.). A Bradford Book, Cambridge, Mass.

[15] Tara Capel, Jennyfer Lawrence Taylor, and Dhaval Vyas. 2016. Using Self-reported Experiences to Explore the Issues of Women in Crisis Situations. In *Proceedings of the 28th Australian Conference on Computer-Human Interaction (OzCHI '16)*. ACM, New York, NY, USA, 483–488. https://doi.org/10.1145/3010915.3010962

[16] Stevie Chancellor, Andrea Hu, and Munmun De Choudhury. 2018. Norms Matter: Contrasting Social Support Around Behavior Change in Online Weight Loss Communities. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems (CHI '18)*. Association for Computing Machinery, Montreal QC, Canada, 1–14. https://doi.org/10.1145/3173574.3174240

[17] Eshwar Chandrasekharan, Umashanthi Pavalanathan, Anirudh Srinivasan, Adam Glynn, Jacob Eisenstein, and Eric Gilbert. 2017. You Can't Stay Here: The Efficacy of Reddit's 2015 Ban Examined Through Hate Speech. *Proceedings of the ACM on Human-Computer Interaction* 1, CSCW (Dec. 2017), 31:1–31:22. https://doi.org/10.1145/3134666

[18] Seymour Benjamin Chatman. 1980. *Story and Discourse: Narrative Structure in Fiction and Film* (new edition ed.). Cornell University Press, Cornell, New York. Google-Books-ID: ewrOp9uPjYUC.

[19] Rahul Chatterjee, Periwinkle Doerfler, Hadas Orgad, Sam Havron, Jackeline Palmer, Diana Freed, Karen Levy, Nicola Dell, Damon McCoy, and Thomas Ristenpart. 2018. The Spyware Used in Intimate Partner Violence. In *2018 IEEE Symposium on Security and Privacy (SP)*. IEEE Computer Society, San Francisco, CA, 441–458. https://doi.org/10.1109/SP.2018.00061 ISSN: 2375-1207.

[20] Chayn. 2020. Do It Yourself Online Safety Guide - you don't have to be offline to stay safe. https://chayn.co/safety/ Library Catalog: chayn.co.

[21] Rachel Clarke. 2015. *Artful Social Engagement: Long-term Interaction Design within an International Women's Community*. Ph.D. Dissertation. Newcastle University.

[22] Rachel Clarke, Peter Wright, and John McCarthy. 2012. Sharing Narrative and Experience: Digital Stories and Portraits at a Women's Centre. In *CHI '12 Extended Abstracts on Human Factors in Computing Systems (CHI EA '12)*. ACM, New York, NY, USA, 1505–1510. https://doi.org/10.1145/2212776.2223663

[23] Amy A. Conroy. 2014. Marital Infidelity and Intimate Partner Violence in Rural Malawi: A Dyadic Investigation. *Archives of sexual behavior* 43, 7 (Oct. 2014), 1303–1314. https://doi.org/10.1007/s10508-014-0306-2

[24] Jaclyn D. Cravens, Kaitlin R. Leckie, and Jason B. Whiting. 2013. Facebook Infidelity: When Poking Becomes Problematic. *Contemporary Family Therapy* 35, 1 (March 2013), 74–90. https://doi.org/10.1007/s10591-012-9231-5

[25] Jill P. Dimond, Michaelanne Dye, Daphne Larose, and Amy S. Bruckman. 2013. Hollaback!: The Role of Storytelling Online in a Social Movement Organization. In *Proceedings of the 2013 Conference on Computer Supported Cooperative Work (CSCW '13)*. ACM, New York, NY, USA, 477–490. https://doi.org/10.1145/2441776.2441831

[26] Jill P. Dimond, Casey Fiesler, and Amy S. Bruckman. 2011. Domestic violence and information communication technologies. *Interacting with Computers* 23, 5 (Sept. 2011), 413–421. https://doi.org/10.1016/j.intcom.2011.04.006 Conference Name: Interacting with Computers.

[27] Rebecca Emerson Dobash, Russell P. Dobash, Kate Cavanagh, and Ruth Lewis. 1999. *Changing Violent Men*. SAGE Publications, London, UK. Google-Books-ID: JTzEr2OXgFQC.

[28] Julia Downes, Liz Kelly, and Nicole Westmarland. 2019. 'It's a work in progress': men's accounts of gender and change in their use of coercive control. *Journal of Gender-Based Violence* 3, 3 (Oct. 2019), 267–282(16). https://doi.org/10.1332/239868019X15627570242850

[29] Claire Burke Draucker and Donna S. Martsolf. 2010. The Role of Electronic Communication Technology in Adolescent Dating Violence. *Journal of Child and Adolescent Psychiatric Nursing* 23, 3 (2010), 133–142. https://doi.org/10.1111/j.1744-6171.2010.00235.x

[30] Julia Ebner. 2020. *Going Dark: The Secret Social Lives of Extremists*. Bloomsbury Publishing, London.

[31] Naomi Ellemers, Russell Spears, and Bertjan Doosje. 2002. Self and Social Identity. *Annual Review of Psychology* 53, 1 (2002), 161–186. https://doi.org/10.1146/annurev.psych.53.100901.135228

[32] Thomas Erickson. 1995. Notes on design practice: stories and prototypes as catalysts for communication. In *Scenario-based design: envisioning work and technology in system development*. John Wiley & Sons, Inc., USA, 37–58.

[33] Thomas Erickson. 1996. Design as storytelling. https://doi.org/10.1145/234813.234817

[34] Syd Field. 2005. *Screenplay: Foundations Of Screenwriting*. Delta, New York, N.Y.

[35] Cynthia Fraser, Erica Olsen, Kaofeng Lee, Cindy Southworth, and Sarah Tucker. 2010. The New Age of Stalking: Technological Implications for Stalking. *Juvenile and Family Court Journal* 61, 4 (2010), 39–55. https://doi.org/10.1111/j.1755-6988.2010.01051.x _eprint: https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1755-6988.2010.01051.x.

[36] Diana Freed, Sam Havron, Emily Tseng, Andrea Gallardo, Rahul Chatterjee, Thomas Ristenpart, and Nicola Dell. 2019. "Is My Phone Hacked?" Analyzing Clinical Computer Security Interventions with Survivors of Intimate Partner Violence. *Proc. ACM Hum.-Comput. Interact.* 3, CSCW (Nov. 2019), 202:1–202:24. https://doi.org/10.1145/3359304

[37] Diana Freed, Jackeline Palmer, Diana Minchala, Karen Levy, Thomas Ristenpart, and Nicola Dell. 2018. "A Stalker's Paradise": How Intimate Partner Abusers Exploit Technology. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems (CHI '18)*. ACM, New York, NY, USA, 667:1–667:13. https://doi.org/10.1145/3173574.3174241

[38] Claudia Garcia-Moreno. 2013. *Global and regional estimates of violence against women: Prevalence and health effects of intimate partner violence and non-partner sexual violence*. Technical Report. World Health Organization, Department of Reproductive Health and Research. 51 pages. https://www.who.int/reproductivehealth/publications/violence/9789241564625/en/

[39] Claudia Garcia-Moreno, Henrica AFM Jansen, Mary Ellsberg, Lori Heise, and Charlotte H Watts. 2006. Prevalence of intimate partner violence: findings from the WHO multi-country study on women's health and domestic violence. *The Lancet* 368, 9543 (Oct. 2006), 1260–1269. https://doi.org/10.1016/S0140-6736(06)69523-8

[40] Anna Gibson. 2019. Free Speech and Safe Spaces: How Moderation Policies Shape Online Discussion Spaces. *Social Media + Society* 5, 1 (Jan. 2019), 2056305119832588. https://doi.org/10.1177/2056305119832588 Publisher: SAGE Publications Ltd.

[41] Diana Gil-González, Carmen Vives-Cases, María Teresa Ruiz, Mercedes Carrasco-Portiño, and Carlos Álvarez Dardet. 2008. Childhood experiences of violence in perpetrators as a risk factor of intimate partner violence: a systematic review. *Journal of Public Health* 30, 1 (March 2008), 14–22. https://doi.org/10.1093/pubmed/fdm071 Publisher: Oxford Academic.

[42] Barney Glaser and Anselm Strauss. 1999. *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Routledge, New Brunswick.

[43] Barney G. Glaser. 1965. The Constant Comparative Method of Qualitative Analysis. *Social Problems* 12, 4 (1965), 436–445. https://doi.org/10.2307/798843

[44] Barney G. Glaser. 1978. *Theoretical Sensitivity: Advances in the Methodology of Grounded Theory* (1st edition ed.). The Sociology Press, California, USA.

[45] Greg Guest, Kathleen MacQueen, and Emily Namey. 2012. *Applied Thematic Analysis.* SAGE Publications, Inc., 2455 Teller Road, Thousand Oaks California 91320 United States. https://doi.org/10.4135/9781483384436

[46] J. Halverson, S. Corman, and H. L. Goodall. 2011. *Master Narratives of Islamist Extremism.* Palgrave Macmillan US, New York, N.Y. https://doi.org/10.1007/978-0-230-11723-5

[47] Alina Hang, Emanuel von Zezschwitz, Alexander De Luca, and Heinrich Hussmann. 2012. Too much information! user attitudes towards smartphone sharing. In *Proceedings of the 7th Nordic Conference on Human-Computer Interaction: Making Sense Through Design (NordiCHI '12).* Association for Computing Machinery, Copenhagen, Denmark, 284–287. https://doi.org/10.1145/2399016.2399061

[48] Bridget A. Harris and Delanie Woodlock. 2019. Digital Coercive Control: Insights From Two Landmark Domestic Violence Studies. *The British Journal of Criminology* 59, 3 (April 2019), 530–550. https://doi.org/10.1093/bjc/azy052 Publisher: Oxford Academic.

[49] Sam Havron, Diana Freed, Rahul Chatterjee, Damon McCoy, Nicola Dell, and Thomas Ristenpart. 2019. Clinical Computer Security for Victims of Intimate Partner Violence. In *28th USENIX Security Symposium (USENIX Security 19).* USENIX Association, Santa Clara, CA, 105–122. https://www.usenix.org/conference/usenixsecurity19/presentation/havron

[50] Jeff Hearn. 1998. *The Violences of Men: How Men Talk About and How Agencies Respond to Men's Violence to Women* (1st edition ed.). SAGE, London, UK. Google-Books-ID: hjK8VLfOUPoC.

[51] David Herman. 2004. *Story Logic: Problems and Possibilities of Narrative.* University of Nebraska Press, Lincoln, Neb.

[52] Karri A. Holley and Julia Colyar. 2009. Rethinking Texts: Narrative and the Construction of Qualitative Research. *Educational Researcher* 9 (Dec. 2009), 0–244. https://doi.org/10.3102/0013189X09351979 Publisher: SAGE PublicationsSage CA: Los Angeles, CA.

[53] Andrea Hu, Stevie Chancellor, and Munmun De Choudhury. 2019. Characterizing Homelessness Discourse on Social Media. In *Extended Abstracts of the 2019 CHI Conference on Human Factors in Computing Systems (CHI EA '19).* Association for Computing Machinery, Glasgow, Scotland Uk, 1–6. https://doi.org/10.1145/3290607.3313057

[54] Scott Allen Johnson. 2006. *Physical Abusers and Sexual Offenders: Forensic and Clinical Strategies.* CRC Press. Google-Books-ID: mmHLBQAAQBAJ.

[55] Farnaz Kaighobadi, Todd K. Shackelford, Danielle Popp, Ryan M. Moyer, Vincent M. Bates, and James R. Liddle. 2009. Perceived risk of female infidelity moderates the relationship between men's personality and partner-directed violence. *Journal of Research in Personality* 43, 6 (Dec. 2009), 1033–1039. https://doi.org/10.1016/j.jrp.2009.08.001

[56] Liz Kelly. 2003. The Wrong Debate: Reflections on Why Force Is Not the Key Issue with Respect to Trafficking in Women for Sexual Exploitation. *Feminist Review* 1, 73 (2003), 139–144. https://www.jstor.org/stable/1396003 Publisher: Sage Publications, Ltd.

[57] Joy Kim and Andres Monroy-Hernandez. 2016. Storia: Summarizing Social Media Content based on Narrative Theory using Crowdsourcing. In *Proceedings of the 19th ACM Conference on Computer-Supported Cooperative Work & Social Computing (CSCW '16).* Association for Computing Machinery, San Francisco, California, USA, 1018–1027. https://doi.org/10.1145/2818048.2820072

[58] Arie W. Kruglanski, Michele J. Gelfand, Jocelyn J. Bélanger, Anna Sheveland, Malkanthi Hetiarachchi, and Rohan Gunaratna. 2014. The Psychology of Radicalization and Deradicalization: How Significance Quest Impacts Violent Extremism. *Political Psychology* 35 (2014), 69–93. https://www.jstor.org/stable/43783789 Publisher: [International Society of Political Psychology, Wiley].

[59] William Labov. 1972. *Sociolinguistic Patterns* (1st edition ed.). University of Pennsylvania Press, Pennsylvania. https://books.google.co.uk/books/about/Sociolinguistic_Patterns.html?id=hD0PNMu8CfQC Google-Books-ID: hD0PNMu8CfQC.

[60] Shalini Lal, Melinda Suto, and Michael Ungar. 2012. Examining the Potential of Combining the Methods of Grounded Theory and Narrative Inquiry: A Comparative Analysis. *The Qualitative Report* 17, 21 (May 2012), 1–22. https://nsuworks.nova.edu/tqr/vol17/iss21/1

[61] Amy Lehrner and Nicole E. Allen. 2008. Social Change Movements and the Struggle Over Meaning-Making: A Case Study of Domestic Violence Narratives. *American Journal of Community Psychology* 42, 3 (Dec. 2008), 220–234. https://doi.org/10.1007/s10464-008-9199-3

[62] Roxanne Leitão. 2019. Technology-Facilitated Intimate Partner Abuse: a qualitative analysis of data from online domestic abuse forums. *Human–Computer Interaction* 0, 0 (Dec. 2019), 1–40. https://doi.org/10.1080/07370024.2019.1685883

[63] Eva Lungren. 1998. The hand that strikes and comforts: gender construction and the tension between body and symbol. In *Rethinking Violence Against Women* (r. emerson dobash & russell p. dobash ed.). Sage, London, 169–198. http://sk.sagepub.com/books/rethinking-violence-against-women/n7.xml

[64] Jill C. Manning. 2006. The Impact of Internet Pornography on Marriage and the Family: A Review of the Research. *Sexual Addiction & Compulsivity* 13, 2-3 (Sept. 2006), 131–165. https://doi.org/10.1080/10720160600870711

[65] Diogo Marques, Tiago Guerreiro, Luis Carriço, Ivan Beschastnikh, and Konstantin Beznosov. 2019. Vulnerability & Blame: Making Sense of Unauthorized Access to Smartphones. In *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems (CHI '19)*. ACM, New York, NY, USA, 589:1–589:13. https://doi.org/10.1145/3290605.3300819 event-place: Glasgow, Scotland Uk.

[66] Tara Matthews, Kerwell Liao, Anna Turner, Marianne Berkovich, Robert Reeder, and Sunny Consolvo. 2016. "She'll just grab any device that's closer": A Study of Everyday Device & Account Sharing in Households. In *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems (CHI '16)*. Association for Computing Machinery, San Jose, California, USA, 5921–5932. https://doi.org/10.1145/2858036.2858051

[67] Tara Matthews, Kathleen O'Leary, Anna Turner, Manya Sleeper, Jill Palzkill Woelfer, Martin Shelton, Cori Manthorne, Elizabeth F. Churchill, and Sunny Consolvo. 2017. Stories from Survivors: Privacy & Security Practices when Coping with Intimate Partner Abuse. In *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems (CHI '17)*. ACM, New York, NY, USA, 2189–2201. https://doi.org/10.1145/3025453.3025875

[68] Lynn McAlpine. 2016. Why might you use narrative methodology? A story about narrative. *Eesti Haridusteaduste Ajakiri. Estonian Journal of Education* 4, 1 (April 2016), 32–57. https://doi.org/10.12697/eha.2016.4.1.02b Number: 1.

[69] Jennifer McCleary-Sills, Sophie Namy, Joyce Nyoni, Datius Rweyemamu, Adrophina Salvatory, and Ester Steven. 2016. Stigma, shame and women's limited agency in help-seeking for intimate partner violence. *Global Public Health* 11, 1-2 (Feb. 2016), 224–235. https://doi.org/10.1080/17441692.2015.1047391 Publisher: Taylor & Francis _eprint: https://doi.org/10.1080/17441692.2015.1047391.

[70] Lydia Michie, Madeline Balaam, John McCarthy, Timur Osadchiy, and Kellie Morrissey. 2018. From Her Story, to Our Story: Digital Storytelling as Public Engagement around Abortion Rights Advocacy in Ireland. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems (CHI '18)*. Association for Computing Machinery, Montreal QC, Canada, 1–15. https://doi.org/10.1145/3173574.3173931

[71] Julianna M. Nemeth, Amy E. Bonomi, Meghan A. Lee, and Jennifer M. Ludwin. 2012. Sexual Infidelity as Trigger for Intimate Partner Violence. *Journal of Women's Health* 21, 9 (June 2012), 942–949. https://doi.org/10.1089/jwh.2011.3328

[72] Simon Parkin, Trupti Patel, Isabel Lopez-Neira, and Leonie Tanczer. 2019. Usability analysis of shared device ecosystem security: informing support for survivors of IoT-facilitated tech-abuse. In *Proceedings of the New Security Paradigms Workshop (NSPW '19)*. Association for Computing Machinery, San Carlos, Costa Rica, 1–15. https://doi.org/10.1145/3368860.3368861

[73] Jessica Pater and Elizabeth Mynatt. 2017. Defining Digital Self-Harm. In *Proceedings of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing (CSCW '17)*. Association for Computing Machinery, Portland, Oregon, USA, 1501–1513. https://doi.org/10.1145/2998181.2998224

[74] Ellen Pence and Michael Paymar. 1993. *Education Groups for Men Who Batter: The Duluth Model*. Springer Publishing Company, New York, N.Y. Google-Books-ID: tJ189FTdO38C.

[75] Louise F. Pendry and Jessica Salvatore. 2015. Individual and social benefits of online discussion forums. *Computers in Human Behavior* 50 (Sept. 2015), 211–220. https://doi.org/10.1016/j.chb.2015.03.067

[76] Olivia Petter. 2017. These are the hidden signs your partner is cheating. http://www.independent.co.uk/life-style/love-sex/cheating-signs-partner-boyfriend-girlfriend-relationship-infidelity-a8072006.html Library Catalog: www.independent.co.uk Section: Love & Sex.

[77] Stephen A. Rains, Emily B. Peterson, and Kevin B. Wright. 2015. Communicating Social Support in Computer-mediated Contexts: A Meta-analytic Review of Content Analyses Examining Support Messages Shared Online among Individuals Coping with Illness. *Communication Monographs* 82, 4 (Oct. 2015), 403–430. https://doi.org/10.1080/03637751.2015.1019530

[78] Harry T. Reis and Charles M. Judd (Eds.). 2000. *Handbook of Research Methods in Social and Personality Psychology* (1 edition ed.). Cambridge University Press, Cambridge.

[79] Catherine Kohler Riessman. 1993. *Narrative Analysis*. SAGE, London, UK. Google-Books-ID: 9ffAwoYi7E0C.

[80] Catherine Kohler Riessman. 2007. *Narrative Methods for the Human Sciences* (first edition ed.). SAGE Publications, Inc, Los Angeles.

[81] David S. Riggs, Marie B. Caulfield, and Amy E. Street. 2000. Risk for domestic violence: Factors associated with perpetration and victimization. *Journal of Clinical Psychology* 56, 10 (2000), 1289–1316. https://doi.org/10.1002/1097-4679(200010)56:10<1289::AID-JCLP4>3.0.CO;2-Z _eprint: https://onlinelibrary.wiley.com/doi/pdf/10.1002/1097-4679%28200010%2956%3A10%3C1289%3A%3AAID-JCLP4%3E3.0.CO%3B2-Z.

[82] Alan Rosenbaum and Tracii S. Kunkel. 2009. Group interventions for intimate partner violence. In *Psychological and physical aggression in couples: Causes and interventions*. American Psychological Association, Washington, DC, US, 191–210. https://doi.org/10.1037/11880-009

[83] Sanjeev P. Sahni and Swarnim Swasti. 2018. Myths Associated with Internet Infidelity: Is It a Real Problem? In *Internet Infidelity: An Interdisciplinary Insight in a Global Context*, Sanjeev P. Sahni and Garima Jain (Eds.). Springer, Singapore, 175–184. https://doi.org/10.1007/978-981-10-5412-9_11

[84] Barbara Herrnstein Smith. 1980. Narrative Versions, Narrative Theories. *Critical Inquiry* 7, 1 (1980), 213–236. www.jstor.org/stable/1343185

[85] Andrew Stickley, Olga Kislitsyna, Irina Timofeeva, and Denny Vågerö. 2008. Attitudes Toward Intimate Partner Violence Against Women in Moscow, Russia. *Journal of Family Violence* 23, 6 (Aug. 2008), 447–456. https://doi.org/10.1007/s10896-008-9170-y

[86] Lisa Sugiura, Rosemary Wiles, and Catherine Pope. 2017. Ethical challenges in online research: Public/private perceptions. *Research Ethics* 13, 3-4 (July 2017), 184–199. https://doi.org/10.1177/1747016116650720 Publisher: SAGE Publications Ltd.

[87] Jessica Taylor. 2020. *Why Women Are Blamed For Everything: Exploring the Victim Blaming of Women Subjected to Violence and Trauma.* Lulu.com, S.l.

[88] Jenna Torluemke and Christine Kim. 2020. Nearly Half of Americans Admit to 'Stalking' an Ex or Current Partner Online. https://investor.nortonlifelock.com/About/Investors/press-releases/press-release-details/2020/Nearly-Half-of-Americans-Admit-to-Stalking-an-Ex-or-Current-Partner-Online/default.aspx Library Catalog: investor.nortonlifelock.com.

[89] Emily Tseng, Rosanna Bellini, Nora McDonald, Matan Danos, Rachel Greenstadt, Damon McCoy, Nicola Dell, and Thomas Ristenpart. 2020. The Tools and Tactics Used in Intimate Partner Surveillance: An Analysis of Online Infidelity Forums. In *29th USENIX Security Symposium (USENIX Security 20)*. USENIX Association, 1893–1909.

[90] Maike Vollstedt and Sebastian Rezat. 2019. An Introduction to Grounded Theory with a Special Focus on Axial Coding and the Coding Paradigm. In *Compendium for Early Career Researchers in Mathematics Education*, Gabriele Kaiser and Norma Presmeg (Eds.). Springer International Publishing, Cham, 81–100. https://doi.org/10.1007/978-3-030-15636-7_4

[91] Lenore E. Walker. 1980. *The Battered Woman* (reprint edition ed.). HarperPerennial, New York u.a.

[92] Nicole Westmarland and Hannah Bows. 2018. *Researching Gender, Violence and Abuse: Theory, Methods, Action* (1 edition ed.). Routledge, Abingdon, Oxon ; New York, NY.

[93] Monica Therese Whitty. 2003. Pushing the Wrong Buttons: Men's and Women's Attitudes toward Online and Offline Infidelity. *CyberPsychology & Behavior* 6, 6 (Dec. 2003), 569–579. https://doi.org/10.1089/109493103322725342

[94] Holly Skodol Wilson and Sally A. Hutchinson. 1991. Triangulation of Qualitative Methods: Heideggerian Hermeneutics and Grounded Theory. *Qualitative Health Research* 1, 2 (May 1991), 263–276. https://doi.org/10.1177/104973239100100206

[95] Delanie Woodlock. 2017. The Abuse of Technology in Domestic Violence and Stalking. *Violence Against Women* 23, 5 (April 2017), 584–602. https://doi.org/10.1177/1077801216646277

[96] Delanie Woodlock, Mandy McKenzie, Deborah Western, and Bridget Harris. 2019. Technology as a Weapon in Domestic Violence: Responding to Digital Coercive Control. *Australian Social Work* 0, 0 (July 2019), 1–13. https://doi.org/10.1080/0312407X.2019.1607510

[97] Kevin B. Wright and Stephen A. Rains. 2013. Weak-Tie Support Network Preference, Health-Related Stigma, and Health Outcomes in Computer-Mediated Support Groups. *Journal of Applied Communication Research* 41, 3 (Aug. 2013), 309–324. https://doi.org/10.1080/00909882.2013.792435

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