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## research article

# Configuring the digital relationship landscape: a feminist new materialist analysis of a couple relationship app

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Digital technologies play an increasing role in intimate couple relationships, prompting new approaches to better understand the contemporary digital relationship landscape. This article uses feminist new materialist assemblage thinking to explore the functioning and processes of a relationship support app, Paired. Deploying diffractive analysis, it presents three composite narratives that explore the temporality of couple relationships, relationship work and situated practices of coupledom. Composite narratives retain the emotional truth of original accounts through combined participant voices, enabling attention to be focused on the user–relationship–app assemblage. Findings suggest that routinised app notifications prompt meaningful everyday relationship maintenance behaviours. Human–technology intra-actions thus generate positive relationship health and wellbeing behaviours which may have lasting benefits. This article's contributions are therefore largely methodological and conceptual, with analysis of supplementary primary interview data ( $n=20$ ) derived from a mixed-methods evaluation, including brief longitudinal surveys over three months ( $n=440$ ) and a detailed survey ( $n=745$ ).

**Keywords** couple relationships • relationship support • relationship quality • digital intimacies • feminist new materialism • composite narratives • relationship maintenance behaviours • digital interventions • more-than-relationship quality

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## Introduction

A lasting romantic relationship is a cultural marker of successful adulthood in Western societies (Giddens, 1992). Emerging from 19th-century discourses on marriage, the ties that bind couples have continued to evolve (Langhamer, 2013) and now incorporate technological and digital intimacies (Elliott, 2022). ‘Lonely hearts’ newspaper advertisements have given way to matchmaking websites and subsequently dating apps (Bergström, 2021), which have transformed dating and relationship formation. Whereas digital dating has become a multi-billion-dollar industry, apps that focus on sustaining relationships remain relatively few and are often short-lived. Couple relationship education and support reside at the periphery of long-term relationships in both the material real-world and online and are very much the poor relation in intervention and self-service provision (Markman et al, 2022). In contrast, the need for relationship support is clear. Up to a fifth of relationships in the UK are ‘in distress’ (Sserwanja and Marjoribanks, 2016) and there are well-established links between relationship quality and the health, wellbeing and happiness of adult partners, children and families (Umberson and Thomeer, 2020).

There is then a burgeoning rich culture around digital intimacies (Elliott, 2022) and a space for technologically mediated relationship care may be a consequential progression (Gabb et al, 2023). The proliferation of evaluation and analyses of dating apps and their impacts on diverse relationships is robust; however, we contend more research is needed to understand how technologies generate new relationship practices and forms. Digital intimacies remain under-theorised in terms of how the human–digital interface shapes the interaction of all parts – individual users, the couple, and the digital technologies they use. The purpose of this article, therefore, is to propose a conceptual framework for this task that situates in concert the structuring technologies, affordances of digital relationship care, and the couple relationship. We outline the development of digital relationship support and argue for a multidimensional evaluation of these technologies. We argue for and demonstrate how feminist new materialism provides a lens through which to research and analyse digital interventions. Building on our evaluation of the relationship care app Paired, detailed in the methodology, and working with the novel concept of more-than-relationship quality (Gabb et al, 2023), we explore the *digital relationship assemblage* – individuals, the couple and a couple app. We reflect on the components and capacities of digital relationship care by exploring users’ experience of the app. This article is thus largely conceptual and methodological in content and structure, with supplementary analysis of primary data presented to aid the discussion of assemblage thinking.

## Digital relationship support and the ‘quantified relationship’

The literature on app technology and intimate relationships is dominated by research on dating apps (for example, Bumble, Match) including location-based apps (for example, Tinder, Grindr) (Ling et al, 2020). Sociological examinations of their use engage with the complexities of navigating technologically mediated dating markets in diverse settings and populations, including recent divorcees in Australia, single women and gay men in North America (Miles, 2017; Dwyer et al, 2020; Vares, 2022). While there has been some attention to the characteristics of relationships formed through dating apps (Erevik et al, 2020; Potarca, 2020) and their use alongside existing

relationships (Macapagal et al, 2016), how these apps influence relationship quality is largely unexamined. Literature that examines the impact of mobile technology on couple relationships focuses on their use in everyday contexts (for example, McCormack and Ogilvie, 2020), the affordances of messaging apps (for example, Griggio et al, 2019), and the novel ways that couples engage with technology such as the use of app-controlled lighting to wordlessly convey emotion (Morris, 2020).

Several studies have examined apps designed to support couples experiencing relationship distress, many adapted from in-person couple education interventions. These studies tend to evaluate effects over brief periods in small samples. For example, the Love Everyday app evaluated the impact of daily questions and activity prompts on US couples (n= 43) experiencing mild to moderate distress, over three weeks (Lucier-Greer et al, 2018). A Russian study compared the impact of a two-week chatbot intervention, the iCognito Relationship Programme, with self-help books (Troitskaya and Batkhina, 2022). A review of seven digital couple interventions (OurRelationship, ePREP, Hold Me Tight Online, RELATionship Evaluation, Power of Two, Couple Helping Overcome PTSD and Enhance Satisfaction and Couples Coach) concluded that although they show promise, more empirical research on their effectiveness is needed particularly as more commercially available apps become available including those intended for relationship maintenance rather than couple distress (Knopp et al, 2021).

Evaluations of digital health and wellbeing interventions largely focus on how these interventions support behavioural change. The *quantified relationship* (Danaher et al, 2018) takes this one step further. Building on the concept of the quantified self (Lupton, 2016), the quantified relationship refers to the tracking and gamification of app data on relationship behaviours. The quantified relationship consists of three interrelated phenomena: (1) intimate tracking: data generated through sexual or romantic behaviours (Lupton, 2015); (2) intimate gamification: the use of game-like incentives to change behaviour; and (3) intimate surveillance: tracking technologies used to surveil partners' romantic and sexual behaviours (Levy, 2014). Some apps, such as Kouply (now defunct), gamified relationships by assigning points for 'romantic' gestures such as gifts, foot massages or rubbish bags taken out. Partners thus competed with one another and with other couples through leaderboards and awards that could be 'cashed in' (Danaher et al, 2018). Objections to gamification approaches suggest that if relationship behaviours improve then these instrumentalised changes may be prompted by a metricised desire for higher ratings rather than relationship quality improvements. Sexual activity, for example, is reduced to numbers as these apps support and reinforce highly reductive and normative ideas of what is 'good sex' and 'good performance' over intimacy (Lupton, 2015). Furthermore, gamification may foster an exchange mentality that is detrimental to the foundations of intimate relations, and which divests romantic gestures of their meaning. By encouraging surveillance, mutual trust may be eroded and replaced with fear of being found out. In so doing, fidelity, for example, may lose its social and emotional significance (Levy, 2014).

While focusing attention on the relationship is likely to benefit the couple (Chonody and Gabb, 2019), it remains unproven whether simply using a relationship app will deliver lasting improvements (Elliot, 2022). There are, however, grounds for cautious optimism. Relationship technologies have been shown to be effective in habit formation, through cues, routines and rewards (Danaher et al, 2018). Partners' relationship maintenance behaviours improve to a greater extent with frequent

engagement with digital couple interventions (Lucier-Greer et al, 2018) and through individual and joint activities (Doss et al, 2013). Digital relationship interventions are most effective at changing partner behaviour when partners work together to select, understand, and solve a relationship problem (Doss et al, 2016).

Digital intimacies and behaviour intervention technologies have thus been subject to some degree of assessment in terms of their outcomes and effectiveness, but there is a need to refine theoretical tools that engage with the relationship–technology entanglement. Despite apps being presented by developers as the solution to diverse health and social problems, sociological analytical frameworks are rarely deployed (Lupton, 2019a). This is the underpinning motivation for this article. We focus sociological attention on the affective forces that generate and materialise app functionality because how apps work creates digital intimacies. Technology and affective outcomes cannot be disentangled. The couple–app assemblage is symbiotic. Like Elliot (2022), we seek to avoid the optimistic versus pessimistic binary debate on the role of technology in intimate relationships, and argue for a reflective, sociotechnical approach that is contextually situated in lived experience. Adopting a focus on the everyday practices of digital technology users can, we believe, enable researchers to explore the complexities of the biographical, affective, and technological dimensions that come together in human–technology engagements.

## Feminist new materialism and more-than-relationship quality

The analytic frame of this article draws on concepts and theories articulated by Karen Barad (2003; 2007), Rosi Braidotti (2006; 2013) and Donna Haraway (2007), often collectively referred to as feminist new materialism. This post-humanist perspective treats both humans and non-humans as possessing the capacity to affect or to be affected (Deleuze, 1988). In feminist new materialism, affective forces work to impel action, movement and response when humans and non-humans interact (Lupton, 2019a). This understanding of affect and agency decentres humans and opens up exploration of how *more-than-human* (Lupton, 2019b) things (for example, tools or technologies) can be social agents that make things happen (Fox, 2022). Entities, processes and positions are conjoined in assemblages that are nested, linked and inseparable (Barad, 2003). Assemblages are vital, dynamic networks that are always in the process of becoming (Braidotti, 2013): they are composed of entities that *become with* one another rather than being caused by one another (Braidotti, 2006; Barad, 2007; Haraway, 2007). Affective forces within an assemblage are constituted through the *intra-action* of the components and their capacities (Barad, 2007; 2014), shifting focus from individual entities towards the affective flow *within* assemblages (Fox and Alldred, 2013).

By making posthuman processes visible, feminist new materialism thus makes evident how couple relationship quality is generated by more than just the individuals in the couple, that is to say, it is more-than-human (Gabb et al, 2023). The relationship comprises not only the humans in it but also the activities that configure and maintain it, as well as the processes through which these become known and rendered meaningful (Schadler, 2016). This contrasts with relational conceptions of ‘the couple’ which focus on the dynamic unfolding process of transactions by which individuals derive meaning, significance and a sense of self through interpersonal interactions (Roseineil and Ketokivi, 2016). From the feminist new materialist perspective, couple

relationships are not just created by the two partners but come into being through intra-action, within ongoing differentiation processes which create and maintain the couple. This generates more-than-relationship quality (Gabb et al, 2023), a conceptual frame which engages with the affective forces of entangled couple relationship maintenance behaviours and digital technology.

## Methodology

Paired is a commercial mobile app, launched in September 2020. Designed to help couples care for and improve their relationships, it was developed with input from therapists and relationship science experts. Paired draws on empirical research on couple relationships, notably the importance of everyday relationship maintenance behaviours which carry meaning for the couple (Gabb and Fink, 2015a). Its intended users are couples at any stage in their relationship, inclusive of same- and opposite-sex couples. The initial version that was evaluated provided a daily question on a relationship-focused topic, weekly quizzes and related content that were curated by the app developers in collaboration with relationship experts. During the evaluation, there was no personalisation of content, questions or quizzes. The Paired app is intended to prompt users to have regular conversations with their partner, with signposted further information if required. Partners can link their accounts, a function that has been shown to have positive impacts on partners' relationship behaviours (Doss et al, 2016). Once linked, both partners can see each other's questions and quiz responses. The app includes elements of gamification including a 'streak' of continuous daily engagement. Empirical qualitative data in this article derive from a mixed-methods evaluation (Aicken et al, 2024), which explored the app's impact on relationship quality and its mechanisms of action. The research design, methodology and analysis were completed by the research team. Paired subscribers were invited to complete brief longitudinal surveys over three months (n=440), a 30-item survey (n=745) and in-depth interviews (n=20). Relationship quality, measured by the Multi-dimensional Quality of Relationship Scale improved with increasing duration and frequency of app use (Aicken et al, 2024). Evaluation showed that the app prompted and habituated meaningful communication between partners and there was evidence of a positive feedback loop, whereby engagement was enhanced by users' experience of benefits to their relationship. Individual interviews were conducted online by the project researcher (Tom Witney) from January to April 2021. Purposive sampling was conducted, with primary sampling characteristics of country (UK/US) and gender (operationalised as binary).<sup>1</sup>

Feminist new materialism is a research methodology as much as a conceptual framework (Gabb et al, 2023). Feminist materialist scholars thus often advance a diffractive approach to analysis which aims to resist established patterns and narratives and bring together theorising and thinking – reading data *through one another* to develop creative outcomes (Barad, 2007; 2014). Analysis is iterative, hermeneutic and synthetic, working across and between sources of data to 'focus attention away from subjects and individuals and towards the flows of affect' (Fox and Alldred, 2013: 781). Reading transcripts through each other, we focused our analytical attention on how everyday practices manifest in *telling moments* (Gabb and Fink, 2015b) as users and technologies intra-acted across the dataset (Gabb et al, 2023), situating human and technological actors in context. Moments were often ordinary and unremarkable and thus focused attention on relationships' everydayness (Daly, 2003). These fragments of experience were



typically steeped in emotion, relaying how participants experience their relationship and personhood in everyday life and through engagement with the app. Moments identified from interview data were coded into themes and we used these to develop composite narratives that serve a descriptive, analytical and ethical purpose. Composite narratives separate findings data from the individual but they do not remove contexts; rather, they foreground the specificities of experience and use these as analytical entry points into data. Biographically grounded data are presented *in articulation with each other*, as they occur in the interviews rather than as quotes in isolation. This facilitated analysis of the materiality, temporality and emotionality of couple-app intra-action.

Composite narratives have been used in sociological inquiry to preserve anonymity where participant identification is likely or would have severe consequences (Piper and Sikes, 2010; Willis, 2019). This approach has advantages in studies of families and relationships where the ethical tension between providing rich detail and maintaining anonymity is particularly acute (Gabb, 2009). We drew on Willis's (2019) proposed approach for deriving narratives with analytical rigour and transparency. Composite narratives were generated through thorough cross-checking of synergies in biographical and/or relational circumstances and the identification of recurring analytical themes. First, groups of three to four transcripts were selected based on their thematic similarities and the confluence of biographical or relational circumstances. Combining participant data this way grounds the narratives in context while ensuring individuals' anonymity. Second, composites were created from narrative elements that recurred, overlapped and reinforced each other across accounts. These elements were combined to narrate key analytic themes, producing a multifaceted distillation rather than a thinly stitched-together patchwork of fragments. Finally, paraphrasing or discussion of participant motivations and/or feelings in the narratives were based on interview data and not crafted by the researcher (Willis, 2019) thus retaining the emotional truth of the original accounts (Orbach, in Willis, 2019). We further ensured rigour and transparency through multidisciplinary team discussions, where we reviewed and agreed on the integrity and transferability of the composite narratives.

## Findings

The three composite narratives presented here each call attention to an overarching theme from our analysis: the temporality of couple relationships *over time* and *in the moment* (making 'us' time); relationship work (practising relationship work); and situated practices of coupledness (forging connections). These themes build on initial descriptive themes from the mixed-methods evaluation that focused on how the app functioned to support couples' communication, navigation of conflict and partner connection (Aicken et al, 2024). This section of the article serves a twofold analytical purpose: to illustrate the composite narrative approach and to present findings from the primary data. It demonstrates how diffractive analysis of the couple-app assemblage can generate insight into the user-relationship-app assemblage.

### Narrative one: making 'us' time<sup>2</sup>

John is a 45-year-old heterosexual man living in the UK. He has been married for 20 years and lives with his partner and their two school-age children.



The couple started using Paired during the COVID-19 pandemic. During lockdown, he and his partner were both working from home and the children accessed remote learning.<sup>3</sup> Initially, John and his partner worked together from the kitchen table while their children shared the dining room. However, John found 'living on top of each other' particularly stressful and he and his partner regularly argued. In the ongoing lockdown and homeschooling, the family settled into a routine of working in separate areas of the house during the day. John and his partner incorporated engagement with the app into this new daily routine. They tend to answer the app's daily question separately each morning, discussing their answers in the evening when the children are in bed. John looks forward to the conversations at the end of the day, which feel like special 'couple time.' Before using the app, he felt that most of their conversations were about their children. By providing the couple with a daily novel starting point for a conversation, the app has helped to broaden the things they talk about together. John has noticed that they argue less. He feels that this is partly due to the new routine, but he also describes how having time each day to talk about their relationship has helped to keep the couple 'topped up' as they navigate their new, sometimes stressful, domestic situation.

For John and his partner, using the app routinised a focus on the relationship at the beginning and end of each day. These regular reflective spaces fostered a sense of closeness through disclosing practices of intimacy (Jamieson, 2011). The assemblage of daily rituals and routines (influenced by home working and homeschooling), the couple's relationship practices, and their engagement with the app generated ordinary moments of connection (Gabb and Fink, 2015b) which positively impacted the couple's relationship quality and family life. The affective forces of these everyday relationship maintenance behaviours emerged through the intra-action of John, his partner, their family context and the app. Working with and through the user–relationship–app assemblage generated novel intimate practices (in this case, making couple time and relationship care a routine part of their daily lives) that would not exist without each element. By providing a temporal structure to their lives together via early morning initiation, individual reflection during the day, and evening discussions together, the app became inseparable from the rhythms and texture of their relationship.

Viewing the intra-action as an assemblage brings into the analytic frame broader social contexts that impinge on the relationship core. Rather than attribute changes to technology alone, it is important to engage with the specific contexts within which intra-actions occur (Elliott, 2022). For example, for John and his family COVID-19 lockdowns transformed domestic routines and reshaped family intimacies (Gunther-Bel et al, 2020; Pietromonaco and Overall, 2022), accelerating ongoing changes in parenthood and family life (Miller, 2017). There was an intensification of primary relationships, in this instance the couple and family, as connections to wider social networks were restricted through laws and guidance. John's relationship assemblage includes the digital technologies that facilitated home working and schooling, the couple relationship in the context of the gendered and generational dynamics of the family home, and the negotiated co-use of limited time and space by family members. Pandemic-associated shifts in family activities thus propelled the affective forces that

framed John's relationship during this time. The materiality and emotionality of this context were contributory factors that shaped intra-actions and were part of the more-than-relationship quality assemblage.

## Narrative two: practising relationship work<sup>4</sup>

Melissa is a 35-year-old heterosexual woman living in the US. She has been married for five years and lives with her partner, their young daughter and her teenage son from a previous relationship. She and her partner have previously accessed couples therapy but recently stopped because of the cost and time commitment. They started using the app as a way to continue working on their relationship. Melissa finds Paired helpful in starting 'low stress' conversations about their relationship because topics are prompted by the app rather than provoked by a particular event or behaviour. This is particularly important for 'tricky' subjects, such as the relationship between her partner and her wider family, which has historically led to arguments. She likes how the app provides a neutral ground for their relationship work because, although she was happy with their therapist, she felt he sometimes sided with her or her partner. Melissa enjoys the way Paired blends serious subjects with light-hearted ones, making it seem less like 'work'. She has noticed that since they have been using Paired, there is less conflict in their communication, and she feels the app has helped them to deal with conflict when it arises. She appreciates the way some daily questions prompt her and her partner to reflect on their shared history or to respond with private jokes, reminding her that 'we are together for a reason' and reinforcing their sense of connection. For Melissa, there is a disjunction between how she would like to use the app and her use in practice. Her partner often wants to discuss the daily question at the end of the day, but sometimes Melissa feels that she doesn't have the energy to have deep conversations after her day's work and making dinner.

Melissa's narrative illustrates how relationships require effortful work, including the development of positive relationship maintenance behaviours, partners' emotional literacy and regulation, and for some couples engagement with therapy (Gabb and Fink, 2015a; Ogolsky et al, 2017). Both the timing and topics of conversations prompted by the app were experienced as beneficial. By initiating engagement with difficult topics outside of crisis points, the couple's emotions were calm, and they could engage with issues in a constructive and measured way. Rather than fraught dialogue fuelled by ire and/or defensiveness (or avoidance of difficult conversations which may build resentment), these couple exchanges were framed through attentive listening, a communication skill that is promoted by the app. It thus helped the couple to manage conflict by providing regular opportunities for open communication. Opportunities to reflect on shared experiences and lighter moments encouraged the couple's sense of shared fun and consolidated togetherness. This reminded Melissa that not all relationship work is hard work (Gabb and Fink, 2015a). Despite the app supporting Melissa and her partner to develop positive communication skills, their story illustrates how emotional and domestic labour are unequally distributed on gendered lines (Jamieson, 1999). After completing the 'second shift' (Hochschild and Machung, 2003) of making dinner after

a day at work, the prospect of further (relationship) work with its associated emotional labour was sometimes too much for Melissa.

Melissa perceived the neutrality of the app positively. The intra-actions of herself, her partner, and the app facilitated constructive transformations in relationship quality. Rather than echo the affective forces generated by the Melissa-partner-therapist assemblage, she experienced the non-humanness of the app as impartial. Similarly, some users of chatbot therapy apps report their emotional detachment as a facilitating factor in user engagement, making it easier to share personal details (Elliott, 2022). The Paired app could be and was understood by some users to be functioning as a pseudo-therapist, however it was designed to create daily opportunities for dialogue not to substitute for the professionally guided conversations that constitute relationship therapy. The affective forces reside within a broader assemblage of in-app relationship support. The app may be neutral and dispassionate, but it is not inanimate. The human-technology assemblage that is generated reinforces a material sense of connection between Melissa and her partner, and between the couple and the app. Repetition (app functionality), the partners' individual capacities, and their shared commitment to the 'couple project' (Gabb and Fink, 2015a) foster more-than-relationship quality (Gabb et al, 2023). Existing simultaneously as a practical tool for relationship care and as entertainment (through games and light-hearted content), the relationship-app assemblage generates a virtuous circle of affective forces that entangle incidental moments in time and relationship longevity.

### **Narrative three: forging connections<sup>5</sup>**

Geoff is a 36-year-old bisexual man living in the UK. He has a long-distance relationship with his boyfriend who he has been dating for two years. They started using Paired as a way to stay connected while living apart. Geoff plans to relocate so the couple can live together. Using the app has prompted them to discuss topics like chores and finances that they might have otherwise avoided. Geoff feels that having these discussions before living together has pre-empted potential conflict and provided resources to help resolve these issues, better preparing the couple for cohabitation. He says that using the app is like having a relationship guide. Additionally, the app provides Geoff with visible examples of LGBTQ+ relationships. This is particularly important to him as it affirms his bisexual identity. Geoff and his partner sometimes use the app to communicate beyond the focused topics that it provides. For example, during weekends together, he often wakes first and gets up to make breakfast. When he sees the in-app notification that his partner has completed the daily question, he knows he is awake and brings in a cup of coffee. Geoff enjoys the regular nudges to complete the daily question, finding it easy to sustain his engagement with the app. If he has not received a notification that his partner has answered the question, he sometimes texts him a reminder – especially if it is a question that he is curious about. He occasionally teases his partner that he has built up a longer 'streak'.

For Geoff, the app's inclusion of LGBTQ+ relationships and diverse relationship forms and practices is crucial. Guidance and images that are tailored to, or inclusive

of, LGBTQ+ couples provide essential validation and support for Geoff and his partner. These positively reinforce the legitimacy of Geoff's relationship and sexual identity. Content engaged with the macropolitics of coupledom as a social institution (Gabb et al, 2023) helps to model and make visible relationship forms using both normative and non-normative relationship exemplars. Cultural scripts are thus done and undone in the human–technology assemblage. While the previous narrative emphasised the app's neutrality, for Geoff, its inclusivity makes it feel personal. The app educates and upskills this couple on their terms. Focused topics enabled Geoff and his partner to contemplate their relationship, and discuss moving forward together, through prompted conversations on relationship forms and practices, and practicalities such as cohabitation and shared responsibility for chores and finances. Geoff and his partner are transitioning towards the cultural milestone of cohabitation, demonstrating their commitment to each other and their relationship. Engagement with the app has thus opened up possibilities for imagined futures together and the kind of relationship dynamic they may want, bestowing symbolic and practical recognition of their commitment.

The app's gamification functions frame this couple's daily practice of question completion. The automated app prompts and reminders support their ongoing communication work and provide a daily rhythm which scaffolds their interactions, which they supplement with other communication channels such as text messaging. Geoff engages with gamification, maintaining a 'streak' which motivates him to sustain his use of the app. His partner's lower engagement does not necessarily symbolise to him a lower investment in their relationship but is a source of fond teasing. Geoff parading his achievements demonstrates and enriches the couple's 'deep knowing' (Jamieson, 2013). Geoff and his partner use the app to communicate in ways that were not envisioned by the app designers. This further embeds the app in the unique context of their relationship and gives them ownership in ways that simple personalisation and customisation could not. As in earlier narratives, conceiving the app as part of an assemblage brings into the analytic frame the agential capacities and affective forces of technology which become materialised through the human–technology intra-actions. Notifications and prompts serve as behavioural prompts. They are informed by and predicated on behavioural science and its application within the digital context, combined with relationship science and expertise on how healthy relationships function. For Geoff and his partner, the virtuous cycle of regular app engagement generates affective forces which foster and sustain the human–app assemblage.

## Discussion

We have used feminist new materialist assemblage thinking to explore the functioning of a commercially available relationship support app, Paired. Through this lens, we examined the new relationship practices, routines and spaces that are generated via the user–relationship–app assemblage, attending to the processes (and affective forces) through which novel relationship maintenance behaviours emerge. Shifting focus from individuals and their relationships with each other, feminist new materialist analysis brings into the frame the activities and entities that intra-act and create the affective forces that configure, maintain, and question these intimate relationships (Schadler, 2016). This framework may have further utility in exploring other apps through which people interact, such as in education or e-Health (for example, Janssen et al (2020)).

By using in-depth interviews, we obtained detailed accounts of ordinary moments which exemplified how participants experience their relationship, in the context of everyday life and their engagement with the app. Composite narratives (Willis, 2019) were developed from these emotion-rich ordinary moments (Gabb and Fink, 2015b). Storifying enabled us to engage with the breadth and depth of the dataset while concisely presenting recurring patterns in the data from multiple participants. In addition, working with composites avoided cherry-picking quotes that may favour more articulate voices or sensationalist accounts (Gabb and Fink, 2015b). The main drawback to their use is the burden of responsibility on researchers to generate accurate anonymised narratives from the accounts of several individuals (Willis, 2019).

Our decision to use composite narratives was a creative response to the challenge of diffractive analysis (Barad, 2007). Narratives provided us with the analytical means to engage with multidimensional data, reading together the intra-action of participants, their relationships, their engagements with the app, their life experiences, and their relationships with other people and affective forces (Fink and Gabb, 2019). They offer a more open perspective through which to investigate complex and entangled processes all at once (Schadler, 2016). Other studies have described how couples use technology to communicate in novel ways (Morris, 2020). Our analysis draws attention to how the unique contexts of participants' relationships combined with the patterns of notifications from the app and gamification features generate affective forces in novel ways, and how users in diverse relationships experienced support in different ways.

Our narratives derive from data generated with a small but diverse sample of users of one relationship support app, Paired, enabling insight into the ways that this app operates in everyday contexts. This may have transferability to other health and wellbeing apps. However, a limitation to our analysis here is that we have the account of only one partner in each couple and so cannot fully assess partner intra-action. Having data from both partners would enrich the analysis. Working with feminist new materialism has been fruitful, despite challenges, including the requirement to engage with concepts and theories developed in science and technology studies outside the materiality of sociology and relationship science. The application of feminist new materialism in the sociology of relationships provides further opportunities for confusion with conceptual *faux-amis*. For example, affective forces in feminist new materialism (relating to the means through which effects are generated) and the affective turn in family and relationships sociology (attending to the role of emotion) can be confused, when disciplinary contexts are disregarded. In this article, we have endeavoured to respect disciplinary contexts but also open up a space for dialogue and learning between disciplinary positions.

In his analysis of the increasing role of digital technologies in relationship formation and maintenance, Elliot (2022) points to its technocratic undertones. Through efficiency and optimisation, these contemporary forms of intimacy build on the belief that it is possible to improve oneself (and one's relationships) by outsourcing the management of potentially fraught or difficult decisions to digital technologies. The promise of the Paired app, to improve the quality of your relationship through simple daily interactions, appears to be an exemplar of this reduction of intimacy to process, and relationships to strategy. However, we argue that the app is more-than-human-technology. The focus of automation is to generate prompts, not to direct the ensuing interactions which engage with deeply personal and emotionally messy subjects. Relationship work is completed outside the app, not within it. The

Paired app does reflect the contemporary enchantment with technology (Lupton, 2019b) and its absorption of individual attention, but it is also designed to push users outside the app. The promise of improvement is born not from techno-optimism but from engagement with expert advice, empirical research and academic analysis. Individualised engagements with algorithmic intimacies, characterised by dating simulation games among others, demonstrate the creativity of human–machine interactions. The compositive narratives in this article illustrate the creative ways in which users engage with the app to create new intimate practices in their lived relationships. This starkly contrasts with the use of technology painted by the quantified relationship, in which apps become corrosive tools of surveillance (Levy, 2014) and relationships are reduced to metrics and scores. The generative potential of the more-than-human interaction with Paired brings into focus how routinised app notifications can prompt novel real-world relationship practices and support the development of everyday relationship behavioural maintenance behaviours that emerge through the contemporary digital intimacies landscape. As such, human–technology intra-actions can generate positive relationship health and wellbeing which may have lasting benefits.

## Conclusion

Research on apps remains under-theorised regarding the rich intra-action between design, developers, users and interface (Lupton, 2019b). Elliot (2022) argues for the need to move beyond optimistic versus pessimistic debates on the role of technology in intimate relationships, instead centring a reflective sociotechnical approach grounded in sociology. This article outlines a conceptual engagement with feminist new materialism and diffractive analysis as one avenue to address these calls. Building on the practices approach that characterises UK family sociology (Morgan, 1996) and deploying composite narratives (Willis, 2019), it has focused on the everyday relationship maintenance behaviours generated through one app. Using feminist new materialism as both a conceptual framework and methodology, it used composite narratives to retain the emotional truth of original accounts and combine participant voices, facilitating exploration of the biographical, affective and technological dimensions that coalesce in these human–technology nexus. Deploying the novel concept of more-than-relationship quality, we have demonstrated how feminist new materialist analysis can open up understandings of multidimensional contemporary digital intimacies. Routinised app notifications prompt meaningful relationship maintenance behaviours which may have lasting benefits for relationship health and wellbeing. The app–user assemblage shapes the temporality of couple relationships, supports couple relationship work, and enables situated practices of coupledness. With the ongoing growth of digital intimacies and associated transformation in how relationships are formed and maintained through apps, this mode of sociological evaluation and investigation will be increasingly valuable if we are to fully understand and make sense of the ways that technologically mediated relationships are practised in the 21st century.

## Notes

<sup>1</sup> Participant details are provided in [Appendix 1](#). Interviews used a topic guide which focused on how participants used the Paired app, how the app worked or did not work for the couples, and their use of non-app relationship support. Interviews were recorded and transcribed verbatim.



<sup>2</sup> Narrative one was created from participant interviews 5, 8, 14 and 15.

<sup>3</sup> In England, restrictions were initially imposed in March 2020. People were ordered to stay at home, leaving only for essential purposes, such as buying food or medicine. 'Non-essential' high-street and hospitality businesses were closed. These restrictions were relaxed and reimposed several times in response to infection rates, before finally being removed in July 2021.

<sup>4</sup> Narrative two was created from participant interviews 7, 13, 16 and 17.

<sup>5</sup> Narrative three was developed from participant interviews 2, 4, 11 and 18.

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## Conflicts of interest

Gabb was seconded to Paired as chief relationships officer during the study and analysis. There is no conflict of interest; the role was non-remunerated, and she retained her academic independence. The study was funded by The Open University. Paired was not involved in the analysis, interpretation, writing or decision to submit this article.

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## Appendix 1: Participant characteristics

<i>Primary sample characteristics</i>	
<b>Gender and country of residence</b>	Number
Male, US	5
Female, US	5
Male, UK	5
Female, UK	5
<i>Secondary sampling characteristics</i>	
<b>Sexuality</b>	
Heterosexual	14
LGBTQ+	6
<b>Children (aged under 18) living in household</b>	
Yes	6
No	14
<b>Cohabiting*</b>	
Yes	14
No	6
<b>Relationship duration</b>	
Less than 1 year	6
1 to 5 years	8
More than 5 years	6
<b>Total</b>	<b>20</b>

\*All married participants were cohabiting with their spouse.