

ThemTech: Digital Menstrual Tracking Practices  
Among Transgender, Non-Binary and Gender  
Diverse Users

Bachelor of Arts, Honours in Sociology

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This thesis is submitted in partial fulfilment of the requirements for the degree  
Honours in Sociology in the College of Arts and Social Sciences.

I hereby declare that, except where it is otherwise acknowledged in the text, this thesis represents my own original work. All versions of the submitted thesis (regardless of submission type) are identical.

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Dear Ms Gene Pinter,

**Protocol: 2020/288**

***"Digital menstrual tracking practices among transgender, non-binary & gender diverse people"***

I am pleased to advise you that your Human Ethics protocol submitted on the 18th of May 2020 was approved by the Chair of the ANU Humanities and Social Sciences DERC on the 21st of May 2020.

For your information:

1. Under the NHMRC/AVCC National Statement on Ethical Conduct in Human Research we are required to follow up research that we have approved. Once a year (or sooner for short projects) we shall request a brief report on any ethical issues which may have arisen during your research or whether it proceeded according to the plan outlined in the above protocol.
2. Please notify the committee of any changes to your protocol in the course of your research, and when you complete or cease working on the project.
3. Please notify the Committee immediately if any unforeseen events occur that might affect continued ethical acceptability of the research work.
4. Please advise the HREC if you receive any complaints about the research work.
5. The validity of the current approval is five years' maximum from the date shown approved, unless closed at an earlier date. For longer projects you are required to seek renewed approval from the Committee.

All the best with your research,

A handwritten signature in blue ink, appearing to read 'Gavin Whitehouse'.

**Gavin Whitehouse**

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(Seriously, though? Thank you, Celia, for being the most incredible, encouraging supervisor an undergraduate could have; thanks to my parents, Nick and Rhonda, for loving and supporting me in everything that I do; and thanks to Rose for listening to my disjointed, incoherent late-night ranting only to turn to me and say, *hey, you might be on to something here*. You all mean the world to me and I'm immeasurably lucky to have you in my life.)

## Abstract

This thesis is an evaluation of digital menstrual tracking practices among transgender, non-binary, and gender-diverse users, broadening the scope of sociotechnical studies (STS) to investigate how disaggregated populations affect the producer-consumer metric. Utilising the collective methodological framework pioneered by Frigga Haug and the West German Women's Socialist Association in the 1980s, participants were invited to "live historically" by narrativising their memories related to menstrual tracking and their transgender identity. From their stories, three key areas were identified as platforms upon which transgender users are both reinforcing and disrupting existing understandings of self-tracking. Through a deconstructionist reading of configuration, an examination of how self-tracking conflates juxtaposed identities, and an investigation into the collaborative efforts of transgender users, technology companies and medical professionals, this thesis offers an alternate understanding of the self in relation to actor-network theory.

Or, to put it narratively...

It's an unusually warm day in mid-October when I run into Ellie. We used to work together at the cinema nearby; she's moved on to a job in the private sector but I'm still there, selling ludicrously overpriced popcorn for just above minimum wage. She recognises me as I wait for coffee at one of the many cafés neatly situated between the main ANU campus and the uncharted territory of government contractors.

“Gene! How are you?”

As far as loaded questions go this year, the simplest turned out to be the hardest to answer. I’m noncommittal in my answer and she is too - *how’s it going? / oh, it’s going, you know* - and when the small talk turns uncomfortably quiet, I bring up my thesis. Through a global pandemic, record-breaking bushfires, international political instability, and unprecedented university reform, one thing has remained constant: this little document you hold in your digital hands. Granted, it’s changed form more times than Australia has had Prime Ministers in the last decade - but through all the uncertainty, ‘ThemTech: Digital Menstrual Tracking Practices Among Transgender, Non-Binary and Gender Diverse Users’ has been my North Star of 2020.

It’s also a mouthful to say, so I just tell Ellie I’m writing about self-tracking.

Except somewhere along the line I’ve forgotten that I *have* told Ellie the full extent of my research, and her eyes have light up with recognition of a conversation we must have had months ago. “Is this the thing with,” and here she pauses, glances at the obviously eavesdropping barista, lowers her already soft voice to whisper, “*menstruation?*”

In that moment I'm reminded of S, one of the wonderful participants in my study whose story you will encounter later. Their response ended up becoming the foundational piece of this thesis, raising questions I couldn't have begun to fathom when I put out my recruitment call. In their response, S writes about the connection, or perhaps lack thereof, between themselves and the sexual health clinic nurse they're discussing menstrual tracking with. *We share the experience of a menstrual cycle, they write, and what else? Over 26 days, plenty of things predictably wax and wane...it feels undeniable and also out of my control. I wonder if the sexual health clinic nurse feels the same way.*

I'm standing there, still waiting for my coffee, and realise that I'm feeling the exact same sense of inertia with Ellie. The context, of course, is wildly different – and yet we're both talking about the same thing from different angles, one cisgender and one trans. Menstruation is a fraught subject, clouded in centuries of chagrin and celebration, confusion and clarity; in another life, I would have written a thesis about the cultural representations of the menstrual cycle itself rather than the technology that surrounds it. I think, in that alternate universe where sociotechnical studies didn't feature so prominently in the development of my thinking, I would have come to a similar conclusion as I do in this thesis: menstruation, and the technologies that exist to service it, are the stages on which a thousand plays have been performed. When people talk about periods or period trackers, they speak to something that flows much deeper than blood. They speak to a whole body of social, cultural, political, environmental, technical and biomedical structures

that surround menstruation like layers upon layers of scaffolding; a living network that continues to expand, greeting each new frontier with open arms.

I don't end up saying all this to Ellie. It's not that she wouldn't understand, no - it's that it would take too long for me to explain. It would take exactly 18,069 words on 84 pages, in fact.

And besides, my coffee is ready. I have a thesis to finish.

## Chapter 1: Making Sense

Media scholar Elizabeth Freeman doesn't describe her book 'Time Binds: Queer Temporalities, Queer Histories' as a fully completed, self-contained text. "These chapters," she writes in the preface, "are nothing more than a series of thought experiments" that have "emerged in fits and starts alongside, and often in conversation with, many excellent rethinkings of temporality in the name of sexual dissonance" (2010, xxiv). Her disclaimer speaks to the seminal theory that the book presents: queer time, a deconstructionist concept that disrupts assumptions of linear existence and makes living historically a prescient reality. The book veers from post-war poetry to pornography, *Frankenstein* to Foucault, across the modern era and into an unknown and yet strangely familiar future; time and the thousand natural shocks that it is heir to are unbound.

It's in the spirit of Freeman's writing upon which I draw so much of my work that I can say, wholeheartedly, that this is not a thesis.

Instead, I want to tell you a story. Multiple stories, in truth; fifteen that have been approved by an Ethics committee, ten selected for analysis, one that doesn't require permission, and a thousand others that speak to us through algorithms and code. These stories are, at their core, questions of identity and useability, the space between people and their tools. What does it mean to quantify your unique, affective experiences in measurable chunks of data? At what point does tracking your behaviour, your practices, the very minutiae of

your body become more than a series of numbers? How do we understand ourselves through these devices, applications and records? And crucially, where do we go from here – if ‘here’ even truly exists as a fixed point in the endless spectrum of sociotechnical development and change?

To even begin broaching these questions, we must first ask something simpler: what is technology, and how is it social?

Matthewman (2011) puts it like this: “artifacts [sic] affect history, but they do not necessarily drive it, and they are never divorced from human desires, needs and passions” (9). He writes that the definition of technology is a slippery concept, tracing its roots to the Greek word ‘*techne*’, meaning art or craft; its transformation into the descriptor for all things mechanical occurred in the seventeenth century with the European Industrial Revolution (9). While basket-weaving or sculpture is still a technical process, the emphasis of the ‘technological’ has shifted towards what can be measured, counted, and reproduced. Thrift (2005) identifies that in the 21<sup>st</sup> century, the definition of technology has changed again, evolving ever-more digital and “becoming so pervasive and complex that it is beginning to take on many features of an organism” (155). What ties these seismic changes in definition, from art to mechanics to software, is the spectre of capitalism creeping ever-closer to the human body, the steady integration of industry and the self.

As the body strays closer to production, it is no surprise that the desire for quantification has reached a fever pitch. In their book *Self-Tracking*, Gina Neff and Dawn Nafus outline the use of biosensing and other tracking technologies and the intrinsic social quandaries that arise from deciding “what is worth measuring and who measures up” (2016, 7). Biosensors, “devices that indicate something about the body or the physical environment” (Nafus 2016, xiii in Roberts et al. 2019, 1), have gained special precedence in the rapid development of our digital lives through their unique relationship to health, both as a social process and a physical reality. The core function of a biosensor is its capacity to indicate a body’s performance in specific periods and across time; for example, tracking how many steps someone has taken in one day, one month, one year, and beyond. Biosensors gather immense volumes of data and allow individuals to view, reflect on, and ultimately learn from the patterns and anomalous results that become apparent. In accumulating this data, a biosensor produces images of health, snapshots of a body constantly evolving. These images, however, are not necessarily a faithful representation; Roberts et al. argue that while biosensors can provide an insight into internal processes, “no exactness, comprehensiveness or sheer volume of physiological data can exhaust the existential inexactness of health” (7). It is due to this inability to depict a wholly accurate representation of one mode of health that biosensors reflect *many* healths, ranging from normative to deviant and back again. Biosensing, like a prism that absorbs and refracts light, collects vast bodies of personal data to both reproduce existing models of health and generate emergent forms.

Self-tracking, the practice from which biosensing is born, is a phenomenon that can be traced back as far as people have observed and recorded findings on their own bodies. Crawford et al. (2015) cite conventional weight scales, which emerged in the late 19<sup>th</sup> century, as the most familiar and pervasive form of self-tracking, though its inception lay in institutionalised medicine where doctors sought to monitor and record patients' bodies (481). The weight scales entered the public sphere toward the end of the century with the invention of the 'penny scale', a device located in grocery stores and pharmacies that displayed a customer's weight on a large dial reminiscent of a grandfather clock. The penny scale became incredibly popular in the United States where people were enthralled with the device's ability to precisely reflect their weight, shifting their understanding of their own bodies "from a subjective to a numeric approach" (Czerniawski 2007, 272 in Crawford et al 2015, 482). The attraction was not without its detractors; Stearns (2002) highlights that while some were delighted to have their weight publically displayed, it was also a source of embarrassment and shame for others (28). The introduction of the domestic scale in 1913 had enormous customer appeal as it moved the practice of weight measurement from the public to the private sphere, "from the third person to the second person and from the declarative to the conditional – *from what this person weighs to what you should weigh and what you could be*" (Schwartz 1986, 165-166, emphasis original). While the weight scale had long been attached to certain moral imperatives regarding

health, its introduction into the domestic realm had brought these concerns into a space they previously had little foothold.

Neff and Nafus argue that though it is perceived as an individual pursuit, self-tracking has far-reaching implications as “the very lenses we use to see ourselves and others” (2016, 9). Tracking a bodily response is not an isolated event; rather, it exists in a network that not only implicates other people through the collection of data, but also blurs “the line between home and clinic” (13). Not since the weight scale have medical implements been so intimately integrated into our lives, forming the contours and valleys of everyday experience by tying the ‘social’ to the ‘technical’. But what exactly makes technology social – or makes the social technical – is considered by theorist Bruno Latour as a fallacious dichotomy. His seminal text ‘Technology is Society Made Durable’ (1990) argues that rather than being separate concepts, the socio-technical is a complex network of interrelated ideas, actions and reactions that shape both humans and machines. This theory, eventually known as Actor-Network Theory (ANT), posits that technology does not simply mirror social dynamics, but is a fully interactive actor that shapes society just as much as society shapes it. He elucidates ANT through the example of the seatbelt, a member of the “missing masses” (1992, 227) in sociological discussion; when his car sounds an alarm one morning, frustrating him by telling him to fasten his seatbelt, the innocuous strip of polyester takes on a moral power that exists within a wider framework of traffic rules, road safety statistics, personal memories and social mores. This mundane object, the

subject of Latour's early-morning ire, possibly exerted more influence in that moment than Latour did himself.

In the years since Latour's encounter with the seatbelt, actor-network theory has stretched its reach from concrete mundanities to the ideological structures of queer theory. Kane Race (2020) writes in the *Routledge Companion to Actor-Network Theory* that although traditional understandings of ANT and queer theory seem to magnetically repel each other, their shared rejection of essentialism and conception of performative realities and identities allows for a unique partnership between the two that can allow for ANT to "break the stranglehold of totalisation said to characterise queer theorists' take on...heteronormativity," (169), while queer theory directs ANT's attention towards understudied counterpublics. Race argues that a symbiotic approach to queer theory and ANT takes the "fragile and ephemeral" (196) characteristics of the former and reinforces them with the assemblages of the latter, creating a more robust theoretical framework that can withstand the weight of multiple contradictory meanings.

In the digital age, the agentic properties of technology and the varied meanings they hold are even more prescient. Your phone can instruct you to avoid direct sunlight on a particularly sunny day, while a smart-watch is able to call for help when your heartrate drops; the proximity of biosensors and self-tracking devices makes it nigh impossible to escape some form of technical quantification. As these pieces of technology integrate further into our lives,

groups such as the Quantified Self community have emerged as enthusiastic participants in the collection of vast amounts of seemingly mundane data. Neff and Nafus note that while people have always recorded data about themselves and others in some form, it is the conduit through which these details are registered that changes *what* kind of information is being collected. They note that as biomedicalization, “the extension of medical or biological explanations for the way things are” (2016, 18), seeks to identify measurable, isolated qualities – after all, “it is easier to acknowledge the impact of a cluster of neurons than the impact of culture or society on why people behave the way they do” (19). This isn’t to say scientific data is not valuable, but that its inflated importance as a neutral ‘fact’ fails to recognise the contextual clues that may influence an individual’s condition more than an anomalous sequence of genetic code. When people track their bodies, rendering complex experiences into streams of ones and zeroes, their problems become solely their own; it is *your* responsibility to keep an eye on the things *you* can control. Digital self-tracking is riddle wrapped inside an enigma wrapped in a contradiction: it is a vital thread in the world wide social web, while simultaneously shrinking its users to individual case studies isolated from a larger network of stories.

However, if self-tracking were as clean-cut and finite as that, I wouldn’t have a thesis. It bears remembering that sociology as an academic discipline began its life as ‘social physics’, Auguste Comte’s attempt to herd a collection of disparate ideas into a “science which occupies itself with social phenomena,

considered in the same light as astronomical, physical, chemical, and physiological phenomena, that is to say as being subject to natural and invariable laws” (Comte in Iggers 1959, 434). The sociology of today – indeed, in its gender studies niche as I have situated my research – is a thoroughly anti-positivist institution that actively critiques ‘natural laws’, devoted to determining the mutable social links that connect phenomena across time and space. Here, I draw on the work of J. R. Latham (2016) in his queering of ANT in his introduction of STS to the burgeoning field of transgender studies, utilizing its multiplicity to elucidate the complexities of trans experience. Latham emphasis on the “*situatedness* of phenomena” (350) allows STS to consider technologies as sites of contingent, kaleidoscopic meanings, constructions which are never entirely complete. He argues that to view this multiplicity, the researcher must attend “to how phenomena are (intra-actively) enacted in *practice*” (350); in other words, as they occur in real time. In Latham’s research, this multiplicity exists through trans men’s’ bodies as continuously enfolding ‘narrative-practices’ of masculinity, sexuality, and embodiment. Through readings of various trans men’s autobiographies, Latham identifies how the relationship between transgender identity and sexual experience is in constant contention, evoking and rejecting existing narratives of shame, patience, and chastity (354). By writing their sexual encounters into narrative form, Latham argues that these practices “act to assemble multiple sex-gender enactments and materialize maleness for trans men (and their partners) through organizing strategies that include mutual exclusion, alignment, translation, addition and distribution” (362). This multiplicity

allows for a clearer agentic selfhood to exist within the mercurial co-dependency of the actor-network.

It is from this queered approach to ANT that I ask: what are the digital menstrual tracking practices of transgender, non-binary and gender diverse users, and how do they inform how sociotechnical studies can conceptualise the configured user? Moreover, what alternatives can transgender readings of self-tracking provide, and how might we be able to use them to approach the ever-expanding realm of digital life? My research confronts normative ways of understanding the relationship individuals have with non-human actors, and how these devices can shape and be shaped by the social forces we exude upon them. It asks what the role of self-tracking is to transgender narratives – not whether specific apps are ‘good’ or ‘bad’, but how these technologies frame our comprehension of transgender identities, menstruation, and the inalienable human desire to understand our bodies.

To answer these questions and forge a new path in the development of feminist and queer STS, we must first return to one of its key turning points.

## Chapter 2: Living Historically

1982, Germany. In a decade remembered for its big hair, an even bigger socio-political turmoil was set to come to a wall-shattering conclusion. As the Cold War was nearing its crest, firmly entrenched ideological divisions between the Soviet East and the Western Bloc were coming unstuck; in the Federal Republic, a prominent journal of Marxist theory, *Das Argument*, was branching out from its anti-nuclear movement roots after a lack of political clarity among the Left spurred internal conflicts between splinter groups. But rather than leading to ruin, these discourses inspired an expansion of theory into spaces that had, until recently, stayed behind the curtain. Frigga Haug, a founding member of the *Sozialistischer Frauenbund* (Socialist Women's Association), spearheaded the first volume of a new publication: *Frauenformen*, or Women's Form, a journal that seeded feminist critique into existing discussions of Marxist theory. Haug and her colleagues formed an autonomous editorial board within *Das Argument* and aimed to take control of a third of the six annual issues to properly address the staggering lack of women's voices. Their goals were twofold: "that of reconstructing scientific work along feminist lines, and that of remodelling Marxism to open up a place within it for issues concerning women" (Haug et al. 1999, 23). Their ambition, it seemed, could only be matched by the size of Queen guitarist Brian May's legendary bouffant.

But like a perm exposed to a sudden rainstorm, the editorial committee's objectives proved to be unsustainable. Its members, drawn from a

variety of existing projects in both academia and activist circles, had difficulty balancing their prior commitments with the added responsibility of sourcing, writing and editing new publications. The initial plan – for each woman to work on her own article relating to her specific area of expertise – was not producing the quality nor quantity of writing they had hoped to produce. As a result, the board was reshaped: instead of thirty members, only twelve of its most dedicated contributors remained, those who were most anchored in the women’s movement with enough time and energy to effectively realise the group’s now slightly lowered goals.

A significant change to the editorial board was the decision to work collectively, allowing for all members to contribute to articles and diversify their knowledge. The impetus for production no longer lay on the shoulders of any one woman; instead, writing became a process of sharing, learning and teaching wherein every member of the board was allocated work *on* and work *with* different pieces of subject matter for each volume. This decentralised approach was to be the group’s breakthrough method, laying the foundations of what would eventually become memory-work.

In the first volume of *Frauenformen*, Haug and her team wrote stories about the ways in which they had been socialised in feminine ways. As they write in the preface to *Female Sexualisation*, the compendium of their work:

The whole project arose out of our fundamental unease with all the theories of socialization previously developed within psychology and sociology. On one hand, girls are said to be accounted for by these theories – and yet they barely make an appearance. On the other hand, if and when girls do appear – as they have done in various socialization theories under the influence of the women’s movement – they surface only as objects of various different agencies (the family, the school and so on), which are seen to act upon them and force them into a particular range of roles. *The question of how individuals make certain modes of behaviour their own, how they learn to develop one particular set of needs as opposed to certain others, is never addressed.*

(emphasis mine, 24)

The root of *Frauenformen*, and indeed the women’s movement within the West German Marxist chapter, emerged from a desire for agency in theoretical modelling. These women were not interested merely in what psychological and sociological theories had been applied to their experiences; they sought to draw theory from their lives, to “understand women as active agents who are not simply stamped with the imprint of their given social relations” (25) but instead participate in the process of becoming. Rather than searching for inductive evidence of existing theory in their experiences, Haug et al. took a post-structuralist approach in understanding how they as individuals had recognised, internalised, rejected, adapted, failed, replicated, embodied, submitted to, played with, reacted against, and ultimately

“participated actively in the formation of [their] own past experience” (35).

Under the umbrella of feminine socialisation, this first edition of *Frauenformen* covered topics such as love, marriage, and children. A conspicuous omission from this cornucopia of experience was sexuality; it was only until the second edition that the topic of sex was broached.

The procedure they started with became the key tenant of the methodology, a deceptively simple request: write a memory related to a certain topic. Participants – a mix of academics and lay folk, drawn from *Das Argument*'s modified editorial board – were invited to write in whatever style they preferred, in first, second or third person, with as much or as little detail as they pleased; the point of the exercise, rather than to develop a rigid ‘true’ method, was to “live [their] lives more consciously” (71). The first iteration of the project collected stories across two years, during which time collaborative analysis was undertaken in groups. The participants discussed their stories, commented on each other’s experiences, offered alternate opinions that expand an individual experience from a single brushstroke to a complete painting. Then the stories were rewritten, participants informed by the comments of their peers to revisit their own memories and reconceptualise their details as minutiae of a larger whole, allowing “the object of research herself [to] become the researcher.” (35). The resulting analytical framework, supported by this collective interpretation of the self and society, allowed for “a particular way of processing the social world, as its appropriation by individuals has to be seen

as the field of conflict between dominant cultural values and oppositional attempts to wrest cultural meaning and pleasure from life.” (41).

One of the significant aspects of the methodology cultivated in *Frauenformen* is this emphasis on a collaborative approach to research. In elucidating their individual experiences, the group “came to know [themselves] and each other as historical contemporaries engaged in reconstructing the mosaic of experiences by which [they] were trained to enter society” (58); although the stories were cut from their own cloth, there were common threads of feeling and knowledge that ran through each. By identifying these common threads, Haug et al. could “find ways of articulating the personal sphere in political terms” (43), inviting a critical, extra-personal perspective on seemingly mundane individual experiences. Rewriting the stories allowed for an analytical paradigm that could not have been achieved had the participants reviewed their own memories alone; it was the sharing of stories, finding connections and differences that exist across multiple platforms and contexts, that produced the depth of affective knowledge with which *Frauenformen* became synonymous.

However, the collaborative analytical approach is not without its detractors. Haug et al. note that writing autobiography “assumes that the factors determining the life of the individual always remain the same” (46)

rather than existing within the real-time context of the events themselves. They go on to note that

Many of our own biographies work, for example, by order our perceptions of childhood experience to accord with our present view of ourselves as handicapped learners. Diversity is compressed and presented as unified evidence that we have ‘always’ been hindered in our development by this or that person, this or that circumstance...A story of an autobiographical kind *represents the sum total* of all the social judgements and prejudices, semi-scientific theories, everyday opinions and so on we carry around in our heads and which serve – usually implicitly – as models for our interpretation of the world today.

(emphasis mine, 47)

The ‘trap’ of memory work is a false sense of continuous intelligibility across time and space; all memories, no matter how specific to their context, are symptomatic of a wider socio-political paradigm. Haug et al. caution against evaluating all experience through the lens of present value-judgements, instead emphasizing that memory work should attempt to capture a key image from the memories as they were at their point of creation (71). In doing so, memory work privileges recollections of immediate emotional reaction above subsequent critical thought, as it is these raw, instinctive moments that provide a clearer conduit to the past than an individual’s judgements after the fact.

But this kind of emotional felicity is not universally applicable to every participant and every topic. Haug et al. note that some participants had difficulty elucidating the past in written form, while others were unable to conjure detailed descriptions of their memories (72). Anderson & McGrath (2014), writing on memory work in qualitative drug research, highlight that the method “is time-consuming and relatively demanding of the participants”, especially for those that lack conviction in their writing skills, and that “it is perhaps telling that memory work has often been carried out by groups of academic researchers.” (1137). Another study by Gamson (2018), reflecting on his and other gay men’s experiences in New York at the height of the AIDS epidemic, echoes Haug et al.’s trepidation to recount the past through a present lens, as “these sorts of memory projects...often receive pressure to stabilize, simplify, and unify the memories they evoke, to settle what they seek to leave unsettled” (37).

Despite these all-too-human pitfalls, the legacy of memory work is far reaching, stretching across the sociological divide and into fields such as psychology (Stephenson & Kippax 2017), anthropology (Andreassen & Myong 2017), and, critically, literature and education studies. Gannon (2015) utilised the collaborative writing approach of memory work in their study into the reading habits of young Australian girls. However, unlike memory work, the analysis of these stories was refined to a single researcher who collected the participants’ responses as they were originally written. The analytical framework, termed ‘collective biography’, shares more in common with a

standard closed reading than the codification of empirical data; Gannon emphasises that “rather than extracting fragments from a data set, as is done in much qualitative research, to embed these inside an argument, the stories are approached as *intact narratives* and tools from literary analysis may be as useful for analysis as are those from the social sciences” (emphasis mine, 63). The resulting analysis takes on a theoretical flavour, focused less dismantling and interrogating the stories themselves but on questioning what these stories say about the socio-political context from which they emerge (64).

When I launched my study at the beginning of 2020, I was prepared to conduct in-person group discussions, reflecting Haug et al.’s original method; however, as the dominos of COVID-19 fell and group gatherings were whittled down to non-existence, I was forced to alter my approach to remote participation. I elected to create an online form via the data collection website Qualtrics and asked participants to recall a single memory relating to their experience as a transgender, gender diverse, or non-binary person using a digital menstrual tracking app. In addition to their stories, participants provided a pseudonym and their pronouns so that I may refer to them directly in my analysis. I recruited participants through Twitter and Facebook, requesting that they pass on information to their followers by sharing my post; this generated a ‘snowball’ effect, attracting more participants beyond those who already followed me on either platform. In addition to this digital recruitment drive, I also reached out to members of the local community involved in transgender activism, who sourced participants from their organisations they worked with. I

attempted to contact community organisations such as A Gender Agenda, a local Canberra trans and gender divorce support group, directly; however, I received no response.

By August, I had collected fifteen stories of varying length from participants across the globe. Of these fifteen responses, ten were viable for analysis; the five I chose to not include were either not written as narratives, or provided information that another participant had expressed more clearly. My choice to exclude these responses was primarily motivated by constraints afforded to this thesis: as my methodology aligned more closely to Gannon's collective biography than memory work, my analysis took an increasingly theoretical slant that required narratively-rich responses to elucidate the concepts raised. Had I used all fifteen responses, certain parts of my analysis would have been textually weak, interrogating responses that ultimately provided little insight into the writers' experience.

My analysis was informed by my experience as a literature and linguistics student, further reflecting Gannon's methodology. I did not code the stories like the transcript of a qualitative interview, nor did I attempt to break down each story's syntax and grammar; rather, my approach straddled the line of Sociology and Literature Studies, utilizing the broadened horizons of social inquiry to inform closed readings of each individual story. I read and reread each story searching for connections, both internal and external; I was not searching for the 'truth' so much as I was actively making it, weaving strands

of the personal and political to demonstrate the intensely cyclical relationship between self and society.

## Chapter 3: Configuring, Conflating, Collaborating...

### 3.0: Introduction

“How can I explain what is happening to me?” Paul B. Preciado asks in his anti-memoir *Testo Junkie* (2013, 21). He’s speaking to the memory of Guillaume Dustan, his friend and writer who overdosed not two days before Preciado began self-administering testosterone. It’s 2005: YouTube is in its infancy, Canada is set to be the first country in the Americas to legalize same-sex marriage, and the first European Transgender Council will be held in Vienna, Austria later that year. Preciado, filming the foundations of what would become his transition and uploading each ephemeral frame to the wilds of the pre-monopolised internet, is at the forefront of a history still being written.

Across fifteen years and thousands of miles, oceans of difference, Preciado is not asking me for answers. He says, “I have no other alternative but...to accept the fact that the change happening in me is the metamorphosis of an era,” (22); his experimentation with testosterone, both a resistance to the “microfascism” (60) of prescription hormones and an intrinsically personal transformation of self, happens without definition. *Testo Junkie* emerges at a specific point - in Preciado’s life, in the timeline of transgender history, in the complicated development of bodies with technology - and its questions, multitudinous and wide, do not seek rationalisation from its writer nor any reader that would follow. Still, it cannot resist the urge to ask: am I alone in

this? Does anyone else feel the things I feel? How do I fit into this messy, often contradictory world?

Where are these missing masses?

This study began with a neat, simple premise: I wanted to understand the practices of digital menstrual tracking by transgender people. This innocuous question was nestled in a web of wider discourses, crossing innumerable bridges from sociotechnical studies to queer theory and back again. What I didn't expect was for my study to expose a deeper, more existential quandary: the question of belonging. In asking how trans people used tracking technology, I unknowingly asked them to crack the fragile eggshell of community, of seeing yourself in others, and specifically what it means to be a configured user in a sociotechnical imaginary. For whom was this technology made for, and for whom is it servicing? The *how* of my study had transformed into *who*.

Configuration, as described by Grint and Woolgar (1997), is the 'building in' of the social into technological devices. They argue that the dichotomy of 'technical' and 'non-technical' is as much an ideological fallacy as the difference between free will and determinism, and that it is by acknowledging the ways in which the two intermingle that we come to understand the product of study. In the first part of my analysis, I examine the ways in which trans people use technology to configure themselves, utilising

Grint and Woolgar’s reading of technology as ‘text’ to elucidate the emerging and evolving relationships between menstrual tracking applications and transgender experiences. Resting on the laurels of interpretive flexibility, this understanding of technology as text allows for “an examination of the processes of construction (writing) and use (reading) of the machine” where “the relation between readers and writers is understood as mediated by the machine and by interpretations of what the machine is, what it is for and what it can do” (70). I will also critically analyse the menstrual self-tracking app Clue, a notable piece of ‘femtech’ that gathers and interprets an individual’s data to “know [their] body better” (Liao 2019), examining how its non-gendered take on menstruation allows – or fails to allow – the transgender user to configure their own identity.

The second part of my analysis is conflation, examining the ways in which transgender identity is played out on menstrual tracking apps in conjunction with existing trans narratives. Informed by a history of transgender pathologisation outlined by Stryker (2017), this section will explore how identity is reflexively curated in conjunction with external configurations, as detailed by Giddens (1991). I will then engage with trans politics, particularly the dichotomy that emerged in the 1990s between the ‘wrong body’ model of identity and the ‘beyond the binary’ paradigm (Bettcher 2014); it is from these conflicting narratives that I will return to Clue’s attempt at removing gender from menstruation.

The penultimate part of my analysis, collaboration, treads the familiar ground of actor-network theory (ANT) - principally, its conviction that all beings, technical and non-technical, perform in conjunction with each other to create an interdependent web of actions and reactions. Significant to understanding ANT is the process of collaboration; the third and not-quite final stage of my paradigm. Based on the work of J. R. Latham (2017), I investigate how transgender users interact with clinical institutions to both configure and communicate their identities and practices. In conjunction with Latham, I will revisit Preciado's *Testo Junkie* to examine his mediation on the "political tautology" (2013, 60) of the sexed body in the somatechnic disciplinary society we find ourselves embedded in today.

I will conclude with my projection for the future of the transgender user, looking to Donna Haraway's metaphor of the cat's cradle to elucidate how menstrual tracking technology can be utilized as a method of connection between the user and the machine, between trans and cis users, and between the individuals and the intricate social web they operate within. My reading will build on Neff and Nafus' assertion that "the line between ourselves and our data is where you choose to draw it" (2016, 188) – and to do so, I will include my own experiences of menstrual tracking, questioning the role of configuration I have discussed as we move through Preciado's prediction of a pharmacopornographic era.

Configuration, conflation, collaboration, and connection. Individually, these are constructs that STS has sunk its teeth into before, from Cooley's looking glass (1983 in Cahill et al. 2018) to Latour's automatic door (1992). What my analysis does in connecting these disparate concepts to transgender experience not only unspools the common threads between them, but multiplies our understanding of STS itself. Though the concept of a 'trans technology' has been explored previously (Haimson et al. 2019), my analysis situates transgender studies as the lens *through which* STS can be explored - not the other way around. By centring transgender perspectives, I pry the edges of STS open to worlds that have always existed on its peripheral, inviting alternate takes on our use of and use by technology. This thesis will by no means reach through the eddies of time and try to give Preciado answers he didn't ask for, nor will it offer a neat and practical solution to the participants of my study. Instead, this thesis follows the well-worn STS tradition of taking off our blinders, letting us see the racetrack as it is, and still choosing to run anyway.

### 3.1: *Configuration*

Grint and Woolgar have a problem. “The nature of the connection between the production and consumption of technology,” they write, perhaps using Windows ‘95 on a computer that is ten times heavier than the one I’m using now, “is a vexed question which admits a variety of approaches.” (1997, 66). Like computer design, the past two decades have cosmetically streamlined the multitude of these approaches into some familiar hallmarks of sociotechnical study: actor-network theory (ANT), the social construction of technology (SCOT), and the empirical programme of relativism (EPOR). Despite the ideological differences, these three approaches have two things in common. Firstly, they love a good acronym. Secondly, they acknowledge that divining a connection between production and consumption only works when we consider the social aspect that is written into and surrounded by both processes.

This idea is at the core of the configured user. A 2016 study on software design by Bivens and Haimson found that “far from [being] neutral...programming practices bake values and assumptions into technology” (1); the very building blocks of [software] are, by virtue of human design, entrenched in [values]. For their study, the focus was on gender logging: where and when social media platforms ask for, or require, that users submit information regarding their gender. They argue that this pattern of self-declared recording has multiple functions, the most significant of which is the recursive

durability of attributing specific kinds of meaning to gender markers. They point to Facebook's inclusion of non-binary gender options in 2014 as symptomatic of this pattern; despite the appearance of inclusivity, initially signing up to the platform still requires that the user selects a binary gender (4). With increasing recognition of transgender and non-binary identities, Bivens and Haimson highlight that existing social media platforms are changing their configurations to make room for these "new" users; however, by expanding their definition of gender, "their programming practices may inadvertently advocate for certain groups of people while alienating others" (8). Ultimately, there is no 'right way' to reprogram gender markers on social media; these sites are houses built on pre-existing foundations, and even the most drastic of renovations cannot change their bedrocks.

What is to be done, then, for users who want to utilise these structures to their own ends? How are these users configuring themselves and their identities with, against, and through these 'baked values'?

To address these questions, I must first secure my evaluation to an analytical framework; namely, Grint and Woolgar's reading of technology as text. Heavily based in social constructionist thinking, Woolgar and Grint posit that while Western societies assume that "the very idea of the technical by definition precludes the social" (1997, 66), there is an intrinsic connection between technological development and social evolution that transpires when one discards the notion of technological neutrality. Instead, they argue that the

relationship between the technical and social is symbiotic, determinist to neither pole; rather than asking what is definitively social about technology, they question *how* actors, primarily human, orient themselves in relation to this seemingly 'inherent' dichotomy. Grint and Woolgar describe this analytical method as a form of discourse analysis whereby the way people think and talk about the sociality of technology takes precedence over any objective reality on the subject (68).

In analysing the *how* instead of the *why*, Grint and Woolgar position technology as the text on which varying discourses can be read. Their interpretation echoes a long history of poststructuralist theory and its critique of essentialist knowledge, specifically invoking Jacques Derrida's notion of deconstructionism. Derridian philosophy is, by its nature, a highly volatile set of discourses; literary theorist David Ayers writes that in attempting to summarise deconstructionism, "it is almost impossible to do so without violating the ethos of that writing and offending professional Derridians" (2008 in Bertens 2014, 104). In an effort to tread lightly on the sensibilities of devoted Derridians and answer the questions of curious students alike, Han Bertens' description of deconstructionism emphasises the 'slipperiness' of language and presence as the locus of knowledge (2014, 107). He highlights that for Derrida, the connection between presence - an individual's awareness of their own thoughts and feelings - and language is a fallacy, albeit one that allows us to communicate in some small, sometimes inaccurate way. As the spoken word is "inherently unreliable" (108), our understanding of reality

through the lens of language is in turn ‘contaminated’; there is no pure meaning to any given thing if it has been named.

Deconstructionism, like the language it concerns itself with, is a slippery concept; given enough room, its theoretical leanings can bleed into any and every context imaginable. Many critiques of Derrida’s work focus on this uncommitted mutability; M.A.R. Habib writes that “it is only against a simplistic and positivistic understanding of truth, meaning, presence, and subjectivity that [Derrida’s] notions of trace, difference, and writing can articulate themselves” (2008 in Bertens 2014, 117). But it is this instability, however it is articulated, that allows for what semiotic theorist Roland Barthes called the “plurality of other texts, of codes which are infinite” (1970 in Bertens 2014, 119): the human actor’s ability to comprehend a cacophony of transient meanings from a single piece of text.

Grint and Woolgar’s analysis takes this concept a step further; technology, in all its keenly structured and knowable glory, is the tilted stage on which we perform our own tilted plays. Much like Barthes heralding the death of the author and the birth of the reader (1986, 55), Grint and Woolgar allude to the inevitable redundancy of the maker and inception of the user; and, like a poststructuralist scholar defending the academic rigour of their work, they emphasise that having a multitude of readings does not preclude some readings from possessing more argumentative weight. Building on Smith (1978), they acknowledge that “the important point is that the organization of

the text is isomorphic with the concept we use to make sense of it,” (Grint and Woolgar 1997, 73) - that is, the frame a text is created in will inform what kinds of readings emerge from it. In Woolgar’s 1997 ethnography of computer usability trials, then, the configuration of the user depends on the pre-existing conditions of the technology, which in turn are informed by existing configurations. Like an ouroboros endlessly swallowing its own tail, context is context is context - and it is from this cyclical Derridian kaleidoscope that I conduct my analysis.

### **Story 1, as told by ‘Alexander’**

My GP recommended I start using a method to track my cycle after I was diagnosed with PCOS in 2017. I was very hesitant at first, I didn't want to have a reminder that my body didn't match my identity, and I'd seen so many ads specifically aimed towards cisgender women with wording that would trigger my dysphoria, but in the end I knew it would be better for my health and I had to bite the bullet. But I did my research, I found an app that didn't hyperfeminize the menstruation cycle, and only focused on symptoms and cycle tracking. No positive thoughts or prayers involved. The application I use has now become routine. As many in our modern age I scroll through Twitter whilst doing my business, so having the app there for me to track in a single click or two has become easy to just do and get on with. The app has turned my cycle into a scientific fact, it helps remove the dysphoria I experience by turning my body into facts, and that's a side effect of using tracking applications that I could never have imagined.

Threaded through my participants' stories is the unerring sting of frustration: at the tracking technologies available, at the limits of those technologies, and at their own inability to use existing technologies 'correctly'. Themes of disservice, incompatibility and estrangement appeared in almost every submission; as Alexander reports in the above story, his experience of menstrual tracking apps indicates a targeted market of cisgender women, alienating potential transgender users from their very first interaction to these technologies.

#### **Story 2, as told by 'Joaquin'**

The app I use (Flo) doesn't acknowledge trans men and is constantly referring to its users with female pronouns/as women and in general most of its info is geared towards women. I try to ignore it but it's annoying that I can only use it as a basic calendar - because the info doesn't account for trans men on T so it's inaccurate.

Another participant, Joaquin, notes that the app he uses "doesn't acknowledge trans men" and echoed Alexander's supposition that such technologies are developed for, and therefore being advertised to, cisgender, menstruating women. Their reading of the 'baked values' of these apps indicates that transgender people are, at best, an afterthought to the development process; these technologies are not meant for them.

Despite this, Alexander and Joaquin continue to use them. Grint and Woolgar note that in the process of configuration, boundary work is employed to define the users' relation to the machine and its producers; in Woolgar's ethnography of computer usability trials, such boundaries included warning labels, warranty agreements and even academic texts with 'do not cite' notices (83), and it is in crossing these boundaries that tension is invoked between user, creator and machine. While using a menstrual tracking app for its basic calendar function is not directly analogous to voiding a computer's warranty, there is still a tension between the boundaries of what can and can't be done to 'correctly' use the technology in question. In no other story was this more prominent than Matilda's.

### **Story 3, as told by 'Matilda'**

I find my period tracking app useful in giving me a rough estimate of the days in which it might fall but it doesn't get the exact days right all the time. When I first was looking for one I tried to make sure I found one that mentioned blood as little as possible because I don't bleed when I am on my period but it do get big emotional changes that can make things hard for the next few days. Because I don't have a physical sign on when I'm on my period the app is good because it can give me an explanation on how I've been feeling. Something that I find good is that it lets me move the start date of my period around even after that day has past because I might have two or three days where my mood changes and I'm not entirely sure when that starts so it's good to be able to go back and change the start date when I have a clearer picture.

Setting out on this research, my expectations for who used menstrual tracking apps were unwittingly restricted to people designated female at birth. In trying to broaden the scope of sociotechnical studies, I unconsciously narrowed my understanding of who my participants could be by relying on my existing idea of a menstruating trans person: me. Managing your individual bias is one of the fundamentals of sociological research; before you can know anyone else, you must know yourself. Matilda - a trans woman taking estrogen - forced me to recognise that, until then, I had been operating on a very specific set of assumptions: firstly, that only people who menstruated used menstrual tracking apps; second, that menstruation implicitly included the shedding of blood from the vagina; and finally, that just as testosterone can ‘stop’ the menstrual cycle, so too can estrogen ‘start’ it. In all the time I had been criticising the boundaries employed and valued baked into menstrual tracking apps, I was equally as culpable regarding the cycle itself.

What does this mean, then, for my analysis? Foremost, Matilda’s story illustrated the extent to which configuration can be altered by the user; this indicates a degree of interpretative flexibility. As Bijker et al. (2012) explain, interpretative flexibility resists technological determinism by emphasising the strong social element of technical development. Rather than a linear, consequentialist approach, they argue that “technological development [is] a nondetermined, multidirectional flux that involves constant negotiation and renegotiation among and between groups shaping the technology” (7).

Interpretative flexibility is the ability to recognise that technological findings, constructs and theories are open to a variety of configurations, by both creator and user. As a hallmark of SCOT (social construction of technology), interpretative flexibility loosens the positivist shackles of ‘hard’ science and invites a social perspective on the lifecycle of seemingly neutral, truthful things. Interpretative flexibility can be explored when controversies arise in scientific development, as it is during these moments of contention that strong, differing opinions over evidence emerge (21). These differing opinions identify a ‘problem’ in the design of a piece of technology or scientific endeavour to a specific social group, and offer a ‘solution’ in the form of an alternate interpretation.

Matilda identifies a limitation with her menstrual tracking app - however, rather than changing the physical construction of the app, she reconfigures its existing protocols to suit her needs. Unlike Bijker et al.’s example of the development of the bicycle, the interpretative flexibility that occurs when Matilda uses her app operates at a highly-individualised level: though other participants also expressed using their apps in ways they had not been configured to be used, these alternate configurations were not being enacted on a wider, community-based scale. To Matilda, and the others who informed me of their divergent usage, the interpretative flexibility of their technologies further isolates their experiences and identities - *they* are the ones who must change these apps for *themselves alone*. When late 19th century societal conventions shunned women for mounting high-wheeled Ordinary

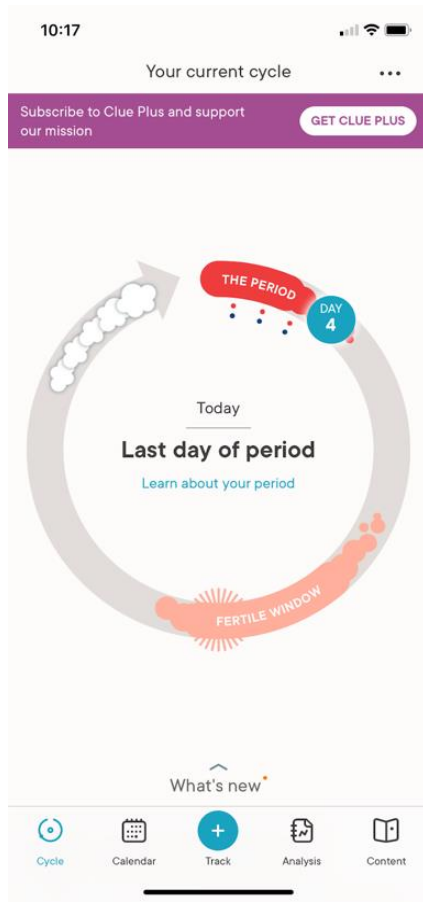
bicycles in their impractically voluptuous skirts, the low-fronted, side-saddle friendly Lawson's Bicyclette was created to fulfil the female bicyclists' needs (Bijker 2012, 30); now, we are waiting for an app that addresses the inadequacies of existing technologies identified by transgender users, our own trans bicyclette.

But some of us have already found it.

#### **Story 4, as told by 'Elle'**

When your period is irregular, it becomes hard to track. I started on birth control several years ago, and once I did that, my period seemed to even out, but even still, my cycle length can vary from month to month. The first app I tried for tracking my period was the FitBit app, and in general, it's pretty good. But the little icons are all women, and the coloring and language can be pretty gendered. It was on Twitter that I first saw the recommendation of the app Clue. One of my mutuals was asking for recommendations on period tracking apps, with the caveat that they not be color coded (pink, etc.) and that they not use gendered language. Since I was in the market for something like that myself, I kept an eye on the thread and was intrigued when several people (cis, trans, and nonbinary) said they used and liked Clue. So I downloaded it myself and started using it, and while I think there are some adjustments that could be made, overall, it's a pretty great app.

Founded by Ida Tin, Hans Raffauf, Mike LaVigne and Moritz von Buttlar in 2012 through their Berlin-based tech company BioWink GmbH, Clue is a menstrual tracking app that prides itself on pioneering the field of ‘femtech’ (Magistretti 2017). In an advertising video for the app, Raffauf states that Clue’s vision is “to enable women from all around the world to have insight into their bodies and to be empowered by that knowledge” (Clue 2018). However, the app has a unique emphasis on transgender, non-binary and intersex users, acknowledging that it’s not just women who have periods. The website hosts a LGBTQIA portal supplying healthcare information specific to trans users (Fortenberry 2019) and includes articles by non-binary employees who discuss their relationship between menstruation and gender (Bryan 2020). As Elle highlights in her story, Clue avoids using gendered language to describe menstruation, nor is it hyper-feminised in style (using red rather than pink icons, for example). Instead, its emphasis lies in simplicity, a clean design that feels neither feminine nor masculine, allowing bodily processes to be catalogued and archived without attracting any gendered value (see figs. 1-3).

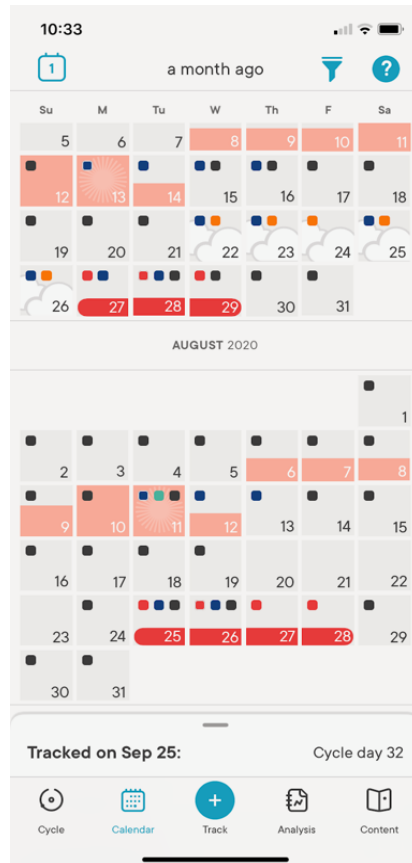


**Figure 1:** *Clue app home page.*

*Screenshot taken by G. Pinter, 1<sup>st</sup>*

*November 2020.*

The app's design is likewise neutral, plotting the user's cycle in a simplistic, circular graph (see fig. 1). There are three significant points to Clue's graph: the period, the opening red chapter; the fertile window, a faded section with its climax at the cycle's nadir; and premenstrual symptoms (PMS), rounding the final bend with turbulent storm clouds. A blue dot represents the user's current place within the cycle, applying a numerical value to their position in relation to these points. An alternate view allows users to broaden their scope by presenting previous cycles in a calendar format (see fig. 2).

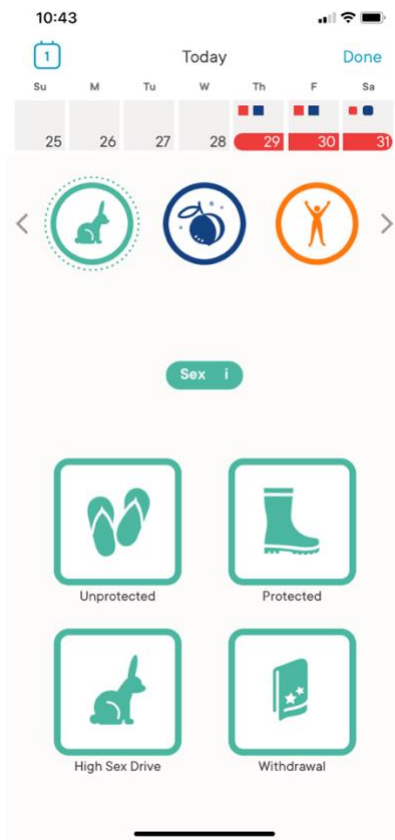


**Figure 2:** *Clue calendar page.*

*Screenshot taken by G. Pinter, 1<sup>st</sup>*

*November 2020.*

The coloured dots on the calendar view represent various data points input by their user; categories to track include bleeding, fluid, pain, emotions, cravings, sex, skin, energy, stool, and ailment, as well as an option to include personalised ‘tags’ to note idiosyncratic events. Within these categories are more specific tags; for example, under ‘sex’ there are options for high sex drive, unprotected and protected sex, and withdrawal from sex (see fig. 3). By logging these characteristics and events across multiple cycles, the app can identify patterns and provide insight for the user as to when and why these physical symptoms occur - for a price.



**Figure 3:** *Clue tags page.*

*Screenshot taken by G. Pinter, 1<sup>st</sup>*

*November 2020.*

Clue Plus launched in 2019, altering how users engaged with the app. Prior to its subscription service, all users could access Clue's monthly review, a report detailing the user's data logs in a single document for any given cycle, and its calendar predictions, which forecast the user's future cycles up to six months in advance. In addition, certain existing features were placed behind a paywall, including information about a user's recurring symptoms. This kind of monetization of menstrual tracking is not unique to Clue; similar apps such as Flo, Luni's Period Tracker, and Eve by Glow offer additional subscription services that are not available to free users. However, unlike other apps, Clue

stresses that its Plus payments fund further research into menstrual science, delineating its commercial reality to an altruistic appeal for the betterment of healthcare (Clue 2019). As Roberts et al. highlight, “in this scenario, knowledge acquired from the ‘secure’ data points [is] sold back to those who generated them” (2020, 58), creating a continuous closed loop that sells the idea that the body must be understood externally to function internally.

By paying a premium to understand menstruation, both the user’s cycle and those of people worldwide, Clue continues the long tradition of searching for universal fidelity in the ‘neutral’ technological sphere. In the promotional video mentioned earlier, CEO and co-founder Ida Tin states that the inspiration behind Clue was a fundamental question: “what if I could just use data to understand my body? Then I could navigate life much better.” (Clue 2018). Her decision to quantify her bodily experiences is what Neff and Nafus (2016) deem a ‘crossroads of cultural scripts - maintaining or changing how one understands themselves in relation to others through existing medical and social discourses (47). The conflation of a quantified average and the highly social concept of ‘normal’ gives precedence to a certain kind of knowing; Neff and Nafus argue that self-tracking can “burden people with the work of determining whether their data represents ordinary human variation, a physical problem, or a social belief about health and wellness.” (39). The desire for a measurable, absolute normality produces categories on either side of the bell curve, identifying certain behaviours and symptoms as problematic while others are socially deified.

This isn't to say that the search for answers is fruitless, nor that self-tracking's division of normal and not-normal is inherently demoralising. As Elle mentions, the desire to understand menstruation is a wide-spread concern, with many people, cis and trans alike, turning to social media for explanations. Their desire for easily intelligible information is not unsurprising; Stubbs and Sterling (2020) highlight that teenagers and young adults are often presented with contradictory, 'double' messages regarding period regularity: "there *is* an average, 'normal' period which includes PMS as *likely*, but one's unique menstrual experiences are *also* normal" (240). As a culturally taboo topic with a significant deficit in research, painful menstrual conditions such as endometriosis are frequently mis- or under-diagnosed (Guidone 2020, 272) and many sufferers seek information, solidarity and advice in collaboration with their peers rather than the guidance of clinicians.

Community-based knowledge isn't a recent phenomenon, as I mentioned with the Quantified Self movement in my introduction; however, what is novel is the field on which these collaborative enterprises are occurring. Clue is not a social media app - although it does allow the user to share their cycle data with another user - but it exists within a heavily fortified web of networking sites that allows its name to echo from thread to thread. Elle notes that she first heard about Clue through Twitter; as did I. The short-formed, hyperlinked nature of Twitter allows bite-sized pieces of community knowledge to travel across multiple users' timelines faster than other text-

heavy platforms like Facebook or Tumblr, giving it precedence among groups that prioritise collective knowledge making (Neff & Nafus 2016, 24).

When trans users recommend Clue for its degendered approach to menstruation, they create new threads of community knowledge that, in turn, determine who uses this technology and for what purpose. While this example may not operate at a corporate game-changing level (yet), it is these small instances of interpretative flexibility that alter the effectiveness of baked values. The wider the margins of these values, the more wriggle-room there is for deconstructionist readings that service the trans user: configuration, rather than being a straight-jacket, becomes a versatile Louis Vuitton blazer that can be tailored to suit the user's needs and desires. But like an inordinately expensive piece of clothing, there are still restrictions that chafe at the boundaries of what the user can feasibly do. A blazer is a blazer is a blazer; an app designed for the 'normatively-functioning' cisgender woman can only be stretched so far before it loses its shape.

What, then, does the trans user change about this dynamic? If menstrual tracking technology is the text on which we can generate our own readings, what are those readings, and what do they tell us about the relationship these users have to socially constructed aggregations of transgender identity?

### 3.2: Conflation

#### Story 5, as told by 'Jason'

I had the Clue app on my phone for a while before coming out/socially transitioning. I guess I was curious about the timing/duration/symptoms of my cycle. Because periods were always so emotionally uncomfortable, I would disassociate from it, ignore it as much as possible and suppress the memory as soon as it was over. So, Clue was good at shedding some light on the patterns and not-so-obvious symptoms because I could record stuff as it was happening and then forget about. However, once I had found the patterns I was interested in, I lost interest in the app and eventually deleted it. I never liked the focus it had on fertility. While I objectively know that it could be relevant for me, pregnancy is something that is so foreign and disconnected from my identity and self, that I don't even want to think about it, let alone have my "most fertile days" pointed out to me by my phone!

In her treatise on 'intimate surveillance' - any form of data collection relating to personal relationships and behaviours - Karen Levy states that "the act of measurement is not neutral. Every technology of measurement and classification legitimates certain forms of knowledge and experience, while rendering others invisible." (2015, 687). As I have detailed, the configuration of menstrual tracking technology prioritises the sociotechnical imaginary of a cisgender woman whose cycle fits neatly into 28 days, bleeding on clockwork once every month of every year from puberty to menopause. This imaginary, unreachable even for cisgender women who *do* have cycles deemed regular, is

thrown into further contention by the transgender user; what stories, if any are visible, should it be defined in conjunction with, apart from, or against? Where does 'transgender' meet 'menstruation', and how are these two concepts 'read' on menstrual tracking technology?

To understand how these conceptualisations come into being requires an understanding of identity work, principally Anthony Giddens' reflexive self-identity. Giddens writes that

A person's identity is not to be found in behaviour, nor—important though this is—in the reactions of others, but *in the capacity to keep a particular narrative going*. The individual's biography, if she is to maintain regular interaction with others in the day-to-day world, cannot be wholly fictive. *It must continually integrate events which occur in the external world, and sort them into the ongoing 'story' about the self.* (emphasis mine, 1991, 54)

Giddens' reflexive framework echoes the works of Erving Goffman (1959) and Judith Butler (1999), suggesting that the individual is mutually intelligible in society through their performance with others. Identity and its processes can only be formed in conjunction with others; Goffman refers to this through his backstage/frontstage metaphor, while Butler specifically invokes gender as the mutable plaster from which we sculpt our interactions with others. For Goffman, the performance is unanimously agreed upon and

primarily unspoken, only becoming uncomfortably ‘visible’ when one or more players fail to adhere to the social script (1959, 224). Butler furthers this, positing that “there is no pre-existing identity by which an act or attribute might be measured” (1999, 180); gender, like other aspects of identity, is a performance directed in whispers, based on rumours of a script passed from mouth to mouth, actor to actor. We exist in stories that have no beginning, yet somehow, we still manage to play along – until, like Jason encountering the fertility aspect of his menstrual tracking app, we find ourselves unable to reconcile the mask we have been provided with the face we bare.

The reflexive conjecture that Giddens proposes emerges from a post-traditionalist construct, engendering a self-awareness that “provides the individual with the opportunity to construct self-identity without the shackles of tradition and culture, which previously created relatively rigid boundaries to the options for one’s self-understanding” (Adams 2003, 221-222). This conceptualisation of identity requires a thoroughly deconstructionist approach to gender, almost entirely divorcing the individual from their context; in other words, it is a painting without a canvas. I identify Giddens’ reading of “the self today [as] a more or less continuous interrogation of past, present and future” (1992, 30) aligns with Elizabeth Freeman’s queer time, anticipating the possibility of identity work that is unbound from linear progression. My analysis requires make sense requires an understanding of past and present - and a healthy dose of imagination for what lies ahead in the future.

### Story 6, as told by 'Eli'

Eli looked down at his phone, a small alert from an app looking like a red bubble popped up on his screen. "Periods nearly here!" It was said with such excitement and positivity but only filled him with dread. Whilst he was all for the celebration of menstruation and accepting it into the status quo, he felt super uncomfortable having to celebrate it for himself, especially when it didn't feel like it should be happening to him. In preparation he grabbed two pairs of underwear, one a pair of masculine boxer shorts to help curb the dysphoria and another a pair of boyshort panties as they were called, so they could actually keep some semblance of pad in place. It had become the norm for him, wearing two pairs of underwear during shark week, however summer this would prove to be a killer. The first echoes of aches and pains started to come from below, and he added them to his tracking app, at least knowing now what to expect each month rather than being struck with surprise each time. He popped a few pain pills and tried to continue on with his day as best he could.

Susan Stryker notes in her compendium of transgender history that "until recently, transgender issues have been presented as personal issues....rather than being seen in a wider social context" (2017, 2); the concept of 'trans history' did not exist because transgender identity was not embedded in social discourse. Stryker points to second wave feminism in the 1970s as the key to unlocking a transgender history, as it was the "personal is political" slogan that presented a visible moment for trans people to connect their own stories to others across time and space. While it is certain that people

who we would now deem transgender have always existed in some form, Stryker notes that the mid-nineteenth century gave rise to a “mass transgender movement” (46), whereby the banning of cross-dressing in multiple North American cities gave a name to something that had once been kept behind closed doors. The ‘first’ American transgender narratives were of criminality and, with the rise of 20th century medical intervention, pathologisation.

It is important to note that the transgender history Stryker outlines in her book is steeped in a longer, broader history of racism and anti-Blackness in the United States. She writes that the denouement of the eighteenth century gave precedence of science over religion, and the close of the nineteenth elevated medical science to the highest authority; this is a progression that was pushed by scientific racism which advocated for prescriptive, anti-Black disciplines such as phrenology (51). Stryker argues that transgender experiences were and continue to be mediated through racial lenses, compacting and amplifying the marginalisation of those existing at the intersections of both (51).

The pathologisation of gender non-conforming behaviour shifted its definition from cross-dressing, a practice, to transgender, an identity, much like the ‘creation’ of homosexuality by Karl Maria Kertbeny in 1869 (53). Stryker writes that with advances in medical procedures such as the introduction of anaesthesia and antiseptic products, people began requesting surgeries such as double mastectomies, breast implants, phalloplasty, and vaginoplasty - surgeries we would now classify as gender-corrective procedures. These

advances, and the interest that followed, were a double-edged sword; medical intervention has “gone hand in hand with [doctor’s] power to define and judge....constructing transgender phenomena as symptoms of a mental illness or physical malady” (52). Until 2013, the *Diagnostic and Statistical Manual* (DSM) classified Gender Identity Disorder (GID) as a mental illness (18), and it was only in 2019 that the World Health Organisation’s International Statistical Classification of Diseases and Related Health Problems changed its ‘Transsexualism’ category to ‘Gender Incongruence of Adolescence and Adulthood’, and eliminated ‘Fetishistic Transsexualism’ from its grouping of sexual inclination or paraphilic disorders (García & Ayuso-Mateo 2019, 66). These changes were brought about following criticism from transgender activists and academics who highlighted that diagnostic criteria such as the DSM assume that “diverse gender identities are inherently disordered and [are] consequently perceived by many to be stigmatizing” (Davy & Toze 2018, 159).

With such a prescient history of pathologisation, it’s no wonder that transgender identity is so intimately connected to medicine. Currently in the Australia, most states and territories require evidence of a sex affirmation procedure to change an individual’s gender marker on their birth certificate; in New South Wales, the signed statutory declarations of at least two medical practitioners are mandatory to legally register change of sex (NSW Legislation 2019). Stryker notes that in America, the explicit connections between transgender identity, medicine and the law emerged in the 1990s with the passing of the Americans with Disabilities Act (ADA), legislature introduced

to protect the rights of disabled people that by definition should have covered transsexuality as a “psychopathological debility”, but was specifically written so that it did not (2017, 151).

The ADA’s decision came about during a significant period for transgender politics, as two ‘sides’ debated on the locus of trans identity: body or mind, individual or society, inside or outside the gender binary. Bettcher (2014) defines this discourse as a continuous push-and-pull of the “wrong body model” (283) and the “beyond the binary model” (284). The wrong body model built on existing frameworks of “misalignment between gender identity and the sexed body...developed in the context of sexology, medicine, and psychiatry” (283), while the beyond the binary model, pioneered by theorists and activists such as Sandy Stone, Leslie Feinberg and Kate Bornstein, placed emphasis on the unity of gender-variant people against pathologisation, as it was this exact kind of medical regulation that erased emergent and fluid transgender identities. Bettcher highlights that although the beyond the binary model has gained academic precedence in the last two decades, it is the wrong body model that has remained the cultural touchstone of the transgender narrative, and its connection to corrective surgery signifies the point at which a trans person truly ‘becomes’ themselves (400).

If the ‘beyond the binary model’ were to become the dominant discourse of transgender politics in the future, the fundamental ‘truth’ of the male/female sex binary would be subject to dissolution. Laqueur’s genealogy

of the sex binary traces its origins to the Victorian era, wherein ‘womanhood’ was something sharply distinct from the experiences of man, a biomedical legitimisation that determined social status and its relative power (1990, 6). He writes that prior to the Enlightenment, “in the human female and most other mammals...ovulation [was] *in fact* independent of intercourse, not to speak of pleasure” (8), and it was only with the development of anatomical science that menstruation was compounded with womanhood. A beyond the binary model would separate these concepts once more, taking gender out of menstruation and vice versa.

This is, in part, what Clue is striving for. Within their online encyclopaedia of menstruation is a small albeit flourishing section titled ‘Periods Beyond Gender’. In a keynote article on the topic, Jen Bell (2017) writes that

Within the Clue app and our customer support conversations, we do our best to remain gender neutral, but in some of our English-language marketing we use the term “female health” to describe what we do. Clue is currently available in 14 languages and each one offers unique challenges and possibilities. For now, we feel that using the word female makes our app and company story more accessible to people who are not familiar with evolving language around gender.

For the most part their endeavour is successful; stories such as Elle and Jason's can attest to its neutral appeal. However, by their own admission, the intensely gendered history of menstruation is a context which is difficult to divorce from; everything, from euphemisms used to images propagated, ties menstruation to womanhood. As Bell (2018) notes in a subsequent article on the troubles with translation, language has proven the most difficult hurdle for Clue's marketing team to cross; though the English lexicon allows for more ambiguity, Romance dialects have grammatical gender and implicate nouns in ways English does not. Translator Rocco Schenkel highlights that a key point of tension in writing Clue for the Italian audience is,

The debate regarding the use of gender-neutral language in Italy and in the Italian language has not progressed as much as in other countries. In more informal platforms such as social media, the use of the “\*” has started to be seen. This “\*” is used to omit the last vowel of words that usually determines the gender...*But this technique is not widespread outside the LGBTQI+ community and has not been adopted outside of colloquial written language.*

(emphasis mine, in Bell 2018)

Schenkel presents dual challenges in translation: there is the overarching language itself, and the specific linguistic nuances employed by groups that are not mutually intelligible to others. While English does not engage with grammatical gender as Italian does, it does share the issue of

accessibility: what words can be used that simultaneously include marginalised users, while clearly signposting what the app is to those unaware? Former Clue writers LaVigne & Kennelly (2018) state that this is one of the priorities for the development of the app, a high-stakes balancing act between existing descriptors and emerging alternatives, unconsciously echoing the wrong body and ‘beyond the binary’ models of transgender identification.

Though Clue may stumble at times - notoriously, there was a period where the app referred to itself as ‘fem@le health’, a term confused many and serviced none (LaVigne & Kennelly 2018) - Elle’s story demonstrates that its inclusive message is what draws the appreciation and continued use of transgender users. While not an entirely blank slate, Clue allows users like Alexander the ability to “turn [their] cycle into a scientific fact...[removing] the dysphoria” and providing a platform on which a transgender user does not chafe so acutely at the boundaries the app has erected. In contrast, Joaquin’s story demonstrates the discomfort of using an app that does impose these boundaries and his attempts at a deconstructionist approach when the existing parameters do not suit his needs. Eli’s story sits somewhere between Alexander and Joaquin’s, echoing Alexander’s concerns that a digital reminder of his period would be “a reminder that [their] body didn’t match [their] identity” but continuing to use it like Joaquin as a “basic calendar” to record and recognise their bodily patterns. What is unique about Eli’s story is that it acknowledges that not only does he use the app, the app uses *him* - it exerts influence by sending him a notification, forcibly placing him at the intersection of trans

embodied experience and the configured user. It's a subtle recognition of the symbiotic relationship between user and machine that other participants refer to as a point of notice *prior* to downloading the app; the only other participant to hint at how continued use of the app influences their behaviour is Alexander, who acknowledges his relationship with it in conjunction with his use of Twitter while "doing [his] business".

### **Story 7, as told by 'B'**

When I started transitioning I was given injections of "Sustanon" every 3 weeks. My periods stopped after a couple of months. The nurse was unwilling to teach me how to inject myself so I was having to visit the surgery on a very regular basis. Fed up, I asked my doctor if I could change to "Nebido", which is injected every 12 weeks. The doctor agreed and I was immediately switched. That's when my periods restarted. I downloaded a period tracker in order to see if I could make some kind of sense of the timings. I couldn't really. I found out later, from another doctor, that switching between types of testosterone should encompass a "loading phase" to allow the body to adjust. I didn't have a loading phase and so my body made its own adjustments...by bleeding again! The menstrual tracking app I chose was "Clue". I had seen a few trans people identify this particular app in forum discussions. There are many trans social circles I inhabit where I wouldn't feel comfortable asking about period tracking apps. Not because I experience discomfort. It doesn't bother me to talk about periods but I am very aware that

many trans people can find this talk "triggering". You don't know who feels that way until you make someone feel uncomfortable.

B's story sits at the crux of the multiple narratives I have mentioned - the conceptualisation of identity as a socially generated phenomenon, the medicalisation of transgender bodies, and the Clue's gender-neutral philosophy - to best illustrate the space at which 'transgender' meets 'menstruation'. B's hormonal treatments have skewed the rhythm of his cycle, placing him at odds with the configured user of other tracking apps. Clue, still a product of the heavily gendered society it emerged from, allows him to alter its services to his needs and record trans experience in a way other apps may not have the breadth to permit. What is especially interesting in B's story is how he conceptualises the experiences of other trans people in relation to tracking technology that tells us how these apps have become texts on which transgender and menstrual narratives can be read.

B writes that discussing periods among other trans people has the potential to be triggering or dysphoria-inducing, unintentionally invoking the continual debate surrounding trigger warnings. In her 2018 article on trigger warnings, Kendall Gerdes outlines a dissonance in higher education between students who request that sensitive material be forewarned and teachers who feel as though their educational content is being censored, thus creating an argumentative loop that does not discuss harm so much as it refuses to. Gerdes traces trigger warnings to their roots in trauma recovery, highlighting that their

transferral from community spaces to the classroom has allowed critics to misconstrue requests for sensitivity as politically motivated rather than the very real, very prescient desire to make education more accessible (9). When B mentions triggering among transgender communities, his framing of other trans people as vulnerable to potential emotional harm reflects a genuine desire to protect against inducing dysphoria, yet the self-conscious speech-marks he writes around the word triggering suggest that he identifies how trigger warnings have changed meaning to instead indicate a certain kind of politicised self.

This tension suggests that a transgender menstrual narrative is discomfoting at best and traumatising at worse. It's worth noting that while most of my participants did mention negative feelings towards menstruation, the act of speaking - or rather, writing - about it was not the issue. This was one of my own concerns coming into my study, the presumption that others wouldn't be so quick to talk about a subject laden in cultural taboo and personal dysphoria; however, the responses I received were open, comprehensive, and offered the potential for further discussion. If this apprehension exists at a corporate level, it could offer an alternative explanation as to why there are so few transgender-inclusive menstrual tracking apps: people are too afraid to ask trans people what they need. There's a disconnect between trans users and content creators, a divide that might just be able to be breached with a collaborative approach to the development of these technologies.

### 3.3: Collaboration

#### Story 8, as told by 'R'

I only started using a tracking app about three weeks ago. I was having a normal day, not on my period, and then I suddenly collapsed. I was experiencing sharp, visceral, blinding pain on the lower left side of my abdomen - similar to menstruation cramps, but a thousand times worse. I went to the ER. I was sent to get an ultrasound. A CT scan. Three different kinds of painkillers and two trips to my GP later, there were no answers. Just a brush off, 'keep an eye on it, there's nothing more we can do.' I started trying to find a cycle tracking app that same day - but every app I tried was so unnecessarily, dysphoria-inducingly gendered. Every app was just covered in flowers or cutesy little euphemisms about fertility and being a woman. I finally found one that wasn't gendered at all, and I felt a little better, and I've been using it to track any symptoms, regardless of whether it's uterus related or not, but constantly having this reminder that hey, your body will begin to rebel against you again, and you can't change that, has not been great.

Towards the end of his anti-memoir, Preciado calls on trans-feminist communities to open themselves to “an array of politics of physical experimentation and semiototechnology” that he terms “the principle of the auto-guinea pig” (2013, 348). It is a call to a collaborative model of scholarship, intensely physical in practice, that engages with the increasing technical materialization of Western society; “in order to transform conventional

frameworks of the ‘cultural intelligibility’ of human bodies”, he writes, “it is necessary to evolve towards a practice of voluntary autointoxication” (351). Although Preciado’s focus is on self-administered hormone treatment, specifically the ‘microfascism’ of pharmaceutically-dispensed testosterone gel (60), his summons to collective forms of knowledge can be expanded to the full cacophony of biotechnical devices that people utilise to elucidate their transgender identity.

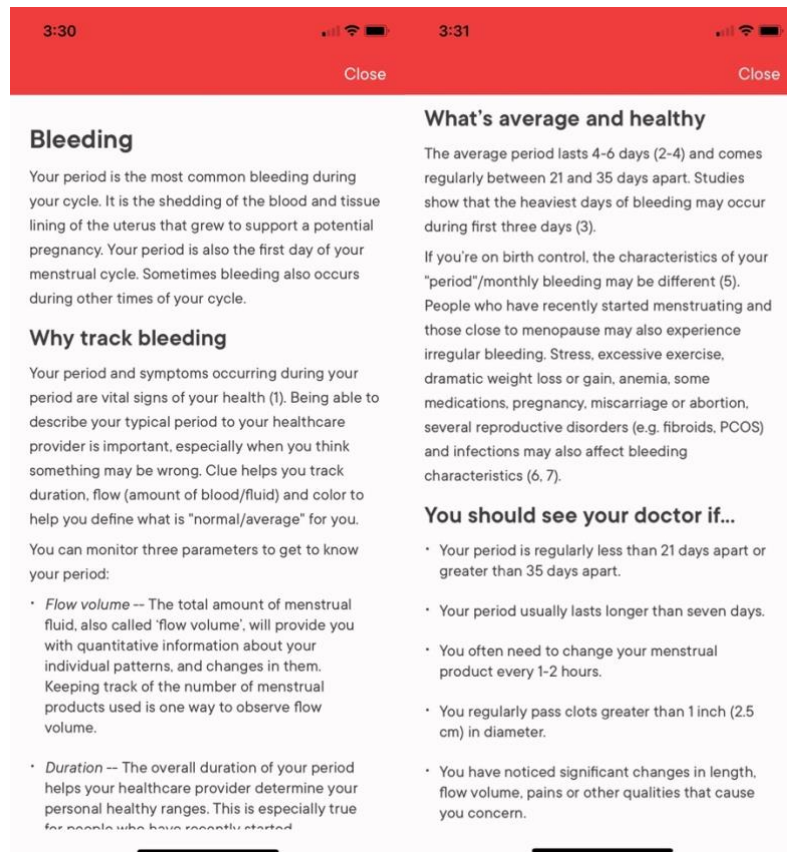
In his essay on the medical accounts of trans men, Latham (2017) identifies that clinicians approach trans patients with “clinical practices [that] propel a circular logic that occludes certain trans realities and forecloses particular trans possibilities” (40). He notes that for some trans patients, the clinical intervention they receive is “unhelpful, indeed painful, damaging, or traumatic” because clinicians rely on their existing assumptions “based on a (nontrans) paradigm of binary sex-gender normativity that does not reflect how many trans people experience their bodies and lives” (41). He notes that for most trans patients, a history of engagement with a mental health professional is required to access medical treatment, entangling physical diagnosis and mental assessment in a way that rarely occurs with other patients (53). With this compulsory mental evaluation, trans patients are made to feel “interrogated” or “treated like a moron” (56), delegitimised from their own experience without the confirmation of an external clinical party. Latham highlights that “psychiatric encounters are not mere formalities for trans people...[it] can be intrusive, costly, and is not necessarily *beneficial to*

*patients*” (57), forcing many to align themselves and their expectations for medical care along a paradigm they do not identify with. “Indeed,” he concludes, “if knowledges (and ontologies) are produced through practices....then our knowledge of trans lives is limited by the inadequacies of clinical practice” (57).

Like Preciado, Latham is not explicitly referring to technologies beyond hormone treatment, but his recognition of the limitations of clinical intervention can be applying to other kinds of trans technologies. In R’s story, clinical intervention proved ineffective in treating their menstrual pain, and it was only by self-tracking that they could gain some insight into how their body was operating. While R’s menstrual tracking does not quite achieve the radical, experimental punk extremes Preciado’s auto-guinea pig, they are still taking legitimising power out of the hands of clinicians and locating expertise within themselves. As the locus of treatment, R’s tracking app takes on a pseudo-diagnostic ability, identifying patterns and symptoms that would usually be the responsibility of a clinician.

What is truly collaborative about R’s practices is what goes on behind the scenes: the collection and analysis of data by corporations in conjunction with researchers. Although apps such as Clue do not sell users’ data to other corporations, they do provide anonymised information to research groups such as the Max Planck Society (researching mid-cycle psychological patterns), Columbia University (investigating mechanistic modelling in femtech), and

Stanford University (including two studies on disease prediction and computational health) (Druet 2018). These scientific collaborations aim to provide answers to the ‘unknowns’ of menstrual health, the aspects of menstruation long shrouded in ambiguity, taboo and simple lack of evidence. This process is not a one-sided transaction; benefits flow back to the user through Clue’s encyclopaedia, allowing them to access information about menstrual health that they, and thousands of others, have contributed to (see fig. 4).



**Figure 4:** *Clue’s in-app encyclopaedia. Screenshots taken by G. Pinter, 5<sup>th</sup> November 2020.*

However, the exact nature of collaboration in this instance is dubious. While the user agrees to the terms and conditions of downloading and using Clue, there is no way for them to opt out of sharing their anonymised data with Clue's research partners. The exact extent of Clue's data sharing is also unclear - their website does not disclose whether third-party companies can obtain this information after it has been shared with one of Clue's partners. As altruistic as Clue promotes itself to be, it is still a commercial enterprise that needs to generate revenue to survive; collaborating with paying partners, even in the name of scientific development, is not what Preciado would have envisioned as the genesis of collaborative knowledge.

#### **Story 9, as told by 'Kit'**

The first tracking app I used was quite infantile and very gendered - pink, flowers, gendered language, etc. It was also meant to be used for pregnancy planning, I think. Then my phone broke and I had to reinstall everything, and I wanted to get a new app. My cycle is super irregular and painful so I wanted to have evidence if I decided to go to the doctor. I looked around for a gender neutral app and managed to find a fairly non-gendered one that also tracks a load of other stuff like mood, medication, skin, energy levels.

I downloaded it and haven't looked back!

Kit offers an alternate way of using menstrual tracking; rather than being the locus of knowledge and experimentation, they use the app as a tool to elucidate their experiences to their doctor. In this way, the app acts as a translator,

communicating Kit's unique symptoms into blocks of data intelligible by a clinician. This could bridge the divide between trans patient and medical professional that Latham identifies; by having a device that renders highly subjective experience into streams of quantified information, these apps could actualise his conceptualisation of "patients [receiving] treatment based on their individual needs and circumstances rather than according to a limited definition of transexuality (that implies suffering and psychosocial difficulties)" (2017, 57).

From a Preciadian perspective, however, relinquishing information to clinicians and corporations defeats the purpose of community-based knowledge making. Drawing on the knowledge systems of Foucault, Deleuze and Guattari, and Burroughs, Preciado coins the term 'pharmacopornographic society' to define the intrinsic connection of pharmacology and pornography to the elucidation of power and control in digital society (2013, 77). Preciado notes that

In disciplinary society, technologies of subjectivization controlled the body externally like orthoarchitectural apparatuses, but in the pharmacopornographic society, *the technologies become part of the body*: they dissolve into it, becoming *somatechnics*. As a result, the body-power relationship becomes tautological: technopolitics takes on the form of the body and is incorporated.

(emphasis mine, 78)

As noted by Neff and Nafus, self-tracking is uniquely situated at the boundary between internalised biosensing and external surveillance, between the individual and the social (2016, 3). The key to contemporary self-tracking, they say, is the integration of selfhood and technology; data collection implicates the user's personal biography and their role in the continuous development of public health (49). By tracking their symptoms on a commercial app, Kit unknowingly contributes to the pharmacopornographic ouroboros that continuously exerts control over their understanding of their body, utilising their data to both define their own experience and the collective experiences that embody public health. Preciado warns that "the body no longer inhabits disciplinary spaces but is inhabited *by* them" (emphasis mine, 2013, 79); in short, we are the literal body politic.

### 3.4: ...*And Connecting*

#### **Story 10, as told by ‘S’**

My menstrual tracking app is a digital record I keep of facts about myself which I would rather forget. It feels both individual and descriptive of common experiences for many people with uteruses, which is difficult to reconcile with my own identity and gender. Last year, I visited the sexual health clinic in Woden. The free one, the [one] that’s kind of hard to find – hidden off the main hospital circuit behind much bigger and glossier looking buildings. I’m wearing a binder, maybe? The nurse is very friendly, chatting about my degree and plans for the summer. I am misgendered, which I expect. She struggles to parse how I have classified the sex I had with my trans ex-partner, which I expect. I struggle to, and ultimately don’t, tackle the problems I have with the formulation of the questions in the first place, which I also expect. We have a brief moment of connection over my menstrual tracking app, which I pull out to verify when the beginning of my last cycle was. She has never heard of such an app before. She’s what, maybe 35? She’s excited by the idea. I recommend it to her. I say I’ve learnt a lot about the rhythms of my body. She writes down the name of the app. “Clue.” I am thinking about this moment even months later, wondering about the connections between me and the sexual health clinic nurse. *We share the experience of a menstrual cycle, and what else?* My menstrual tracker app tells me often that many other people share the same physical experiences during their monthly hormonal cycle. The app never explicitly connects any of these things to gender. Over 26 days

plenty of things predictably wax and wane: my skin's oiliness, my horniness, the viscosity of my discharge. Knowing this makes me feel like my body is doing exactly "what it's supposed to do". I'm curious about what that is. *It feels undeniable and also out of my control. I wonder if the sexual health clinic nurse feels the same way.*

(emphasis mine.)

I want to break from routine here and include a little autoethnography, as I'm sure Preciado would appreciate. Like many of my participants, I came to this study as a non-binary person who menstruates and uses a tracking app to identify patterns in my cycle. I didn't consider myself a cog in the pharmacopornographic wheel, nor was I aware of the complex history of trans medicalisation that lay beneath my own practices. Had I conducted this study by the precise lines of Haug et al., I would have presented these theoretical links to my participants in a follow-up interview and asked them, *is that how you see it too? Do you see yourself as a politicised being located at the tension points between configuration and self-experimentation, offering an alternate view to how we can understand the user-machine dynamic?*

If I were asking myself this all those months ago, my answer would be simple: *no*.

But it was S's story that changed my mind. Flick back a few pages, reread what they wrote:

The nurse is very friendly, chatting about my degree and plans for the summer. I am misgendered, which I expect. She struggles to parse how I have classified the sex I had with my trans ex-partner, which I expect. I struggle to, and ultimately don't, tackle the problems I have with the formulation of the questions in the first place, which I also expect.

S identifies the precise clinical disconnection Latham write about, the inability for medical professionals to recognise the individual experiences of transgender patients. It's a struggle in language, meaning, and identity; the nurse doesn't understand the patient, and the patient doesn't understand the questions they are being asked. Their collaboration is an exquisite corpse of a thing, neither completely viewing the other's cartography before mapping themselves onto the canvas that lies between them.

Then, something changes: *we have a brief moment of connection over my menstrual tracking app*. It's something the nurse hasn't heard of before, but, like in Kit's story, it becomes the lightning rod through which the spark of understanding is conducted. I can visualise it as I use my own app, inputting data points that condense years' worth of subjective experience into chunks of code, easily translated by a doctor who deals in numbers and percentages. I can see myself in S's place, showing a nurse the history of my menstrual cycle, all the way back to 2015 when I first downloaded the app - it allows me, a twenty-something trans student who doesn't know the first thing about the mechanics

of the human body, to tell a medical professional that *here I am, I exist, here are my experiences in a language you can understand*.

Menstrual tracking technologies are, at their core, collaborative ways of understanding individual bodies that have existed for so long without a heterogeneous set of knowledges. As Roberts et al. explain, “it is impossible to find a biosensor in isolation, [because] like tools or bodies, they always belong severally to a collective or an assemblage” (2019, 19); tracking technologies, whether internal or external, self-operated or remotely controlled, exist in a continuously expanding self-referential web, enfolding upon each other to create new ways of being from old materials.

To understand how we can practically utilise this multitudinous approach, I draw on Donna Haraway’s cat’s cradle metaphor and its elucidation of a potential sociotechnical dynamic. First published in the 1994 volume of *Das Argument* – the same journal in which Haug et al. developed memory work – Haraway discusses a way of viewing technoscience and cultural studies as an interconnected game of cat’s cradle, treads of each strung between society’s fingers and creating “states of emergency in what counts as ‘normal’” (1994, 60) when they overlap. Rather than a series of configurations, Haraway’s cradle *refigures* the positivist shapes of technoscience and the material-semiotic fleshiness of cultural studies into “implosion zones” (62), spaces where boundaries are crossed and categories are delineated. Haraway’s analysis harkens to ANT in its recognition of both human and non-human

actors interacting on various symbolic and physical levels, each contributing to the variety of sociotechnical encounters that have proliferated in the digital age. She writes that her “intention is that readers will pick up the patterns, remember what others have learned how to do, invent promising knots, and suggest other figures that will make us swerve from the established disorder of finished, deadly worlds” (66) - in other words, refigure what has been configured.

Viewing transgender menstrual tracking practices from a cat’s cradle approach allows all the understandings I have discussed to be true: from the baked values in the configured user to its Derridian deconstruction; from interpretative flexibility to boundary-widening Clue; from a long history of pathologisation to Giddens’s reflexive self-identification matrix; from Alexander to Joaquin, Matilda to Elle, Jason to Eli, B to R, Kit to S, S to me and back to Alexander. Cat’s cradle opens itself to transgender experience, the ability to change; Haraway writes that “one does not ‘win’ at cat’s cradle; the goal is more interesting and open-ended than that” (70), just as there is no definitive way to cage the mercurial beast that is gender.

From a cat’s cradle understanding of transgender identity and embodied experience, S’s “brief moment of connection” with the sexual health clinic nurse makes sense – it is a moment of two threads crossing, a unique pattern that combines S’s experience, their understanding of the nurse’s experience, and the nurse herself. It is a stunningly clear articulation of Cooley’s looking

glass (1983), the process through which an individual comes to know themselves in the eyes of others. “There is no sense of ‘I,’” Cooley wrote, “as in pride or shame, without its correlative sense of you, or he, or they,” (158); conversely, there is no S without the nurse, no S without their tracking app, no S without the cat’s cradle of materials and semiotics that surround us as we march inexorably through daily life. It’s what Haug et al. meant when they chose to live historically: it was to take these fragments of mundane experience and reconstruct the mosaic by which they were trained to enter society (1999, 58). It is in the refiguring of these experiences, fitting them into a broader whole, that we can see these disparate fleeting moments of recognition for what they really are: a network that branches into the ether, a web spun from the tenants of individual experience, a matrix of interpretations coding and recoding events like a snake shedding its skin each winter – or simply a cat’s cradle, the game of connection that never ends.

## Chapter 4: Concluding

Pressed between the closing pages of *Female Sexualisation* is a promise. “We aim to develop ways of living collectively, and thus to escape individual isolation,” Haug and her compatriots vow; “our aim is not to take the life out of life, nor to imprison the social sphere in an area constituted specifically for it... Our aim is to change the world lovingly.” (1999, 282-3). And love they did: the book stands as a testament to the relationships between the women of the West German Socialist Association, the memories they built homes from and the streets that connected them. With their calendars marked with the forecast of a nuclear winter, they offered a hand to the woman sitting beside them and said, *I’m here with you despite it all. At the end of all things, we are together.*

It wasn’t the end – rather, it was a beginning. The work that Haug et al. did laid the path for feminist qualitative research, bringing women’s experiences to the forefront of social inquiry and positioning themselves as the arbiters of interpretation. Their aim was to “reach a point at which we no longer see ourselves through the eyes of others” (39), to take control of the narratives that had for so long shaped the way they moved through this world. *Frauenformen* sought to understand the present through its past in a hope to build a future its participants could see themselves in. Almost four decades later, transgender studies stands at a similar precipice, prepared to leap into the

sociological mainstream – and here I am, ready to give it a push with this thesis.

My research spans the inalienable gap of sociotechnical studies and queer theory, seeking answers as to how transgender users interact with digital menstrual tracking devices. But it has ended up asking more than that; informed by Haug et al.'s legacy of connection, my research evolved to question how identity itself comes into being, what knowledges those identities are situated within, and how we can understand ourselves in conjunction with a wide, complicated network of actors and reactors, humans and nonhumans, users and machines. My research has built on the work of J. R. Latham and Paul B. Preciado to place queer identities and practices at the zenith of sociotechnical studies, examining the unique, idiosyncratic, very *queer* ways our stories can influence the development of social theory as it moves into the digitized future. My research has given these stories the space on the page they've been waiting to be printed on, and the opportunity to be read as the rich, complex narratives they have always been.

Above all, this thesis has done what it always intended to do, no matter how often it has changed shape and tone across the year. It has taken your hand, reader, and said: *I'm here with you because of it all. At the start of all things, we are together.*

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