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Talking cervixes: How times materialise during the first stage of labour

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Abstract

The clock occupies a prominent position in many feminist and midwifery critiques of the medicalisation of labour and birth. Concern has long focused on the production of standardised 'progress' during labour via the expectation that once in 'established' labour, birthing people's cervixes should dilate at a particular rate, measurable in centimetres and clock time. In this article we draw on 37 audio- or video-recordings of women labouring in two UK midwife-led units in NHS hospital settings to develop a more nuanced critique of the way in which times materialise during labour. Mobilising insights from literature that approaches time as relational we suggest that it is helpful to explore the making of times during labour as multiple, uncertain and open-ended. This moves analysis of time during labour and birth beyond concern with particular forms of time (such as the clock or the body) towards understanding *how* times are constituted through interactions (for example, between midwives, cervixes, clocks, people in labour and their birth partners), and what they *do*.

KEYWORDS
birth, body, midwifery, time

INTRODUCTION: TIMING LABOUR AND BIRTH

The sociology of health and illness has long recognised time as a significant element of the workings of biomedical practice (e.g. Armstrong, 1985; Frankenberg, 1992; Pedersen et al., 2021; Williams et al., 2021; Zerubavel, 1979). Work within the sociology of reproduction has illustrated the gains to be made by critically interrogating how normative temporalities are interwoven with understandings and experiences of reproduction (e.g. Beynon-Jones, 2012; Browne, 2022; Franklin, 1991; van der Sijpt, 2012). Concerns with medical models of time have been particularly pronounced within feminist and midwifery critiques of the medicalisation of birth, and its pathologisation of bodies in labour (e.g. Downe & Dykes, 2009; Kahn, 1989; Martin, 1989; Oakley, 1979; Rothman, 1982; Simonds, 2002; Thomas, 1992; Walsh, 2009). In this article, we develop this literature by illustrating precisely *how* times are made through interactions during the first stage of labour in UK midwife-led care, and what they *do*. Our analysis mobilises insights from a growing field of social science scholarship that explores times as the uncertain and ongoing outcome of socio-material relations (e.g. Bastian et al., 2020; Beynon-Jones, 2017; Davies, 1994; Grabham, 2012, 2016; McCoy, 2009; Mulla, 2014; Sharma, 2014). We deliberately make use of the plural—*times*—in order to emphasise their 'multiplicity, simultaneity and mutual implication' (Adam, 1995, p. 6).

Obstetric models of birth divide labour into a series of sequential stages to be measured and monitored (Walsh, 2010a). The first stage contains a latent phase, during which the cervix is not expected to open in a linear fashion in relation to the clock. Once labour becomes defined as 'established', however, cervical dilation is expected at a particular rate of 2 cm every 4 h for the remainder of the first stage, until full dilation at 10 cm and the second, pushing stage of labour. In the UK, National Institute for Health and Care Excellence (NICE) guidelines (2014, Section 1.12.7) recommend that people in labour should be offered vaginal examinations every 4 h in established labour, with various forms of intervention suggested if someone is diagnosed with 'delay' (Sections 1.12.13–23). As Scamell and Stewart (2014) note, these guidelines form part of the broader clinical governance of birth in the UK, which (like many medicalised birthing cultures) emphasises the standardised monitoring of time during labour as a mechanism to predict and avoid risks to the baby/foetus and birthing person.

Feminist and midwifery critiques suggest that the biomedical model of birth produces a linear clock-based temporality that leaves little space for individual variability and is often at odds with bodily rhythms and experiences—leading to bodily alienation as women become subject to clinical interventions to make labour stay 'on track' (Fox, 1989; Martin, 1989; McCourt, 2009; Pizzini, 1992; Simonds, 2002). Such critiques are connected to broader theorisations of bodies and time in capitalist societies. For example, Adam (1995) illustrates how linear clock time is a mode of 'time running on and out' (p. 52) that governs everyday life and work but is frequently at odds with the contingent processes and time-generating rhythms of 'body time'. Existing scholarship characterises an emphasis on body time as central to midwife-led, as opposed to obstetric practice, with the former approaching birth as a physiologically normal process, which a majority of women can accomplish within their own—variable—timescales (Bryson & Deery, 2010; Fox, 1989; Simonds, 2002; Walsh, 2009). This way of working can be understood as oriented around 'process time', a concept introduced by Davies (1994, p. 281) to convey what it means to let 'the task at hand, or the perceived needs of the receivers of care, rather than the clock, determine the temporal relation'.

Critiques of the disempowerment of birthing women through biomedical practice often reproduce gendered dualisms via concepts of medical/natural, pathological/normal,

obstetrician/midwife and clock/body (or process) time (Annandale & Clark, 1996; Brubaker & Dillaway, 2008; Chadwick, 2018; McKinnon, 2016; Walsh, 2010b). As Chadwick (2018) highlights, the labouring body of 'natural' birth and that of medicalised birth are both based on essentialist ideas of a singular biological body, which is either intrinsically good or poor at completing a process. She argues that such characterisations leave bodies themselves unexplored, making it difficult to grapple with birthing people's fleshy, variable, experiences. Mobilising theories of bodies as multiple, and as materialising through relational practices (e.g. Mol, 2002), Chadwick suggests that the conceptualisation of birthing bodies requires a shift in focus:

> Birthing bodies are not stable givens but uncertain zones that materialize and act in relation to an entanglement of crosscutting forces. There is no singular birthing body [...] Multiple birthing bodies become—materialize—through sociomaterial enactments and shifting ontological, epistemological and political framings.
>
> (Chadwick, 2018, p. 3)

Relatedly, McKinnon (2016, 2021) suggests that a movement away from the polarisation of birth as either natural/pathological is facilitated by theorising birth as a variable socio-material assemblage of multiple humans and non-humans (e.g. birthing people, health professionals, hormones, beds and clocks). Such arguments build on Akrich and Pasveer's (2004) exploration of how different forms of embodiment are produced through varying birthing practices, involving both human and non-human agencies. They illustrate that the objectification of the 'body-in-labour' (for example, through its measurement) is not inherently problematic for women. Rather, what matters is whether women are able to move back and forth between this objectified body and a sense of an 'embodied self', with bodily alienation resulting when this reflexive work is not possible (Akrich & Pasveer, 2004).

In this article, we suggest that explorations of how birth is made multiple through socio-material practices can productively be extended through a focus on how a multiplicity of *time*s materialise in the labour room. This is important given the centrality of time, and clocks, within people's own accounts of their experiences of labour (Chadwick, 2018; Maher, 2008; White, 2016). For example, in her interview-based study of South African women's birthing experiences, Chadwick illustrates how the biomedical narrative of 'clockwork birth', widely disseminated in popular culture, is part of women's birth stories: 'According to this obstetric script, 'normal' labour proceeds in a series of phases and follows a predictable and measurable trajectory' (2018, p. 52). Chadwick illustrates that while the clockwork script erases the 'fleshiness' of the body from birth narratives, some women (particularly those in white, middle-class home birth spaces) are able to draw on clockwork birth to establish 'ambiguous forms of agency' (p. 59). Clockwork markers can be used to *make sense of* the unfamiliar bodily process of labour, enabling decision-making, for example, about when to call a midwife (Chadwick, 2018). Chadwick's theorisation of a 'clockwork' narrative of birth time is analytically helpful for two reasons. First, it highlights that this widely culturally disseminated version of time in labour is *part* of the process of having and being a birthing body (see also Adam, 1995), and can be re-appropriated in ways that do not automatically conflict with birthing people's agency (see also, Maher, 2008; White, 2016). Second, we suggest that it captures a key, previously underexplored element of this model, which rests not simply upon the clock, but also on the ways that connections are made (by the various actors involved in birth) *between* the 'work' (or action) of bodies and the linear passage of clock time.

McKinnon (2021) considers the clock as a participant during birth and reflects on how its actions can be resisted. However, a focus on the clock as the key actor relevant to considerations

of time, paradoxically, leaves the making of time itself relatively unexplored. In this article, we develop analyses of birth by attending to precisely *how* relations between times and bodies are constituted in the first stage of labour, and what this accomplishes. In doing so, we take inspiration from scholarship concerning the relational making of times in other contexts. For example, Davies (1994) illustrates how, in the context of childcare, clock time and process time are interwoven, with actions conducted in relation to clock time sometimes facilitating work *as* process time. Relatedly, McCoy (2009) illustrates how the temporal phenomenon of 'adherence' to drug regimens for HIV requires complex work in order to coordinate multiple forms of time (e.g. clocks, medication schedules, internal sensations of time in relation to rhythms of daily life). In line with such approaches, we suggest that *neither* 'body time', nor 'clockwork time' are separable from the contexts in which they are made through practice. By exploring recordings of interactions during labour in UK NHS midwife-led units, we present the detailed work involved in constituting bodies with times during birth. Attending to this work is important, we suggest, as a basis for a more focused critical engagement with times during labour. We illustrate the work involved in making and interweaving 'clockwork time' and 'body time' and that these are variously mobilised by midwives to accomplish actions in the project of moving through birth. Making these practices visible, we suggest, allows exploration of situations in which women and birthing people become involved in, or excluded from, this project.

RECORDING THE MAKING OF TIMES AND BIRTHING BODIES

Our study audio- or video-recorded 37 women's[1] labours, with their written consent, across two UK midwife-led units to explore how interactions unfolded during labour. While we aimed to recruit a sample that included birthing people from a range of ethnic groups, a significant limitation is that 36 of the women whose labours were recorded were white (although, of varied socioeconomic status). We know that research midwives approached and consented minoritised ethnic women at both study sites, albeit in smaller numbers than white women, broadly reflecting birthing populations at each site (see Annandale et al., 2022). Given concerns about the categorisation of minoritised ethnic women/birthing people's bodies as elevated sites of risk within UK maternity services (see for example, Birthrights, 2022), it is possible that they may have been less likely, in comparison to white women, to be/remain eligible for midwife-led care. As a white research team, we have subsequently reflected that—particularly given this context—greater involvement of minoritised ethnic women/birthing people's voices was needed from the outset of the research in order to maximise the possibility of their inclusion.

The study was granted approval by the National Research Ethics Service Committee for Yorkshire and the Humber (South Yorkshire) in March 2017—REC reference 17/YH/0102. In total, the practice of 63 individual midwives was recorded, with several women's labours involving multiple midwives and/or shift changes. Where possible, everyone in the recordings was asked for consent to take part prior to labour. Where a birthing person had given consent, but consent could not subsequently be established for another individual who appeared in the recording (e.g. health professional or unexpected birth partner), the latter's data was removed. The camera was attached to a trolley, and when a consented woman in labour arrived at the unit, midwives brought the camera into the labour room. The woman in labour was in control of where the camera was positioned, when it was turned on/off and whether it recorded video or audio (although in the event of emergency, or transfer to obstetric-led care, the camera was turned off). The research team was not present. Cameras recorded to a secure hard drive (stored in a locked room) via the hospital intranet.

A full account of the project methodology is provided in Annandale et al. (2022). However, in an article concerned with the socio-material workings of labour and birth, it seems important to acknowledge the complex *making* of the recordings. The possibility of eligible consented women, birth partners, midwives and working cameras all being in the right place at the right time was completely contingent on preparatory and ongoing relational work conducted by collaborating midwives.

It is possible that the presence of the camera led to self-censorship by participants. However, the activities participants were engaged in still needed to be interactively accomplished in normative ways; otherwise, intersubjectivity (and action) would break down. Moreover, although we do see brief moments when participants orient to the camera, recordings often took place over several hours, and its presence seemed to be forgotten. Finally, patterns across the actions of multiple midwives illustrate that the practices we analysed are not idiosyncratic.

The broader project (Annandale et al., 2022) used conversation analysis (CA) to explore how women were—or were not—invited into decision-making during labour through the talk that takes place. The current article moves away from CA to instead explore how relations between bodies and times are produced in interactions between midwives, women in labour and their birth partners, as well as multiple material participants in birth such as clocks and cervixes. To facilitate this, the transcripts of the recordings were thematically coded in NVivo 12, with a focus on how times were present in interactions. This analysis illustrated multiple forms of work that midwives engage in to manage relations between bodies and times. We draw on the transcripts[2] of our recordings to exemplify the key types of work that were present in the recordings: bodies being decoupled from clocks, bodies and clocks existing in relations of uncertainty and bodies becoming defined as non-clockwork bodies.

There is clearly a tension between our stated goal of exploring how times are made, and our demarcation of this article as an analysis of 'the first stage of labour'. To clarify, we do not intend to reify this medico-temporal category but instead use it to signal that our analysis centred on interactions in which midwives, women, and their birth partners are concerned with the cervix as a body part that needs to dilate in order for labour to progress. The complex work involved in the transition from a (primary) concern with cervical dilation to the birth of the baby through pushing (labelled 'the second stage' in the medical model), while sharing many parallels in terms of relations between bodies and times, requires in-depth exploration in its own right.

FINDINGS

Across the recordings, it is clear that all parties are heavily invested in trying to locate labouring bodies in clockwork time. Simultaneously, the attention paid to this question does not, in practice, automatically produce a linear clock time that is running out. In the analysis that follows, we highlight how times are produced and entangled in the labour room.

DECOUPLING LABOUR FROM THE CLOCK: SUPPORTING BODIES TO DO THINGS 'WHEN THEY ARE READY'

As might be predicted by existing studies (Chadwick, 2018; Maher, 2008; White, 2016), women in labour and their birth partners frequently expressed an interest in progress. Resonating with Maher's (2008) findings (based on narrative interviews with women in Australia), this was often

formulated as a desire for the tiring and painful process of birth to move forwards, or to end, rather than being framed specifically as a concern with clockwork time. However, explicit orientations to clockwork time were evident, particularly when women were deemed to be in early labour. In a study of birthing practices in Australia and New Zealand (McKinnon, 2021), midwives reported sometimes removing or covering clocks to ameliorate such concerns. While we did not observe such literal obliteration of clockwork time, our recordings show that midwives de-coupled clocks and bodies via other means. The following illustrative extract is taken from Elise's labour, which had been ongoing for 2 days (at home prior to admission during which time she attended hospital and was sent home more than once) with little sign of cervical dilation:

Extract 1: (Elise, VIP02)

***Elise*:** It's just taking such a long time
***M4*:** But it's first babies, and this part of labour can take quite a long time. Once you get into active labour, hopefully then it'll be a bit quicker. Some people say that this bit's the hardest bit, because you can't seem to see any progress. Things are happening, it's just that you can't visualise them. But things are happening. This bit's probably her turning round as well
***Elise*:** Yeah, I think M3 said that when she was feeling her, she's sideways
***M4*:** Yeah, yeah, so this is probably her turning round. This is what your contractions are doing, they're turning her around. Once she's in a good position the head will put more pressure on the cervix and start dilating.

Here, the midwife works to normalise the length of Elise's labour, whilst also validating the fact that it has been long and hard (see also Scamell (2011) for midwives' positive assessments in the absence of 'progress'). The midwife repositions Elise's body as engaged in critical and important preparatory work: Progress may not be visible, but Elise's contractions are nonetheless helping to move her baby into the correct position. Elise's current pain and tiredness are thus part of a purposeful process. Rather than being long and *un-ending*, her experience is connected to a positive, anticipatable clockwork future of predictable dilation.

Descriptions of the birthing body as intelligible in terms of cervical measurement were ubiquitous in our recordings and used by women to refer to themselves ('I'm X cm'), by birth partners when reporting to family members ('she's X cm'), as well as by midwives ('you're X cm'). Birth time as measurable and lived through centimetres of cervical dilation was thus a temporality that birthing women articulated and sought out. Indeed, they sometimes treated the cervix as a predictive tool to calculate how long might be 'left'. In response, particularly in cases where labour was not yet deemed 'established', midwives often emphasised the *non-linearity* of the labouring body's processes, and the ways the work of labour could exceed and evade capture using clockwork measurements. This is illustrated in Extract 2, which follows a conversation in which the labouring woman—Gabi—had already indicated a concern with progress:

Extract 2 (Gabi, VIP10)

***Gabi*:** So how many hours is it? What time is it now? Two o'clock
***M1*:** So, somebody will examine you, whoever takes over from me, six o'clock
***Gabi*:** So, it's taken 20 hours to get to five centimetres
***M1*:** Yeah, but it's not just five centimetres. That long cervix has gone
***Gabi*:** Yeah
***M1*:** So, all of that work
***Gabi*:** Yeah

***M1*:** Your body's done a lot of work
***Gabi*:** Hopefully I won't take another 20 hours
***M1*:** No, no

In Extract 2, Gabi expresses frustration and concern with her cervix. She attempts to fit it into (a version of) the biomedical model of clockwork progress in labour, calculating that it has taken 20 h to dilate 5 cm, and worrying that it will thus take another 20 h to reach 10 cm. Her midwife tries to alter the relations between Gabi and her cervix, emphasising how her lengthy labouring has achieved more than simply expanding her cervix's measurable dilation. The positioning of the cervix as a site of intense and unpredictable work in early labour was repeated across the dataset, where midwives explained that the cervix must first be radically changed from a long body part to a short one, before the more visible, linear work of dilation can begin.

Midwives frequently introduced the unpredictable temporalities of labouring bodies in response to women's (and sometimes, birth partners') queries about an apparent lack of midwifery intervention to accelerate progress. In the following interaction, Nina and her midwife had been discussing her bodily sensations, and the fact that she might have been starting to feel the urge to push, when Nina asks:

Extract 3 (Nina, VIP17)

***Nina*:** Is it weird that my waters haven't gone?
***M1*:** No, no. They might just go really close to delivery. I mean there has been occasions babies have been born in waters. But you know, I wouldn't, I wouldn't want to interfere, there's no need for us to do anything about that, they'll go when they're ready

The midwife treats Nina's question as a potential request to intervene and break her waters (i.e., conduct an amniotomy). She emphasises that the status of Nina's waters is normal, that they break at unpredictable times, and that it is best to leave them to follow their own, internally coherent timescale ('they'll go when they're ready').

However, the interaction that takes place in the following extract underscores that the time available for the labouring body to complete its individually variable processes is not infinite. Rather, it depends on the location of a labouring woman's progress in clockwork time:

Extract 4 (Faith, VIP15)

***M1*:** So, I'm wondering if you're still kind of teetering on that verge of becoming established, but not quite. [...] Now I mean you were, in terms of like being established, we were due another examination about now, but it's up to you. If you want to wait and then see how you get on with your contractions, we can do. [...] I mean I'll be honest with you, I'd be very surprised if you've dilated any more, given that your contractions have gone off, because usually, for the cervix to be dilating you need kind of regular strongish contractions. So, I'm not saying that nothing's happened, because I don't know, but I would be highly surprised if there'd been much change to be honest at the minute
***Faith*:** (indecipherable)
***M1*:** Because these contractions have gone off a bit, probably not. Just because if your contractions were still coming, and nothing were happening, then yeah, we could. But the thing is, what we don't want to do is start interfering too much, because once we start doing things it's what we call a cascade of interventions. We do one thing, and it leads to another, which leads to another thing which- and really, we want to try and keep as relaxed and low

as risk as possible for you [...] So if you were contracting strongly, kind of every couple of minutes, and there's still no change, then we would look to break your waters and things. But at the minute, because they've gone off a bit, perhaps just give you a bit more time, just for your body to do it itself really, alright?

The midwife describes Faith as 'teetering on the verge of becoming established'. If she was fully established, she suggests, she would be due for a routine vaginal examination. However, there are signs that this is not the case, which makes the measurement of the cervix a less useful, and even unnecessary source of information. While we cannot hear what Faith says in response, from what the midwife says next it seems likely that she asks about whether breaking her waters would help her to progress. This illustrates Faith's concern (which she has previously explicitly articulated) about not moving forwards in her labour. The midwife responds by re-iterating that the rhythms of Faith's body indicate that she is not yet in established labour so would not be expected to progress in linear clock time at a predictable rate. Additionally, she emphasises the risks that can be generated by attempting to speed up the body's own rhythms, and that it is better for the 'body to do it itself'.

The contrasts drawn throughout the midwife's talk, between Faith's body as not yet in established labour and a body in established labour, illustrates how clockwork time is *entangled* with the possibility of the 'body doing it itself'. Time is given to Faith's body *because* her body has been normatively located as *preceding* the parameters of clockwork birth; her labour is not deemed established and so it is Faith's expectations, rather than the pace of her labour, that must be adjusted. Simultaneously, the contingency of this situation is made clear; if Faith's contractions were behaving differently in relation to the clock (stronger, more frequent) then intervention might be necessary.

It is important to note that, while midwives were often engaged in trying to reorient women in early labour away from the clock and into different relations with their bodies, they were also responsive to women's expressed desire to move forwards in their labours. Alongside emphasising the functioning of women's bodies, midwives also frequently emphasised how, as successful labourers, women themselves could engage in relatively simple actions to encourage their bodies to advance through labour. Most commonly, midwives explained how women could change position to alter the position of the baby in relation to the cervix, encouraging dilation. For example, following Extract 4, Faith's midwife suggests that Faith moves to a different part of the hospital where she could 'have a wander up and down'. In this sense, women's (and perhaps also institutional) goals of moving forwards in early labour could be kept present alongside an insistence on the internal functioning of labouring bodies.

In summary, our data show that midwives frequently work with and promote an understanding of labouring bodies as individually variable and capable of completing tasks within their own timeframes. This version of the body emerged most regularly through interactions with women in early labour (although it did take place elsewhere, for example, VIP17, Extract 3), when midwives were responding to, and challenging, women's clockwork frames of reference for their labouring bodies. Body time does not simply pre-exist these interactions; it is made *through* them and does particular forms of work for midwives: offering reassurance about the normality of labouring bodies, managing women's expectations and also warding off women's requests and suggestions that midwives might intervene to accelerate labour when this would be clinically inappropriate. Crucially, then, while bound up with the supportive care of women in labour, the promotion of faith in the capacity of bodies to do things 'when they are ready' should still be understood as part of the institutional management of labour and birth.

THE UNCERTAINTIES OF BODY-CLOCKS: NEGOTIATING PROGRESS

Within the biomedical model of progress in labour, the cervix is positioned as an object whose measurement using health professionals' fingers can directly locate the labouring body in relation to the clock. Resonating with this framing, in our recordings, vaginal examination was often treated by midwives (and women/birth partners) as a route to gauging progress. However, our data show that the work of coupling clocks and bodies is not always as straightforward as simply measuring centimetres of cervix.

One issue that emerged several times is that the utility of the cervix as a time-measurer requires the establishment of a starting point, which may itself be in doubt. In other words, the diagnosis of labour as 'established' is first required for the cervix to become coupled to the clock. As both Roberts (2019) and Chadwick (2018) describe, the complexities of accurately counting the 'beginning' of labour weigh heavily, and unevenly, upon birthing people who know that this can have significant implications for their access to hospitals and to pain relief. Counting labour as established (or not) also has significant implications for the ways progress during labour is gauged, and whether or not intervention is recommended to speed it up. Scamell and Stewart (2014) show that midwives are acutely aware of this and may find creative ways to delay the starting of a clock so as to avoid surveillance and the potential for interventions (see also Annandale, 1988; Newnham et al., 2017). What our data add to this discussion is the ways that non-human agencies can be *part of* the complexities and contingencies of 'establishing' labour. This is highlighted by the midwife in the following interaction:

Extract 5 (Brenna, VIP14)

> ***M2*:** You are shattered, doesn't help, does it. I spoke to our labour ward coordinator, (Person), and I told her the situation. It's hard to make the right decision. I think you've got to six centimetres, things are going to happen, but they've not happened yet, and how long do you leave it. [...] And what we'd normally do is, we'd like sort of two... Once you're in proper labour, sort of minimum progress is about two centimetres every four hours. So obviously when I came on, I didn't think you were in really cracking labour, and you'd gone a centimetre. So that's actually quite good considering that you weren't in really established labour. Now you're a six. You're definitely not doing nothing at six centimetres [...] So I think we probably ought to think that things are happening. So, we want to perhaps encourage the contractions a bit more, maybe by moving around a bit more. I know it's really hard when you're tired, and that might help encourage the contractions [...] And I think probably we ought to just check after two hours rather than four, see things are going the right way. Maybe you're still at six we might consider breaking the waters, which will speed things up a little bit. How do you feel about that?
> ***Brenna*:** ( ) some side effects
> ***M2*:** It may make the contractions come a little bit stronger, bit more painful

In this interaction, Brenna's cervix/Brenna herself ('you're a six') emerge as an object of uncertainty, which cannot be easily positioned in relation to clockwork time, making it hard to know what to do next. Indeed, the midwife seeks input from a colleague in determining a course of action. Brenna's cervix is both doing 'something'—it has changed from the previous measurement of 5 cm but is not quite doing what might be expected of 'proper labour'. Resonating with the previous section, even while the midwife is raising some doubt about Brenna's normative progression in clock time, she seeks to reassure her about the functionality of her body ('things

are happening'). The uncertainty created around whether and when labour has been established is sufficient to allow more time before intervention needs to be considered. The midwife asks Brenna how she would feel about this, which seems to provide an opportunity to discuss what the consequences of breaking her waters would be. Ultimately, Brenna's waters break spontaneously shortly after this exchange.

As well as uncertainties around when to begin counting and tracking expectations about the cervix, in some situations it was clear that assessing cervical dilation could sometimes contradict or confound other methods of connecting clocks and bodies. In the extract below, the midwife acknowledges this conflict in reporting the results of Jasmine's vaginal examination:

Extract 6 (Jasmine, VIP27)

M3: I would probably even say three to four, it stretches to a four. It's nice soft and thin though, and it's very central, so it's moved from being at the back and it's nice and central [...] OK, so still about four.
Jasmine: Yeah
M3: OK? I mean if you want you can walk around a bit more,
Jasmine: Mmhm
M3: See if that will get things going. I don't know whether the contractions have been like this, because I think they're certainly really good contractions.
Jasmine: Mmhm
M3: Um I don't know if they've been like this all the while, feel like they've come on
Mother: Yeah
M3: Quite shortly
Mother: No, they've been...
[...]:
M3: This regular as well
Mother: Yeah
M3: That's good, so having really good strong contractions there
Jasmine: Yeah
M3: So tch I'll get you to walk around a bit more. I mean your waters have already broken. If they haven't, I would have said obviously I could break your waters.
Jasmine: Yeah
M3: I'll get you to walk around a bit more, and then we'll reassess again,
Jasmine: Okay
M3: And then see where we are. Hopefully that should... Because really with these contractions
Mother: Yeah
M3: we'd be expecting some movement.

Here, the temporality of Jasmine's contractions (at regular intervals in clock time, and strong) emerge as at odds with little change in cervical dilation. Together, the two forms of measuring time (combined with the fact that Jasmine's waters have already broken) produce surprise and uncertainty. In the short term, the midwife suggests that Jasmine ambulates to help her cervical dilation align with her regular strong contractions.

NON-CLOCKWORK BODIES AND THE DISAPPEARANCE OF DECISION-MAKING SUBJECTS

Through the above examples, we have illustrated the uncertainty that can attend attempts to couple labouring bodies to clocks. However, bodily signs and processes—while often hard to read—are still treated as the basis for what should happen next. Bodies may be temporarily difficult to locate in relation to the clock, but the effort to map clocks and bodies is not abandoned; it is more typically paused while the body continues to be observed. This is the case in Jasmine's labour in which, as we saw above, the apparent contradiction between the temporalities of her contractions and the behaviour of her cervix was initially treated as confusing. When she is later reexamined according to the four hourly schedule, her cervix remains the same and the midwife is also able to establish that her baby is lying back-to-back. Collectively, this information renders Jasmine's body legible in clock time: she is not progressing due to the position of her baby. Accordingly, labour is now approached as having deviated from its 'clockwork' schedule, with decisions flowing quite quickly, and automatically from this:

Extract 7 (Jasmine, VIP27)

***M3*:** Four. You're still the same, (indecipherable), but I have seen, baby looks like he's laid into your back a little bit. [discussion of what this means] So obviously because there's not been any progress for a while, I need to let the doctors...
***Mother*:** Yeah
***M3*:** know. They might want to put her on a drip. [Following some further discussion, midwife exits—birth partners discuss lack of progress]
***((Midwife returns))*:**
***M3*:** So, I've spoken to them. Yeah, they want to start the hormone drip, OK?
***[...]*:**
***Mother*:** What does the hormone drip do?
***M3*:** It brings... It just makes the contractions really stronger, and they come really quickly, like every one and a half to two minutes
***Mother*:** And does that make her dilate more?
***M3*:** Mmm, hope... Especially with the baby being back-to-back, really need them really close together and really stronger. So, you might want to think about what you want to do for pain relief, or if you still want to see how you're getting on while you're on it.
***Jasmine*:** Mmhm
***M3*:** So, you know, the other options that you're left with, while we're... While we start the drip is [...] Uhm is [opiate], or an epidural. Do you know about them? You know about them. Would you like to try something?
***Jasmine*:** Epidural
***M3*:** Epidural, OK, that's fine. I think it's sensible, baby's laid upward, we need that baby to turn, and it's going to be really really strong contractions.

While Jasmine is given options concerning pain relief, the decision about what to do regarding the lack of progress of her labour is framed as belonging to doctors. The midwife informs Jasmine about what the doctors want to do (via a pronouncement—'they want to start a hormone drip') and does not invite her to participate in this decision, beyond the consent tag, 'ok?' As we have explored elsewhere (Annandale et al., 2022), this is a way of initiating a decision that positions it as belonging to health-care practitioners, conveying a strong presumption of agreement

from labouring women. It was a pattern replicated throughout the data, in the sense that, once a labouring person was unambiguously located outside the parameters of clockwork birth, particular actions were treated as following automatically. In the interaction above, neither Jasmine, nor the midwife emerge as active decision-making subjects; Jasmine's non-clockwork body simply prompts a particular form of action, the necessity to consult with doctors, who decide what happens next. This echoes Scamell's (2011) findings concerning UK midwives' management of risk, and the automated way in which interventions proceed once deviation from 'normality' is identified. As Scamell notes, such automation is inseparable from the processes of individualised blame following adverse outcomes, which leave midwives seeking out deviation in fear of the potential consequences of missing it.

In the context of the first stage of labour, the most common response to bodily signals of delayed progress (in 5/6 cases) was for midwives to recommend or pronounce a decision to break a woman's waters (Annandale et al., 2022) (this does not happen in Jasmine's case above because her waters have already broken). For example, in Imogen's labour, Midwife 3 sets up the possibility of this course of action when talking about an upcoming vaginal examination: 'If I could feel any forewaters at that time, I'd like pop them with a little hook, ok? And that's to help the progression, alright?' (VIP 24). During the examination, the midwife feels the forewaters and announces, 'I'm going to use this tiny little hook here just to help the cervix to dilate, Ok' (VIP 24). Similarly, in Claudia's labour (Extract 8), the midwife also discusses breaking her waters as a course of action that *will* happen, contingent on the outcome of an upcoming vaginal examination:

Extract 8 (Claudia, VIP22)[3]

> ***M3*:** Because I think this morning, 8.40, you were five centimetres. And then we examined you again was six centimetres. So, I know that it sounds a bit textbook, but according to the guidelines that we're supposed to be seven centimetres. Or above. So, if it's OK with you, what I need to do now, so that we are knowing what you're doing and how to help you in terms of bladder and progress, is I'll examine you now.
> ***Claudia*:** Right
> ***M3*:** And see where we are, and if we're round about same, six or seven centimetres, I'm going to break your water.
> ***Claudia*:** OK

Within this exchange, via reference to guidelines 'a claim by the state to the body of the birthing woman' (McKinnon, 2016, p. 289) is rendered explicit. The assumptions of the clockwork body here, as the midwife acknowledges, 'sounds a bit textbook', but the guidelines necessitate that action is taken when progress is delayed. As others have noted (Bryson & Deery, 2010; Scamell, 2011), midwifery practice, with its emphasis on woman-centred care is in continual tension with what Kotaska (2011) calls guideline-driven care, and the authority of guidelines is such that despite their promotion of normality 'midwives are active agents in the medicalisation of childbirth performance' (Scamell, 2011, p. 997). What is interesting about Claudia's labour, however, is that her cervix introduces an element of surprise and uncertainty into the decision-making process:

Extract 9 (Claudia, VIP 22)

> ***M3*:** I think she's... You are eight centimetres. So, eight centimetres, how many hours? Six hours [...] Claudia, do you want me to break your waters to help speed up the situation?
> ***M2*:** Seven hours

***Claudia*:** What's the benefits? What's the negatives of doing it?
***M3*:** Well, there isn't much negative... Well, negative is we intervened
***Claudia*:** Yeah, yeah
***M3*:** It's just I mean in the limbo position, because if you're like, I said, if you're seven we definitely need to break your water Because you only progress... Sorry to use only, you progress two centimetres by something like six and a half hours, seven hours, which should be more of really. But I think you're eight centimetres, so a little bit limbo position, like in a bit of grey area really.
***Claudia*:** Yeah
***M3*:** I'm just giving you a choice.

The measurement of Claudia's cervix, announced in the conversation, changes its direction. The configuration of the cervix and the clock have produced what the midwife describes as a limbo position. Progress is not slow enough to be the type of slow that, according to NICE guidelines, requires action. Neither is it quite on schedule. This opens up a space for the subjective perspective of Claudia herself about the progress of her labour, and she is offered a choice about whether she wants the midwife to break her waters. Notably, it is only the intervention of the cervix which seems to make Claudia's perspective relevant to this decision. In this sense, it is in keeping with the broader pattern we observed in the data, whereby the actions of body-clock assemblages were positioned as the arbiters of human decision-making.

Occasionally, as in Claudia's example, relations between bodies and clocks create space for women in labour to act as decision-makers. In several cases, women were eager to know their own cervical measurements as a basis for predicting the likely remaining length of labour, and deciding whether they wanted pain relief to support them. Given that opiates cross the placenta, they may have implications for the newborn (Jones et al., 2012) and breastfeeding (Burchell et al., 2016) if they remain in the mother's system at birth. This information was often shared with labouring women as a disincentive to providing opiates in late first stage. On occasion, particularly when labouring women persisted in requests for opiate pain relief, uncertainty about the cervix's location in clockwork time became central to the interaction, with a vaginal examination positioned as the way to establish this definitively. Notably, however, although midwives made clear that women had the option to discover the extent of their *progress* via a vaginal examination, what pain relief options were readily available to them rested on the outcome of the examination (e.g. the cervix might determine that it is too late for opiates). Once again, cervixes speak first, and determine the scope for women to participate in what happens next.

CONCLUSION: PURSUING BIRTHING *TIMES* AS OBJECTS OF ANALYTIC ATTENTION

This article has suggested that critiques of the medicalisation of birth can be strengthened through engagement with scholarship that explores time as relational, and which highlights the complex work involved in making times through practice. This is because understanding times as relational and uncertain makes it possible to critically explore—rather than assuming—how times are made and what they *do*.

Much existing sociological and midwifery literature has positioned body time as aligning quite automatically and straightforwardly with labouring women's interests (e.g. Fox, 1989; McKinnon, 2021; Pizzini, 1992; Simonds, 2002). However, analyses of the workings of supposedly

liberatory temporalities such as 'slowness' (Sharma, 2014), and 'transformation' (Coleman, 2013) illustrates how all temporal practices contain the potential to oppress (and to be subverted). Indeed, as Davies (1994, p. 282) notes, 'process time, in terms of letting things take an inexhaustible time, can be as oppressive as clock time'. Our analysis shows that body time—just like clockwork time—*is produced and does things*, being called upon as a basis for certain forms of action (or, more often, inaction). Perhaps the most striking aspect of the recordings is the regularity with which non-linear body time is invoked by midwives *in response to* women's attempts to connect their bodies to clocks. As the recordings show, women (and their birth partners) were heavily invested in knowing how long they had left to labour. Many approached their bodies as centimetres of cervical dilation, using this as a predictive tool for the likely amount of clock time remaining. As we have seen, a great deal of midwifery work centres on reorienting women into a body time that does not require intervention. We have suggested that the work that midwives do to sustain and foreground body times serves a number of purposes (reassurance, recalibrating women's expectations and avoidance of (unwarranted) intervention) and that this thus forms part of the *management* of labouring women's bodies. We argue that potential tensions between the clockwork temporalities foregrounded by women and the bodily temporalities emphasised by midwives are deserving of further research attention.

Consistently, midwives in our study were sensitive to the potential disappointment and frustration produced by narrow cervixes, and labours that last for many hours and days. We see this in the careful interactional work that they do to repair tense temporal relations between women and their bodies, repositioning women as capable labourers and their bodies as normal and functional. This finding contrasts sharply with Chadwick's (2018) analysis of the experiences of racialised, low-income women accessing health care in public hospitals in South Africa, who were routinely denied supportive forms of care, including access to knowledge about the location of their own bodies in 'clockwork' time. Our research then, speaks to the specific context of UK, NHS midwife-led birth and, moreover, it addresses primarily the making of *white* bodies/times in this context. The latter is a significant limitation given widespread concerns with systemic racism in UK maternity care (Birthrights, 2022), and underscores the need for better involvement of minoritised ethnic women and birthing people in shaping research of this kind. Further research is also needed to explore to what extent the practices that we observed are specific to midwife-led care, which—as noted in the introduction—has long been characterised as more oriented to body/process time (e.g. Bryson & Deery, 2010; Fox, 1989; Simonds, 2002; Walsh, 2009) in comparison to obstetric-led care.

In focusing on how times are made and what they do, our analysis demonstrates that the measurement of progress in labour is a far more contingent and uncertain endeavour than biomedical narratives, and some of their social scientific critiques, might suggest. Contractions may be timed and measured against the clock, or cervical dilation may be checked, *in order* to locate a body within the early phase of labour and to support a form of care that treats labour as a non-linear process in which bodies can competently do things 'when they are ready'. Attempts to couple bodies with clocks often fail for multiple reasons such as the complexity of locating a starting point for measurement, the ways in which labouring bodies may convey conflicting pieces of information, or simply because measurements do not always clearly locate a body inside/outside of the parameters of clockwork birth. Indeed, sometimes when the measured cervix 'speaks', its position in relation to the clock enables midwives to treat *women* as the arbiters of decisions about the tempo of their birth (would it be better to speed things up? How long might be left to go? Can I bear the pain?). Equally, these permissions and possibilities are revealed to be highly

contingent, and the importance that is accorded to the act of locating the labouring body in clockwork time is never absent.

Understanding the making of times in the labour room as work that can be done in different ways enables consideration of how these temporal possibilities are shaped and constrained. Davies (1994, p. 299) suggests that, in the context of care work, particular forms of time are perhaps less important than 'the ability to actively switch between, or make use of, these temporal relationships *depending on the context*; for the care worker to be able to decide over these temporal relationships rather than be controlled by them; for carers to use them in such a way that the care receiver benefits'. Our analysis demonstrates that it is, ultimately, the mapping of the actions of the body onto a staged, clockwork model that drives and shapes what happens next in labour, with both women *and midwives* frequently disappearing as decision-making subjects. This highlights the ongoing relevance of critiques of the dominance of clockwork time, and of the guideline-driven context of UK birth, which creates such precarious spaces for women/birthing people, and the midwives who care for them, as participants in labour.

AUTHOR CONTRIBUTIONS

Siân M. Beynon-Jones: Conceptualization (lead); formal analysis (lead); writing—original draft (lead); writing—review and editing (equal). **Clare Jackson**: Formal analysis (supporting); visualization (lead); writing—original draft (supporting); writing—review and editing (equal).

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

The preparation of this large and complex dataset for data archiving is ongoing. If accepted, data will be deposited in the UK Data Archive, managed by the UK Data Service (https://ukdataservice.ac.uk/), where participants have given specific consent for this.

ETHICS STATEMENT

The study was granted approval by the National Research Ethics Service Committee for Yorkshire and the Humber (South Yorkshire) on 23 March 2017—REC reference 17/YH/0102.

CONSENT STATEMENT

All participants provided written consent to participate in the study and to publish anonymised transcripts of their recorded interactions in research articles.

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ENDNOTES

[1] When referring specifically to our data we use the term women, as all participants were gendered in this way during the recordings. However, to acknowledge that some birthing persons do not identify as women, we use the terms women and birthing people/bodies elsewhere in the article.

[2] Recordings were not transcribed in full (several were many hours long); instead, any interactions centred on decision-making were transcribed. In the transcripts, labouring women are denoted by a pseudonym, birth partner by their relationship to the labouring woman (e.g. partner and mother) and midwives by Mx, where *x* is the numerical order in which the midwives attended to the labouring woman.

[3] Extract 8, and parts of Extract 9, also appear in Annandale et al. (2022, pp. 66, 67); however, they are used here as part of a distinct analytic argument.

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