**Messages from space: An exploration of the relationship between hospital birth environments and midwifery practice.**

**Abstract**

*Objective*:To explore the relationship between the birth environment and midwifery practice using the theoretical approach of critical realism.

*Background*: Midwifery practice has significant influence on the experiences and health outcomes of childbearing women. In the developed world most midwifery practice takes place in hospitals. The design and aesthetics of the hospital birth environment impact on midwives and inevitably play a role in shaping their practice. Despite this, we understand little about how midwives’ own thoughts and feelings about hospital birth environments may influence their behaviours and activities when caring for childbearing women.

*Design:* An exploratory descriptive methodology was used and 16 face-to-face photo-elicitation interviews were conducted with practising midwives. Interviews were audio recorded and transcribed verbatim. Thematic analysis informed by the theoretical framework of critical realism was undertaken.

*Findings:* Midwives clearly identified cognitive and emotional responses to varied birth environments and were able to describe the way in which these responses influenced their practice. The overarching theme ‘messages from space’ was identified along with the three sub-themes of ‘messages’, ‘feelings’ and ‘behaviours’. Midwives’ responses aligned with the three domains of a critical realist world-view and indicated that causal relationships may exist between the birth environment and midwifery practice.

*Conclusion:* The design of hospital birth rooms may shape midwifery practice by generating unseen cognitive and emotional responses, which influence the activities and behaviours of individual midwives*.*

**Introduction**

In many places around the world, the prominent workforce providing maternity care to childbearing women are midwives. Midwives can practice in a range of built environments including homes, hospitals and freestanding or co-located (in-hospital) birth centres. In developed countries the majority of midwifery practice is undertaken in hospitals. Like all people, midwives are inevitably affected by the designed environments with which they interact but very little is known about the ways in which varied hospital birth environments influence midwives and their practice.

Midwives in this study worked in two kinds of hospital birth environments – the delivery suite and the co-located birth centre. Delivery suite rooms are commonly organised around a central single, mechanised bed and display a clinical aesthetic. They contain medical equipment such as a cardiotocograph machine, intravenous infusion pumps and infant resuscitaire machines. Co-located birth centres are also housed within hospitals but their rooms display a less clinical aesthetic and incorporate domestic features such as a normal bed, soft furnishings, warm colours and decorative items. The medical equipment that so strongly shapes the aesthetic of delivery suite rooms is usually concealed or not present in a birth centre room. In Australia, where this study was located, delivery suite is considered the traditional environment for hospital birth whereas the birth centre is positioned as an alternate environment.

Recent research suggests that the design of traditional hospital birth environments does not facilitate effective midwifery practice and some design elements may actually hinder midwives from enacting the activities and behaviours associated with quality midwifery care ([Foureur et al. 2010](#_ENREF_13); [Hammond, Foureur & Homer 2013](#_ENREF_15); [Hammond et al. 2013](#_ENREF_16); [Miller & Skinner 2012](#_ENREF_30)). The provision of effective, high quality midwifery care is a critical factor in promoting global maternal and child health ([World Health Organization 2011](#_ENREF_40)). Research shows that midwifery care is associated with optimal health outcomes for women and their babies including reduced rates of instrumental birth, reduced use of pharmacological pain relief and a lower incidence of caesarean section and pre-term birth ([Hatem et al. 2008](#_ENREF_18); [McLachlan et al. 2012](#_ENREF_29); [Sandall et al. 2013](#_ENREF_33)).

In order to enhance the provision of quality midwifery care, the hospital birth room must support the physical, functional and psychological needs of practising midwives so that they in turn can effectively meet the needs of childbearing women. Although the physical environment is recognised as a factor that shapes midwifery practice ([Bourgeault et al. 2012](#_ENREF_5); [Davis & Walker 2010](#_ENREF_10); [Freeman et al. 2006](#_ENREF_14); [Hammond, Foureur & Homer 2013](#_ENREF_15); [Lock & Gibb 2003](#_ENREF_27); [Odent 1984](#_ENREF_32)), the actual mechanisms by which this occurs are not clearly understood. In order to increase understanding of the ways in which the environment may influence practice, this study used the theoretical framework of critical realism. By using a critical realist approach, particular attention can be given to aspects of phenomena that usually remain unseen, such as cognitive and emotional processes. This study investigates whether such processes influence practice by exploring midwives’ thoughts and feelings about the hospital birth rooms in which they work.

**Critical realism**

Critical realism has been utilised as a theoretical framework underpinning design and analysis in this study. The development of critical realism in the 1970s is predominately attributed to the philosopher Roy Bhaskar although several other significant authors have contributed to the contemporary understanding of a critical realist approach to research ([Archer et al. 1998](#_ENREF_2); [Bazely 2013](#_ENREF_3); [Collier 1994](#_ENREF_8); [Maxwell 2012](#_ENREF_28); [Sayer 1992](#_ENREF_34)). Critical realism aims to increase understanding of processes that cause the phenomena we perceive around us, with a particular interest in the thinking and behaviour of individuals in specific contexts ([Maxwell 2012](#_ENREF_28); [Sayer 2000](#_ENREF_35); [Schwandt 1997](#_ENREF_36)). The approach of critical realism provides an ideal framework to apply to complex social investigations and it has been used broadly in the fields of human geography, economics and sociology ([Angus & Clark 2012](#_ENREF_1); [Sayer 1992](#_ENREF_34)).

Critical realism has been acknowledged as a particularly useful approach for health research as studies that apply it can “generate richer conceptualisations and deeper understandings of complexity for the development of more sophisticated explanations and more effective solutions” ([Angus & Clark 2012, p. 1](#_ENREF_1)). It is this capacity to reflect complex and multi-layered phenomena that denotes critical realism as ideal for midwifery research. From both research and practice perspectives, midwifery encompasses a complicated and inter-related web of phenomena including environmental, experiential, physiological, social and psychological influences.

The complexity inherent in midwifery research demands a theoretical approach that supports holistic investigation and embraces multiple perspectives in order to generate credible and coherent findings ([Walsh & Evans 2013](#_ENREF_39)). The appropriateness of critical realism for this task is reflected in recent research that has explicitly called for a broader adoption and application of critical realist philosophy and theory in midwifery research ([Walsh & Evans 2013](#_ENREF_39)). In particular there are four central tenets of critical realism that are important for this study.

*1. Multiple valid experiences*

Critical realism espouses a realist ontology (there is a real world that exists independently from our knowledge and ideas about it) and a relativist constructivist epistemology (our understanding of the world is shaped by our own experiences and perspectives) ([Maxwell 2012](#_ENREF_28)). Thus an important distinction is made between the real world and our *experience* of the real world, allowing for multiple valid accounts of any phenomena. Critical realism accepts that due to our varied experiences of real world phenomena, there is no single definitive understanding of reality.

*2. Causation*

Critical realism accepts that causation is real and can be investigated. In contrast to the traditional positivist approach which refutes the concept of observable causal relationships, critical realism provides a framework for studies that are intended to draw causal conclusions ([Bazely 2013](#_ENREF_3); [Maxwell 2012](#_ENREF_28)). By accepting causation and causal relationships, critical realism acknowledges that some things can cause other things to happen. This approach is useful for any study that seeks to expose the inner workings of certain phenomena by asking questions about *how* and *why*.

*3. Generative mechanisms*

Generative mechanisms exist in objects and social structures and act beneath the surface of events to influence the way things happen. Essentially, generative mechanisms are causative agents – the things that can cause other things to happen. These mechanisms underlie causal powers and are situationally contingent, meaning that they can have different effects on different people in different contexts ([Angus & Clark 2012](#_ENREF_1); [Maxwell 2012](#_ENREF_28)).

*4. Mental processes are part of the real world*

Critical realists view mental processes including thoughts, beliefs, feelings, intentions and ideas as equally as real as physical phenomena. The mind is seen as part of reality and therefore processes of the mind can play a causal role in both individual and social phenomena ([Bazely 2013](#_ENREF_3); [Maxwell 2012](#_ENREF_28)). The processes of the mind are considered real on the grounds that they provide context and meaning to the experiences and actions of individuals and the effects of mental process can be observed in the real world ([Maxwell 2012](#_ENREF_28); [Walsh & Evans 2013](#_ENREF_39)).

Adopting the approach of critical realism has provided a strong theoretical basis for this study and facilitated a study design where: individual experiences are valued and explored; the causal effects of the birth environment on practice can be investigated; the mechanisms that underlie events can be identified; and the cognitive and emotional processes of midwives are accepted as part of the reality of practice.

It is important to acknowledge that debate regarding critical realist philosophy and its application to research continues in the literature. For example Jeffries ([2011](#_ENREF_26)) has written a comprehensive critique claiming that critical realism “inherits all of the flaws of Kant’s eclectic dualist method and resolves none of the difficulties with it” and argues for “a reapplication of dialectical materialism, principally based on the writings of Hegel, Marx, Engels and Plekanov” ([Jeffries 2011, p. 4](#_ENREF_26)). This study does not seek to engage with such philosophical debate and indeed has no contribution to make to it. Instead this study engages critical realism as a practical qualitative research framework as described principally by Maxwell ([2012](#_ENREF_28)). To date, very few midwifery studies have adopted this approach.

**Methodology**

This qualitative study aimed to explore the relationship between the birth environment and midwifery practice. To facilitate this, an exploratory descriptive methodology was chosen. Exploratory descriptive research has been described as:

‘…a broad ranging, purposive, systematic, prearranged undertaking designed to maximise the discovery of generalisations leading to description and understanding of an area of social or psychological life.’ ([Stebbins 2001, p. 3](#_ENREF_38)).

This methodology is congruent with the critical realist approach, which aims to understand and illuminate the mechanisms by which certain phenomena occur. An exploratory descriptive methodology is usually associated with a small sample size (<20), intensive interviewing and exploration of individual experiences and processes ([Brink & Wood 1998](#_ENREF_7)) which are all features of this study.

**Design**

Critical realism supports a pragmatic approach to study design, intended to facilitate productive and relevant research ([Maxwell 2012](#_ENREF_28)). Sixteen face-to-face photo elicitation interviews were conducted with practising midwives from one Australian hospital. The interviews were audio recorded, transcribed verbatim and analysed using a thematic approach informed by critical realism.

*Setting*

The study was conducted at a major tertiary referral hospital in a large Australian city. Recent renovations at this hospital created an opportunity to interview midwives who had recently moved from an old unit to a newly designed and built unit.

*Participants*

A total of 16 midwives were interviewed in this study. Nine midwives worked in a co-located birth centre within the hospital and seven midwives worked in the delivery suite. Midwives from the birth centre worked in a model that offered caseload care (one-to-one care from a known midwife) to women whilst midwives from the delivery suite worked in a traditional model covering a variety of rostered shifts.

*Ethics*

Ethical approval was gained from Human Research Ethics Committees of the University of Technology, Sydney and the hospital prior to the study commencement.

*Interviews*

Sixteen semi-structured photo-elicitation interviews were conducted. Photo-elicitation interviews (PEI) are face-to-face interviews that introduce photographic images as triggers to elicit information. It is suggested that PEI can evoke deeper and more emotive information than interviews based on verbal interaction alone ([Harper 2002](#_ENREF_17)). Of the first six interviews, three were conducted in situ in hospital birth rooms and three were conducted in midwives’ homes. The following ten interviews were all conducted in midwives homes as concurrent analysis indicated this was a more conducive environment for eliciting information about midwives’ thoughts and feelings.

During the interviews all midwives were shown photographs (taken by one of the authors) of birth rooms from their own workplaces. As the interviews were purposely conducted at a site where midwives had recent experience of working in two differently designed birth environments, midwives were shown photographs of birth rooms from both their old and new workplaces. These were the old and new birth centre plus the old and new delivery suite. The new delivery suite is a temporary site and is not purpose designed for maternity care although it contains the features and objects one would associate with a maternity care setting.

**Analysis**

Thematic analysis was undertaken using Dedoose ([www.dedoose.com](http://www.dedoose.com)) qualitative analysis software. Initial codes were generated from the data and were reviewed by all three authors. A system of constant comparison and repeated re-reading was used to contextualise and compare data that related to the area of analytic interest – the relationship between environment and practice. The overarching theme that emerged from this analysis was ‘messages from space’. This theme articulated midwives’ responses to the birth environment on three different levels, creating sub-themes of ‘messages’, ‘feelings’ and ‘behaviours’.

In this paper, the focus is on the midwives’ relationships with their own workplaces and how those places influence their practice. Although the context differed, three sub-themes appeared in every interview – each midwife was able to identify the *messages* they received from the birth room, the *thoughts and* *feelings* they had in response to those messages and the *behaviours* they exhibited when they had those thoughts and feelings.

The analysis presented here aims to provide a rich and contextualised picture of midwives experiences and emphasise the connectivity between the three sub-themes for each individual. To do this, it is most effective to take a narrative approach to the data, in essence telling an unfolding story of each midwife’s experiences. It is believed that in this instance, this approach can provide a more complete picture than a traditional approach to thematic data, which presents sub-sets of similar but disconnected and non-contiguous data to illustrate each theme.

As it is not practical to present the detailed stories of 16 midwives in a paper such as this, three exemplar interviews have been selected. These interviews were selected because they were highly illustrative of the sub-themes that appeared consistently throughout the whole data set. Selecting only three interviews allows space to present stories that reveal context and connectivity whilst highlighting the inter-relationships between sub-themes in the data. This is an important aspect of a critical realist approach, which endeavours to uncover causal relationships rather than identify regularities in the data. Selection was also guided by the intention to present data from midwives working in varied settings and circumstances. Ultimately, it is considered that data can be presented this way without compromising the validity of the findings as the three exemplar interviews are representative of the whole data set for the purposes of discussing these particular sub-themes.

**Findings**

Findings from this study are presented through the experiences of three midwives. Pseudonyms are used throughout. Thematic analysis revealed an overarching theme of ‘messages from space’ and three sub-themes of ‘messages’, ‘feelings’ and ‘behaviours’.

*Romana*

Romana completed her nursing degree before training as a midwife. She chose not to work as a nurse but began midwifery practice as soon as she was qualified to do so. She currently works part time in delivery suite and has previously worked in a birth centre.

Romana was shown an image of the delivery suite environment. She described the environment this way:

“Well, I think it says something straight away when you walk in – this is going to be a procedure – that bed is very foreign and you probably have to birth in the bed because I can’t see – there’s no mat, there’s no ball, there’s nothing to lean on, there’s nothing on the floor that welcomes you to lie down – you know, where’s the birth pool? There’s a lack of resources in that room.”

When asked how she *felt* about the room, Romana responded:

“I feel sorry for the women that come into it. I feel really sad that they walk into this cold, alien space – there’s no resources there, what are they supposed to do?”

 “It is almost against my whole way I want to be with women – there is always a conflict when I walk into a room like that, I have a sense of conflict.”

Romana explained how her feelings of conflict influenced her behavior:

“What I do is I *try* very hard to put that (*conflict*) aside because what I’m wanting the woman to do is to feel at home in that room – it’s very hard if *I* don’t. So then I go into overdrive about being welcoming and relaxed and you know, ‘the space is yours,’ and so I try to be comfortable in that space but I’m not. So there’s an effort going on.”

Romana also described behaviour associated with feeling sorry for women who come into the delivery suite:

“I would apologise for the room to the woman. I would be trying to move the bed, I would be agitated - I’d be racing around and setting the space up for her and not giving her that attention. I want to apologise to her and so she knows that I’m not comfortable.”

This was contrasted with her behavior in an environment that was set up more to her liking:

“If everything was set up and the bed was away (*from the centre of the room*) and I felt the room was welcoming, I would feel more welcomed. I would sit down and we could work together.”

Romana identified messages that the room gave her regarding the use of epidural anaesthesia, comparing her experience in the birth centre and delivery suite:

“Having an epidural is such a big thing in the birth centre because it means that you *leave* that space whereas if you’re there (*pointing to* *delivery suite image*) the bed’s there – you’re probably already on the bed – the monitor’s there and this is what happens in this room.”

This message that ‘this is what happens in this room’ seemed to affect Romana’s thinking:

“When I walk into this room I think, ‘we’re probably going to have an epidural.’ Now, I try very hard not to work in that way but it’s absolutely in the front of my brain without a doubt. I’m thinking ‘well, how long is she going to hang out in this god forsaken room with nothing to do before she asks for an epidural?’”

These thoughts had an impact on Romana’s practice:

“I roll over (*acquiesce to women’s requests for epidural*) more easily because I can’t offer – there is no place she can go that is safer and more normal so then I’m more easily convinced that she will need an epidural.”

This was in contrast to the way Romana felt when she practiced in a birth centre environment:

“I’m far more trusting of women’s ability to birth in that (*indicates birth centre*) environment and I know that has an impact on the women I care for because I don’t get phased. You know when they get into that transition stage where they’re really struggling – I feel much more at ease rather than in that room (*indicates delivery suite*) on that bed with that lighting and not a nice place for me to sit, that’s noisy and cold where I don’t feel I have the resources to help her.”

*Mary*

Mary is an extremely experienced midwife who completed her midwifery certification through a hospital based training program in the early 1980’s. She currently works part time in delivery suite where she is often the senior midwife on shift and works closely with junior staff.

Mary initially described the delivery suite birth room this way:

“It’s a small space looking out over a building site. It’s not aesthetically pleasing – it’s a room that is dominated by a bed. They’re functional but they’re not comfortable. It’s all about the bed in the room.”

Mary was concerned by the lack of lack of space in the environment:

“It should be a calm relaxing environment and it’s just not because it’s too crowded.”

When asked how she felt working in the delivery suite room Mary replied:

“I would just feel better if I wasn’t surrounded and crowded in by people and stuff. I mean, I know what I’ve got to go in there and do but I think it would just be such a more pleasing place to be if there wasn’t always excess (*equipment and objects*).”

Although she had not been given an image of the birth centre, Mary made a spontaneous comparison asking:

“Have you been to the new birth centre? It’s beautiful isn’t it? That’s a very pleasing environment to be in. I mean, I don’t work there but every so often I go up there at night to help them if they need a hand.”

Mary was asked whether she felt different in that environment and she told us:

“I see a greater sense of calm. I see just a nicer environment and there’s family there. It’s very calm – it’s just nice to go in there – I think it’s beautiful, it’s beautiful to be in there.”

Working in an environment that wasn’t so calm took a personal toll on Mary:

“I just get deliriously tired - you know you get older – I just get really, really tired. Yeah, it’s just an overwhelming feeling because I’m exhausted sometimes, physically and mentally.”

These feelings influenced Mary’s practice by disrupting her capacity to support her junior staff effectively:

“I took over from a girl (*junior midwife*) who was looking after a woman and I walked into the room and I thought ‘Oh for (*expletive*)’s sake, I just don’t want to be in here.’ I felt like screaming at my junior and saying “For (*expletive*)’s sake would you clean up the room! I can’t work under these conditions!”

These thoughts and feelings affected Mary’s morale and she attributed them to the environment in the birth room:

“I mean I never – I don’t shout at anybody – I’m never mean to anybody, that’s not my style but I was really exasperated. They’re the sorts of scenarios that cause a lot of stress simply because of the environment. A room that is way too small caused me big problems.”

*Anousha*

Anousha has been a midwife for five years and previously worked as a women’s health nurse. Currently she works full time in the birth centre where she practices in a caseload model. She has experience working in both delivery suite and birth centre environments.

Anousha was first shown an image of the new birth centre, which is her current work environment:

“It looks quite light and clean, I love the natural light getting into the rooms – it’s quite an open space. The first time I saw it I thought it was the Hilton (*5 star hotel*) for births! Um yeah, just nice and clean and modern.”

Anousha was positive about the birth room but was conscious that such a new and modern space may have drawbacks:

“Because it’s such a modern building – the thing with modern buildings is it could look really cold and you don’t feel as open or comfortable in a situation or a place – like a new place.”

It was important to Anousha that features in the birth room, such as the bed, engendered a sense of homeliness or normality:

“We’re promoting normal birth with just a normal bed and not a hospital bed. It just looks like a bed that you would have at home – I think that’s really important like it looks like you could have that in your home.”

The normalness of the bed and other features sent a message to Anousha:

“I think it plants a seed that everything is going to be okay – if that makes sense?”

Overall the birth room sent a strong message to Anousha regarding her practice:

“To me it means freedom. It does mean freedom, freedom to help the woman have a natural birth. It means there’s no doctors there it’ll just be me, the support people – we can move, we can do whatever we like. We don’t even have CTGs (*cardiotocographs; a fixed machine providing continuous electronic monitoring of fetal heart*) in that room, I’ll have a pinnards or a doppler (*mobile* *hand held devices for listening to fetal heart*) and that’s all I have and to me that means freedom.”

This feeling of freedom was manifested in the way that Anousha utilised the whole birth centre space and surrounds in her practice:

“So before we even get in the room we’re walking up and down that hallway, we’re using the education room because there’s that lovely window – it doesn’t matter if it’s day or night, we go across to the oval (*nearby park*) and do a couple of laps there together. We’ll come back, have a drink of water and then maybe hang out on the balcony to get some fresh air or if she may need a bit more than that we use the shower before we get to the bath.”

Anousha was also shown an image of the old birth centre, her previous work environment. She described it this way:

“This looks more like someone’s home to me, a bit older and dated but it looks cosy – the wood furniture and the old style wooden cot. The lighting is really nice, it’s nice and dark in there. The room looks a little bit more homey, it’s like any persons home I guess.”

Despite an increased sense of homeliness, Anousha had quite conflicted feelings about the old space:

“In the old space I felt really claustrophobic – it was too small for me.”

Anousha was asked what happened when she felt claustrophobic:

“Well, I feel like I can’t do – I can’t use the skills – like I usually teach women to do squatting and have all these different positions and I just feel I have to work hard to get them to that position. I feel limited - I feel like I could have done more in my capacity as a midwife to help the woman.”

Anousha’s sense of constraint was even stronger in the delivery suite environment:

“Whenever we move downstairs to delivery suite in this really small room – it changes, the whole place changes and *I* change because you can hardly move in those rooms.”

“I change because I feel like, ‘oh what now? what are we going to *do*?’ I feel like something has to happen and so that makes me tense.”

Anousha explained the impact of feeling tense on her practice:

“I feel like I’m more aloof as opposed to relaxed – on standby – when a place or an environment is stressful. I just want to make sure everything’s okay but I don’t think that’s a positive thing.”

Anousha’s feelings of tension and limitation were in direct contrast to her feelings about the new birth centre:

“For me, when I see a lovely place like this, it’s nice to work in. There’s no obstacles - it just means that I can move around and it’s just clean and just pretty much open plan and free.”

 These positive feelings also had some impact on Anousha’s practice:

“When I’m more relaxed I go with the flow. I feel like the more the women and myself relax - and we know that’s there’s no timeframe – we just have really lovely quick normal births.”

 “I don’t feel like I’ve worked as hard – I feel good when I come out of the birth centre because it’s a lovely place to work.”

**Discussion**

This study has explored the relationship between the birth environment and midwifery practice. The analysis presented here indicates that the physical environment, including objects and aesthetics, influences the behaviours and activities that underlie and/or constitute midwifery practice. Although not purposively designed to do so, the three sub-themes identified in the analysis (‘messages’, ‘feelings’ and ‘behaviours’) aligned with the critical realist world-view of a stratified ontology. This position contends that the world is stratified into three domains known as the real, the actual and the empirical. A very brief explanation of these domains and the alignment of the sub-themes with them can be seen in Table 1.

Table 1. Study sub-themes aligned with Critical Realist domains.

|  |  |  |
| --- | --- | --- |
| *Critical Realist Domains* | *Corresponds to Sub-Theme* | *Example from data: Romana* |
| **Real**: Mechanisms and structures that underlie what happens. | **Messages**: What the room says to the midwife. | “It says something straight away – this is going to be a procedure.” |
| **Actual**: What is happening although not always visible.  | **Feelings:** What the midwife thinks and feels about what the room says to her. | “When I walk into a room like that I have a sense of conflict.” |
| **Empirical**: What we see and experience.  | **Behaviours**: What the midwife does when she has those thoughts and feelings. | “Then I go into overdrive about being welcoming and relaxed.” |

This interpretation of the data suggests that midwives receive messages from the room regarding the powers and tendencies (generative mechanisms) of the objects within it. In Table 1, Romana articulates the tendency, or combined powers of the medicalised objects in the room to engender a procedural process of birth. Remembering that generative mechanisms can have different effects on different people, Romana then describes the feeling she has when she encounters the environment where these objects are emplaced. This feeling is considered ‘real’ from a critical realist perspective and therefore has the capacity to effect what happens in the real world. This is evidenced in the empirical domain where Romana describes the influence of her personal feelings about the room on her actions and behaviours.

The varied personal responses of Romana and the other midwives in our study are indicative of the open systems within which they practice. Bhaskar ([1975](#_ENREF_4)) identified that open systems are the prevailing environment in the real world. Open systems are characterised by their changeability; the interactions of multiple causal relationships in an open system produce constantly unfolding and mutually influential events. From an experimental perspective, an open system has many uncontrollable variables that can include objects and structures (such as social or institutional structures) plus the individual responses of various people *to* those objects and structures ([Cruickshank 2012](#_ENREF_9)). Data from our study suggests that, as one would expect in an open system, when it comes to their thoughts and feelings about the physical environment midwives do not respond in the *same ways* as each other but they do *all respond*.

Our data consistently showed that midwives could describe the feelings they experienced in response to differently designed hospital birth rooms, just as all people experience emotional responses to what Dazkir and Read ([2011](#_ENREF_11)) called their ‘near environment’. In data from the three interviews presented in this paper Romana, Mary and Anousha described feelings as varied as sadness, conflict, frustration, freedom, tension, pressure, relaxation, safety, exasperation, limitation, trust, expectation, agitation and independence. The three midwives associated the experience of different emotions with different birth room environments, in other words the same midwives did not feel the same way everywhere they practiced.

Although this study did not set out to explore the explicit differences between birth centre and delivery suite environments, it is difficult to ignore the contrasting messages midwives received from these differently designed and decorated birth rooms. In the interviews analysed here Romana, Mary and Anousha described feelings of tension, exasperation, limitation, conflict, discomfort and sadness associated with the delivery suite environment. However they associated the birth centre environment with feelings of freedom, relaxation, confidence, trust, ease, calm, pleasure, normalcy, homeliness and safety. Although the reasons for these differences are likely to be complex, this finding plainly indicates that the midwives in our study feel different in different birth room environments.

The way people feel at work (their affective state) influences cognition and behaviour in the work environment ([Muchinsky 2000](#_ENREF_31)). In particular affective states may influence “a variety of performance-relevant outcomes including judgements, attitudinal responses, creativity, helping behavior and risk taking” ([Brief & Weiss 2002, p. 293](#_ENREF_6)). Midwives in our study described behaviours that reflected all of these aspects of practice. For example Romana explained that the medical objects, clinical aesthetic and perceived lack of resources in delivery suite influenced her *judgement* about women’s need for epidural pain relief. Anousha described how the freedom she felt in the new birth centre allowed her to use the space much more *creatively* than she had in the old birth centre. And Mary found that her feelings (or affective state) undermined her capacity for *helping behaviours* as she was less able to support junior staff members whilst she attempted to manage her high levels of frustration with the environment.

Managing feelings in the workplace is an important aspect of professional conduct in most fields although it has been suggested that constant management of emotions at work may have harmful consequences for workers ([Hochschild 1983](#_ENREF_19)). Midwifery research has identified that midwives carry a high load of emotional labour in their jobs ([Hunter 2001](#_ENREF_23)). This load has been ascribed predominately to the management of issues related to ideology, organisational culture and interpersonal relationships ([Hunter 2004](#_ENREF_24), [2005](#_ENREF_25)). The findings from this study suggest that a further component of emotional labour for midwives is the management of feelings generated by interactions with the physical environment. The midwives in our study revealed that they were frequently required to manage complex feelings such as tension, sadness, guilt and frustration that arose from their responses to the design and aesthetics of hospital birth rooms.

One potential consequence for individuals carrying a high emotional load at work is the experience of inauthenticity. Inauthenticity arises when workers perform extensive amounts of emotional labour thus become distanced from their own feelings, losing the sense of being ‘true to themselves’ ([Sloan 2007](#_ENREF_37)). The experience of inauthenticity is associated with burnout, psychological distress and alienation ([Hochschild 1983](#_ENREF_19); [Sloan 2007](#_ENREF_37)). It could be argued that midwives are particularly vulnerable to the experience of inauthenticity given the high emotional load of midwifery practice and the well-documented difficulties of balancing midwifery and obstetric approaches to maternity care in the hospital environment.

Midwives in our study did experience feelings of inauthenticity although some were more vulnerable to these feelings than others. For example Romana’s conflicted feelings about the mismatch between the birth room environment and the way she wished to ‘be’ with women indicated a vulnerability to feelings of inauthenticity. Conversely, Anousha’s description of freedom in the birth centre suggests a *decrease* in vulnerability to feelings of inauthenticity. Anousha felt free, relaxed and independent whilst Romana felt conflicted, sad and apologetic. Given these findings, it is possible that the birth centre environment may act as a buffer to protect individual midwives from feelings of inauthenticity.

Current research shows that alternate environments for birth – those that do not resemble traditional hospital delivery suite rooms – are more strongly associated with normal birth ([Hodnett et al. 2010](#_ENREF_20)). In other words, normal birth is more likely to occur in rooms that are not filled with medicalised objects and that do not display a clinical aesthetic. Studies have indicated that the experiences and outcomes of childbearing women are influenced by the design of the environment in which birth occurs ([Duncan 2011](#_ENREF_12); [Foureur et al. 2010](#_ENREF_13); [Hodnett et al. 2009](#_ENREF_21); [Huack, Rivers & Doherty 2008](#_ENREF_22)). Paradoxically, given the midwife’s pivotal role in the activities that occur in the birth room, the effects of these environments on midwivesand their *facilitation* of normal birth have not yet been adequately investigated. In our findings, both Romana and Anousha suggest that objects and aesthetics do influence their facilitation of normal birth and future research in this area is recommended.

This study set out to explore the relationship between hospital birth environments and midwifery practice. Our findings suggest that this relationship is very real. All of the 16 midwives interviewed for this study including Romana, Mary and Anousha identified that the birth environment influenced their practice. This study has been able to provide some insight into the mechanisms that underlie this influence by adopting a critical realist approach to the data. This approach allowed us to position the thoughts and feelings of midwives (which are usually hidden) as equally as real as their behaviours and actions (which are usually visible). Critical realism has enabled exploration of causal relationships between the *messages* midwives receive from the birth rooms, the *feelings* they have in response to those messages and the *behaviours* they enact when they experience those feelings.

**Conclusion**

We propose that the design and aesthetics of hospital birth rooms, including the objects and structures within them, act as generative mechanisms sending messages to midwives about what is possible and permissible in the birth room. These messages elicit emotional and cognitive responses from midwives and such responses can shape the activities and behaviours that constitute individual midwifery practice.

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