Chapter 8
Materialities and Professional Practices

Introduction

This chapter focuses on the fourth essential dimension of professional practices and learning: things (see Hopwood 2014a, b). The accounts of times, spaces and bodies in the preceding chapters have not been devoid of reference to materiality. However here, things are confronted head on, diffracted out as an artificial yet valuable analytical point of departure (see Chap. 1; Barad 2007; Shove et al. 2012). Doing this brings new features of professional practices and learning into focus, while also enabling us to revisit familiar aspects explored earlier in Part II. Consistent with previous chapters, the focus is on connectedness in action, now paying particular attention to material textures and their emergence through agile practices. The entanglement between theory and empirical data continues, now drawing on a distinctive array of concepts that bring things into sharper focus.

As this is the final chapter in Part II, the opportunity is available to make explicit the many overlaps and links between the dimensions, while also adopting a distinctive analytical approach. Thus after a brief recap of the key concepts, the analysis begins with a focus on the materialities of space. The corridors, client suites, and playroom are discussed in detail, providing an alternative take on features that were highlighted in Chap. 6. A strong temporal and rhythmic quality returns in the next section, which considers materialities of organising, connecting with ideas from Chap. 5. The whiteboard, communication book, Clients in Residence sheets, and signatures are examined as artefacts that help practices hang together, enabling textures to be made and remade in an agile, responsive way. Ideas of stability and stabilising are then addressed in relation to bubble wrap and scrap paper, the nurses' station, pens (and textured intimacy of epistemic work), and clipcharts (with their distinctive rhythmic movements). The final section makes stronger links to Chap. 7 through a focus on bodies. Here the analysis explores how embodied materialities fill out the ends of practices.

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Following Nicolini (2009), this chapter involves a playful zooming in and out, both in terms of the things under scrutiny and the conceptual level of analysis. Sometimes I zoom right in, up close to small objects such as pens and signatures, while at other times I zoom out to explore larger entities such as corridors. Similarly, some concepts offer a fine-grained purchase on the material dimension of professional practice and learning, while others enable me to stand back and explore broader patterns.

As explained in Chap. 3, sociomaterial approaches are diverse but configured around a number of shared themes. Key among these are the idea of rethinking the thing (Fenwick 2010), and accounting for phenomena in ways that keep the analysis firmly embedded in the material world. This is a response to historically dominant approaches that have treated matter as if it does not matter (see Barad 2003), particularly when devoting attention to a cognitive or ideational realm (see Carlile et al. 2013; Cooren et al. 2005; Fenwick et al. 2011; Jensen 2010; Shove et al. 2009; Sørensen 2007, 2009). Following many others, I see materiality as a crucial dimension of practice and learning, rather than as physical context or as providing tools to be used. Reich and Hager (2014) highlight materiality as the second of their six threads in theorising practice (see Table 3.2). Orlikowski (2007) expresses this as constitutive entanglement of the social and material. In Schatzki (2003) this finds expression in his site ontology, whereby the site is the fundamental unit of social reality, constituted in practices and the material arrangements with which they are bundled (see Chap. 3).

Seen from non-representational (Thrift 2007), performative (Barad 2003, 2007, 2013), or site ontological (Schatzki 2003) perspectives, materiality takes on particular qualities. Things are not static or given, but rather *emerge*, their qualities, functions and effects result from changing relationships or assemblages. Practice and the material world are constantly making and remaking one another (Pickering 1992; Shotter 2013). Thus objects are not treated as stable, bounded entities whose properties are inherent, locked in. Rather this chapter looks at particular objects and sees movement, rhythm, and dynamic relationships with other objects and the practices with which they are bundled.

Materiality is not viewed as merely the object of knowledge (we come to know certain things about things), nor as housing for particular reified, externalised knowledge (a book holds knowledge in written form). Rather, knowledge and knowing are seen as inherently material affairs. In Gherardi's (2006) work, knowing in practice takes centre stage, folding together the ideas of action and cognition: we know through and in our actions and these actions are exerted in, amid and on a material world. Gherardi (2006) explicitly rejects the 'virtual removal' of materiality resulting from the location of thoughts and ideas in an ethereal domain. She hones in on material consistency, exploring movement and materiality as part of the temporally and spatially mobile emergence of meaning.

In Schatzki (2002) the notion of practical intelligibility is crucial (see Chap. 3). Following Pickering (1993, 1995, 2001) and others, he rejects symmetry between the human and non-human associated with post-humanist approaches such as actor-network theory, and instead defends a residual humanism. Briefly, this comes

down to the idea that the contribution that objects make in social affairs depends on 'us', on the practices with which they are bundled. Practical intelligibility refers to the way in which people make sense of objects and artefacts in the course of enacting particular practices. On the Residential Unit, a chair in the dining room during a meal time, and the 'same' chair placed in a corridor during prolonged settling in the middle of the night mean very different things.

Practical intelligibility thus dismantles clear separation between the material world and knowledge. Things are known in and through practices, and their meaning as things is established through them. Schatzki (2002, 2005, 2010) elaborates a number of ways in which practices bundle with material arrangements—of which practical intelligibility is one. Others that feature in the analysis that follows include the prefiguring of practices by material arrangements (corridors, whiteboards), the responsiveness of practices to changing material states of affairs (stability and instability), practices attuning to materialities and attuning them (toys in the playroom), and practices oriented towards material ends (breast milk, solid foods, reflux, leaky bodies). And, as highlighted in Chap. 7, we never lose sight of the fact that all practices are material in the sense that they are performed bodily.

While I have not exhaustively outlined the concepts that will be used in the analysis that follows, I have revisited some of the broader ideas which frame the detailed exploration of things as an essential dimension of professional practices and learning. Other concepts will be brought into play at particular moments, zooming in or out where doing so offers valuable insights not otherwise available.

Materialities of Space

We begin our journey through the materialities of the Residential Unit by reconnecting with Chap. 5 and questions of space. Schatzki (2009, 2010) discusses space in highly material terms, including as a physical setting in which actions take place, but also in terms of material entities being near or far by virtue of their involvement in practices. As if we had just arrived at the Unit, we first take in the corridors, and then enter the closer and more intimate spaces of client suites. We then move to the communal and highly fluid space of the playroom, focusing on toys and questions of material attunement and forms of knowing in practice.

The Corridors

As discussed in Chap. 6, the Unit's architecture resembles an L-shape of two main corridors, with numerous rooms off each, and a cluster around the nexus, where the nurses' station is located (see Figs. 2.1 and 6.7). Let us focus now on the materiality of the corridors. They matter, literally, as masses of particular size, shape, and texture. Their length is sufficient to provide access to the required number of

client suites and other rooms. Had the design been one long corridor, this would have had problematic consequences, making cries more difficult to hear, and removing the focal point created where the two corridors meet.

Looking up to the ceiling, there are skylights above the nurses' station but nowhere else. As we look to the walls, only a window in the fire door at the end of each corridor leads directly to the outside and thus natural light. Both of these have blinds attached, often drawn down. This visual insulation from the outside world gives the staff control over light as a diffuse but highly significant form of materiality. On the wall by the nurses' station is a panel of dimmer switches used to adjust the intensity of light in each corridor. Stickers have been added, associating the left switch with the North corridor, the switch on the right with the West corridor. Markings also indicate positions of angle for the dial deemed suitable for children's waking and sleeping times.

This ability to manipulate light conditions enables the creation of a texture, connections in action, that respond to the families present each week, and the varying sleep patterns they wish to establish. Being able to make the corridors dark during the day is vital as part of creating conditions conducive to sleep for young infants, who often need one or two daytime sleeps. The dimmer switches give a precision in material control: blackout would prevent nurses from being able to see to write on behaviour charts (see Fig. 5.1), and would be unlike the material conditions in families' homes. (Chapters 5 and 10 discuss more of ways in which spaces of the Unit connect with spaces of home.) The markings for different light settings prefigure bodily actions of turning the dial, shaping what it makes sense for nurses to do when adjusting light levels. Over my many visits, I observed different nurses adjusting these dials, most often to or from one of the marked positions, but not always. Deviations from what the markings invite nurses to do occur due to judgements reflecting specific circumstances—perhaps one child this week seems to respond much better to slightly lighter or darker conditions. So, variable resistors, plastic switches, stickers marked with ink, the positioning of light switches within reach of the nurses' bodies, opaque ceilings and so on, assemble. They matter hugely as constituents of a site at which practices of settling infants for daytime sleeps occur.

There is one key place in the corridors we have not yet looked: down, to the floor. When we do so, we see pale wood-effect laminate. But this was not always the case: the floor used to be carpeted. While this was potentially more homely, the staff found it difficult to hear and locate infants' cries from nurseries down each corridor. The texture of the carpet dampened the sound: it hampered the creation, maintenance and fluid adjustment of connectedness in action through sounds. So the carpet was removed and replaced with a hard material. This is crucial as part of the site at which the bodily, knowing practices of attuning described in Chap. 7 are accomplished. Time and again I observed nurses sat writing notes at the nurses' station, when they heard a cry. They could sense its provenance not only as from one corridor or another, but based on volume and also aesthetic qualities that they learn to associate with particular children as the week progresses (the sound of their cries, rhythms of crying), a particular nursery and individual (see Chaps. 7 and 9).

Client Suites

We now turn off the corridor and into the more intimate spaces of client suites, assemblages that include spatial architectures, curtains, dimmer switches, music, and windows. Figures 2.1 and 6.7 show how along each of the two corridors are a number of client suites. Each comprises three rooms: a nursery immediately adjoining the corridor, a main bedroom for parents, and an en-suite bathroom accessed from the bedroom.[1] All bedrooms have an external wall with a window, and all suites have individual climate control equipment. Picking up the threads from the previous section, we may note the control that these arrangements offer parents and staff over the material conditions for settling children in the nurseries. This is important not only in terms of producing conditions that facilitate work on sleep and settling in the Unit. They also enable parents and staff to shape the materialities of client suites according to those of bedrooms and nurseries at home. In this way material connectedness in action has an element of 'haunting' about it (O'Dell 2009). Practices of the Unit and home hang together in part through the ways in which material connectedness in action is produced and modified.

Heavy curtains can be drawn across the bedroom window so that when parents open the door between their room and the nursery, daytime light does not flood in. Air conditioners can be set to provide comfortable temperatures, and to mirror the conditions in which the child sleeps at home. Floors are carpeted, providing comfort and a more homely feel. Lights in nurseries and bedrooms have dimmer switches. Furthermore, both rooms are also connected to a sound system through which soothing music is played 24 h a day. The volume of this can be set differently in each room, enabling staff and parents to negotiate and explore various sound levels. This sound is available for parents to take home in CD form, another form of hanging together.

The layout of the rooms in relation to each other and the corridor is important (see also Chap. 6). Positioning the nursery next to the corridor makes it easy for staff to hear infants' cries, and to check on them as they sleep, by peering through a window in the door (see Fig. 8.1). It also enables staff to bring parents out into the corridor, rather than into their bedroom, when going in and out of nurseries during certain kinds of settling. As discussed in Chaps. 5 and 10, this has an important function, turning secret rhythms into public ones (Lefebvre 2004, see Chap. 5, Hopwood 2014c), and producing corridors as shared pedagogic spaces where difficult settling is normalised. It also allows nurses to support more than one family at the same time. Telephones by the side of parents' beds enable them to call the nurses' station without disturbing children. Schatzki (1996, 2002) would understand this as a material arrangement in the form of a place-path array that enables spatially separated practices to hang together. Parents can call for help or advice without having to pass through their child's nursery. However, many parents commented that having to pass quietly through the nursery at Karitane

[1]This description is accurate as of the time of fieldwork.

Fig. 8.1 Sarah (as throughout this book, all names used as aliases), a nurse lifts the paper sign that covers a window

is helpful because there are often intrusions of noise at home. Here we see yet another form of materialities of home and the Unit haunting each other, and this becomes visible to us through a spatial approach to understanding materiality.

The small windows in the doors between the nurseries and corridors mean that parents and staff can check on a child without having to open the door, which could change in levels of light and noise. However the window's transparency creates a problem if children are sleeping at a time when the main corridor lights are brighter (the dimming of lights cannot be timed to match with all sleep periods). This is overcome by the placement of laminated paper signs over each window. These are cut to match the size of the window and are of thick enough paper to provide a shadowing effect. Each has text printed on it: Shh! Baby sleeping! Initially this reflected an intention to encourage quietness when cleaning work was being done. The text remains active in reminding parents and other people on the Unit that children may be sleeping at any time. However the text has become secondary to the use of the signs as light blockers—essentially curtains. The paper is made practically intelligible as part of a site of sleep and settling through its bundling with a particular set of bodily actions. The signs are left in place all the time, but the bendiness of paper is exploited when nurses and mothers curl up a corner peep through (see Fig. 8.1). Only a small line of vision is needed—sufficient to peer into the nursery and observe the bed or cot, without introducing unneeded light.

The case of these windows highlights how solid walls or doors, lighting systems and the layout of rooms, connect with other material entities such as curtains

and cots, and diffuse forms such as music systems and telephone connections. The paper signs act as signs when they are attended to as such, prefiguring quiet movements in the corridor. They are enacted as curtains at sites where they bundle with bodily actions and are made practically intelligible in particular ways. Properties of opacity, size, distance, and geometric relations come to matter as part of these assemblages. The corridors and client suits share multiple material connections. In contrast, the playroom is more contained, and it is the fluid materialities within it that warrant our attention.

Toys and Materialities of the Playroom

The practices and material entities of the playroom provide a fascinating site through which to explore attuning and other forms of practice-arrangement bundling. Schatzki (1996) argues that practices are performed by bodies (one kind of material organism), and not only proceed amid material entities, but are attuned to them. I described the playroom in Chap. 6, highlighting how it is produced as multiple spaces of general play, group sing-songs, quiet time before bed for children, and relaxation for parents. The central role played by material entities in accomplishing these changes was acknowledged in Chap. 6, and reinforces the arguments made here. Now my focus is on toys, maintaining a connection with materialised notions of space through the idea of space as the pertinence, use and attunement of the material world to practice.

The way toys of the playroom are attuned to the children present each week relates to how certain toys are contained out of children's physical reach and access. The playroom coordinators take a primary role in populating the playroom floor with toys that are attuned to the children on the Unit each day. Movements of toys in and out of the cupboards are not set by any stable routine or rhythm. Rather they are part of an ongoing process of matching the materialities of the playroom to the bodies (children) present, and the goals that parents are working on. Textures are produced, modified, and restored on a highly fluid basis. Materialities of the playroom are not static, but full of movement, agility and responsiveness. This is not a property of toys themselves, but a feature that requires a notion in which materiality is entangled with forms of knowing.

This attunement is gradually refined through emergent knowing-in-practice reflecting changing understandings of children and parents (see Chap. 9). The initial attunement combines information about children's ages provided on a copy of the Clients in Residence Sheet (see below). Early in the week, each toy is made practically intelligible as appropriate for children of a particular age through general rules of thumb. The coarseness of such judgements is well recognised, and as the coordinators get to know each child, the toys they enjoy playing with, and their interests, they make increasingly informed decisions about what toys to make available.

The composition of toys is highly fluid, and changes are prompted by a range of factors, including (dis)interest shown by children, levels and duration of attention (too many toys are understood to potentially distract children and discourage more involved, sustained play), weather (particularly affecting the outdoor play area), and parents' goals. In the case of the latter, it may be that relations between children during play are identified by parents as a focus for work, in which case toys that are of mutual interest to brother and sister (for example) may be presented, to allow parents to work on sharing toys in play. In this way the fluid presence of toys in the playroom creates a shifting texture that connects families and their goals, children's bodies, and emerging knowing in practice. These shifts can involve new materialities (previously untried toys), modifications (more dinosaurs today, given how much the children liked them yesterday), or restorations (let's go back to the cars that worked well the day before).

There are rhythms (see Chap. 5; Hopwood 2014c) in aspects of the attunement of toys to practices in the playroom. The mornings often display a range of toys ready for any family to come in. On some days, sing-songs or particular activities such as arts and crafts or messy play (see below) punctuate the morning schedule. During these times, many other toys are cleared away (the clearing up process is often turned into a fun game in which children are involved) to help children focus together on the group activity. After dinner, in order to help produce less stimulating quiet time in preparation for sleep, the loud and physically mobile toys (including fire engines, trains, toys with balls, buzzers, buttons etc.) are put away, and books are laid out. Each evening all the toys that have been used are cleaned with warm water and child-friendly disinfecting soap, to help stop the spread of infection. This points to blurring between bodies and objects that I discuss further below, linking back to the end of Chap. 7.

In discussing the toys of the playroom, I have illustrated how many material features and arrangements of the Unit are not static and inherited, but are actively attuned to the changing bodies present each week, wherein such attunement plays a crucial role in establishing the connectedness in action which is crucial if professionals' work is to unfold responsively and with impact for families. This brings us to the question of the organising work done by things.

Materialities of Organising

In Chap. 3 I discussed Schatzki's concepts of how practices hang together, and linked this with Gherardi's (2006) idea of textures of practices. Social practices do not proceed independently of one another, just as they do not proceed independently of the material world.[2] I conceive the Residential Unit as a horizontal web

[2]Kemmis et al.'s (2012) work on ecologies of practices is notable here (see also Tsoukas 2008). However for reasons of conceptual economy I do not take up these ideas in the analysis that follows.

of practices that hang together, through different forms of commonality and orchestration (see Chap. 2; Schatzki 1996, 2002). Gherardi's idea of textures similarly points to complex qualities and variations in density of inter-relationship between practices, and this section will continue to elucidate things as an essential dimension of connectedness in action. I highlight ways in which materiality does organising work, creating and maintaining relatively stable but also responsive and emergent relationships between practices.

Among the most important organising things are the whiteboard, communications book, clients in residence sheets, and signatures, each of which will be considered in turn. These artefacts are often ephemeral—brought into being, bundled with practices, and then extinguished in short spaces of time. Others are potent because they endure. This connects my discussion of materiality in this chapter with the complex temporalities discussed in Chap. 5. Through the analysis that follows we will also see that questions of space (Chap. 6) and bodies (Chap. 7) are never far away.

The Whiteboard

Opposite the nurses' station, at the nexus of the two corridors that form the Unit's distinctive L-shape (see Figs. 2.1 and 6.7), is a whiteboard, approximately 1 m^2 (see Fig. 8.2). As a 'floating text' (Nimmo 2014) it makes crucial contributions

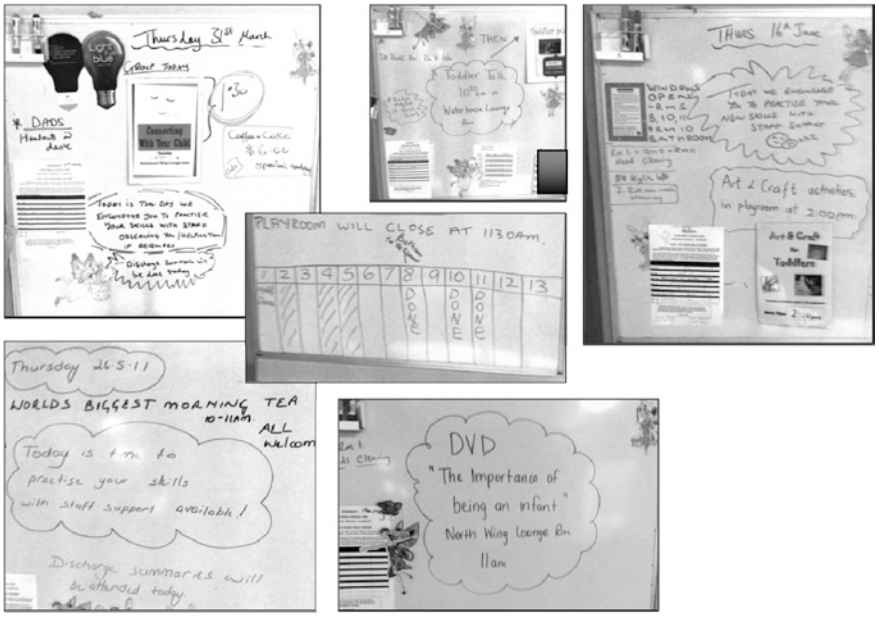

Fig. 8.2 The whiteboard

to the organisation and hanging together of practices on the Unit. The board provides a material home for notices that prefigure (see Chap. 3) bodily movements in space and time, helping to coordinate practices, and supporting the agile emergence and adjustment of a range of textures.

A notice announces that a toddler group will happen in a lounge at 11 a.m. (see Chap. 6, Table 6.1 for details of group activities). For the mother seeking support with toddler behaviour management, it makes sense to go to the lounge at that time. For the mother with a very young infant considering where she might find a quiet space in the late morning, the same notice may lead her to avoid the lounge. It is the site—the place where the materiality of the notice, forms of practical intelligibility, and the actions that result from it—where the whiteboard exerts its organising force.

Such announcements of group activities are a key way in which the whiteboard (or more accurately, temporary inked markings on it) help to coordinate movements of bodies and other material entities in time and space. The pram-walk on a Wednesday morning relies on the notice being brought into being and made practically intelligible in anticipated ways, so that parents congregate at the nurses' station with their children, pushchairs, sun-hats, outdoor clothes and shoes. But a major tantrum can alter that texture, displacing some bodies, or a rainstorm can change the dominant prefiguration so the prospect of an outdoor stroll becomes much less appealing. Once the group departs, the writing on the board is erased, only to appear in more or less similar form the next week.

Notices on the whiteboard also play a crucial prefigurative role in the coordination, sequencing and progression of practices. Lists are often used to document actions completed and to help plan and arrange what needs to happen next. Room numbers and ticks indicate which families have had their appointment with the paediatrician on a Monday. Staff names and ticks show who has taken their break and help nurses and the in-charge coordinate when to do so. On Fridays a series of boxes are drawn representing each of the client suites, and markings indicate when families have left for home, and when cleaning and preparation for the following week have been completed (see the centre for Fig. 8.2). These notices are routinely made practically intelligible in stable ways, becoming linked with forms of knowing-in-practice that guide staff in their decisions and actions: which families to bring to the paediatrician, when to go for lunch, when and where to move the cots in preparation for next week. Through their bundling with doings and sayings, the markings on the whiteboard bring a site into existence in which multiple practices hang together, simultaneously and sequentially, within and beyond the spatial setting of the Unit. They help to bring a functional texture into being.

The Communication Book and Clients in Residence Sheets

Other entities that act in similar ways, organising what happens on the Unit. There is a 'Staff communication book', kept in the handover room, in which messages

for staff are left. This is crucial in communicating with a workforce that is rarely assembled in the same space at the same time. The communication book is often used for reminders (a way to restore connections in action that might have been temporarily lost), or to introduce minor changes (textural modifications).

These messages of ink on paper are longer-lived than the ink on the whiteboard, which rarely survives more than a few hours. However their practical intelligibility may be fleeting or durable. Announcements that a staff member is sick may prefigure a set of responses that last as long as that particular shift. Details of a staff meeting remain relevant for the days or weeks until it has happened. Requests to purchase new CDs to replace scratched discs for the playroom may prompt short-term actions that lead to more lasting alterations to material entities on the Unit (new CDs!). Notes about changes in policy or procedures may be associated with changes in actions and connections between them that are more durable, as with a note that read: "Please ensure all children/babies are weighed. All staff are responsible. If B [shorthand for baby] not weighed by Dr. [paediatrician] then we need to weigh and record". Others help to bring about changes in the movement and storage of documents (such as where and when certain forms are signed by parents).

The communication book exerts this kind of force because staff members consult it when they begin each shift, making practical sense of messages and their implications in anticipated ways, following the courses of action or changes to them that the message and shared practical and general understandings, rules, and teleoaffective structures prefigure. These examples from the communication book illustrate and emphasise how materiality does not sit outside of time: things are not timeless, and their roles in the life of the Unit are temporally varied and complex.

An account of organising materialities would not be complete without mention of the Clients in Residence (CIR) sheets and some of the linked peripheral materialities that record knowledge about families. CIR sheets play a crucial role in coordinating staff activity and material arrangements each week, beginning by helping nurses know which rooms need cots or beds, and how many high chairs will be needed in the dining room (based on information of children's ages). The information also helps plan the week, signalling perhaps a large number of toddlers or very young infants. Knowledge developed through intake, for example relating to allergies or medications, are also manifested and prefigure actions such as use of coloured wristbands (for allergies), or practices of witnessing and signing off on medication.

As discussed in Chap. 7, many staff members create half-sized (A4) copies of the CIR sheet, adding their own notes. These are examples of what Nimmo (2014) calls 'floating texts'—indeed he describes very similar artefacts and practices in intensive care work. I often observed staff taking the sheet out of their pocket, quickly glancing, perhaps to figure out the names of the mother and children coming down the corridor. Personal notes act as reminders—distributed, materialised memory banks, or place-holders for ideas and suggestions ('didn't respond to patting, might try cot-rocking?'). Sometimes reminders are written on the backs of

hands, or on post-it notes—the latter particularly when the knowing-in-practice is intended to connect from one person to another. The more stable, shared CIR sheet, and the multiple, ephemeral, personal ones are crucial in enabling nurses and other practitioners to anticipate, respond, and adapt their work with each family.

Signatures

So far, I have progressed from the corridors to particular rooms, then to sets objects within them (toys in the playroom), and from there to particular objects (the communications book and clients in residence sheets). At this point I will zoom in on even smaller materialities: signatures. Elsewhere I have explored signatures as tracer objects that open up important insights into forms and practices of accountability and responsibility in partnership-based services (see Hopwood 2014d). Here my focus is on the organising work that signatures do, helping practices hang together. In particular the kind of hanging together discussed here is one of temporal and spatial coordination. I apply a broad notion of signature—not only full names signed in pen on paper, but forms of signing that do similar work—names on sign-up charts, checklists for staff breaks, and so on.

On every visit I made to the Residential Unit I observed a person signing a piece of paper using a biro pen. As Gherardi and Landri (2014) have discussed, signatures can be understood as material traces of a bodily presence at a particular space and moment in time. The signatures I discuss in this section are relatively mundane (they are not signatures on documents with legal authority), but in their everydayness play different but valuable roles in enabling the Unit to function effectively and efficiently.

Over the course of a week, parents may sign many pieces of paper in addition to the formal paperwork associated with goal-setting, public/private patient elective and so on. These include signing in and out when they leave the Unit, signing DVDs out from the Unit library, booking the spa, and signing up for massages, hairdresser appointments, or group activities. In some cases, as with signing in and out of the Unit, the association of a particular bodily presence with the ink on the page is important: mothers or fathers are signing on behalf of themselves and their children, and the paper artefact has some ‘bite’, for example in the case of evacuation when bodies will be counted. In other cases a dissociation between signature and body is no problem, as when a nurse puts a mother’s name down for the pram walk following a conversation with her about her plans for the morning.

These signatures do important coordinating work by prefiguring practices, changing what it makes sense to do. On many occasions nurses wishing to conduct a handover will try to find parents to see if they wish to be involved (see Chap. 9). Being a small and spatially bound environment, it is normally relatively easy to find parents. When they are not readily located, nurses will check for signatures in a number of places. On the nurses’ station, they see if parents have signed out

of the Unit (maybe to go for a walk), also looking for information as to time of departure and expected return. They also check appointment lists for social workers, the psychiatrist, masseuse, hairdresser, and so on. In these cases signatures act as indicators of a bodily presence somewhere else and for a particular duration of time. Translated into such forms of knowing-in-practice, these signatures then shape what happens next. It may make sense for the nurses to wait 15 min until the mother and child are due to return or the massage will finish. Or they may proceed with the handover without the parents involved. As the playroom coordinator waits by the whiteboard to lead the pram walk, the time of departure is prefigured by the names listed under the group activity. If names are written but the associated bodies are not present, then they wait, perhaps sending someone to look for the missing bodies. It may be then that a verbal confirmation of a change of mind or circumstance overrides the signature on the board, and the group departs. Ticks against names in lists of staff indicating breaks on the whiteboard function in a similar way. They make link between bodies and particular moments and spaces, showing that this body has yet to leave the corridors for her break, this body has already done so. They prefigure what it makes sense for other staff to do: if I take my break now, there will still be enough staff left on the Unit to attend to parents. Such signatures are not permanent, rigid tracers or markers of responsibility. Rather they are devices which help to produce agility and responsiveness in connections between actions.

Signatures can also be required in catalysing chains of action. If six parents sign up for the relaxation group in the playroom on a Tuesday evening, then staff move six mats, six pillows, and six blankets into the playroom before the group starts. These signatures are relatively 'weak' in terms of accountability, but strong in terms of shaping action and the associated material reconstitution of the playroom as a space for relaxation. These may seem like relatively mundane examples, but that is precisely my point. The Unit is not unique in its use of these kinds of signatures to help coordinate multiple activities and the movement of bodies and other material entities. But equally, without these signatures, tears would appear and endure in the texture of practices associated with the smooth organisation of the Unit.

Materialities of Stability and Stabilising

This smooth organisation is accomplished in other material ways. Amid all the emergence and unpredictability that inevitably accompanies partnership work, some stability is needed. The stability I refer to here is not a stasis in particular material entities, but their enduring *relations* with other objects, particularly in terms of location. Thus the discussion that follows furthers previous considerations of time (Chap. 5) and space (Chap. 6). By examining bubble wrap, scrap paper, CD players, notes around the nurses' station, pens, and clipcharts, I will show how material entities vary in their stability as material presences, and how

they also do stabilising work. Concepts of textured intimacy and rhythm enrich the analysis that continues to draw out themes of connectedness in action, space, time and bodies that permeate this chapter.

Bubble Wrap and Scrap Paper

Let us revisit an excerpt first presented in Chap. 7, when the focus was on bodies. While limited to avoid repetition, re-examination of the same data supports and directly illustrates the principle of the four dimensions as different points of departure, as overlapping ways of noticing different aspects of practices.

> Nurse Rachel is walking down the West corridor carrying an infant in her right arm. The child's head is resting against her shoulder and neck. Rachel passes the door to the spill room (see Figure 2.1), pauses, and rotates the handle with her left hand; this requires her to bend her knees slightly in order to keep her upright posture. She shuffles sideways and pushes the door open with her left shoulder, turning slightly away from the door to keep the infant's head safe. She squats down further, turns her head to face the child, offering reassurance through her eyes, smile, and voice. A few seconds later, she stands up, now carrying a piece of bubble wrap in her left hand. As she passes me (I'm stood a few metres away by the nurses' station), she tells me this is to 'try to catch a poo'. I retrace Rachel's steps (without an infant in arms), and nudge the door open. I fail to find the bubble wrap, and have to go fully into the room and search through a set of drawers located near the door.

This brief episode speaks to issues of bodily repertoires (Schatzki 1996) or forms of dressage (Lefebvre 2004) that are learned and practised by staff on the Unit as they comfortably hold or carry babies and infants while doing other things (see Chap. 7). For now I wish to concentrate on how this illustrates the importance of stable material relations.

The nurse was walking from the lounge at the end of one corridor, taking the child to her nursery where she intended to change a nappy, placing some bubble wrap inside in order to 'catch a wee and a poo', so that samples can be sent to the lab for analysis. She needed to pick up some bubble wrap in order to this, and its stable location enabled a smooth movement from lounge to nursery. Bubble wrap is made intelligible in practices of the Unit in terms of its impermeability in contrast to nappy fabrics which are absorbent).

Not only is the spillkit room close to the nurses' station at the nexus of the L-shape (see Fig. 2.1), but the positioning of bubble wrap in a drawer just by the door means that it can be accessed by a body carrying a baby which is often the case when bubble wrap is needed. Geometric relations between bodies and other material entities are important here—the drawer was within arm's reach and at a suitable height, and arranged so that only a small opening of the door enables them to be accessed. The position of the baby on the right hand side of the nurse's body means her left should is available to nudge the door, and her left arm can be used to reach the bubble wrap.

Each piece of bubble wrap is an ephemeral presence on the Unit, but the arrangement of bubble wrap in that particular drawer is stable. The maintenance of this arrangement and its practical significance depends on staff knowing where to replace the bubble wrap, and on staff knowing where it is. Not all stabilities of material entities in space over time are so significant. As with many institutions, there are clumps of 'dead matter' that receive little attention. A tray of used paper, the reverse sides of which are used as scrap, is on the nurses' station. The sheets at the bottom of this can be years old, as replacements are placed on the top well before the pile runs low. And of course, it is precisely the spatial and temporal instability or fluidity of some material arrangements that is crucial in other circumstances, such as the replacement of beds with cots to suit children's ages, the movement of chairs from the dining room to the corridor during settling, or the movement of mattresses into the playroom for the relaxation group (see Chap. 6, Fig. 6.3).

That said, bubble wrap is far from unique as an instance whereby stable material arrangements are important. Storage of wristbands, blank pages for progress notes, first aid materials, keys for locked rooms, cupboards or fridges, containers for lab samples, linen, toys, whiteboard markers, group evaluation sheets, admission and discharge paperwork, often-used phone numbers (a post-it note by the nurses' station), and so on, all reflect similar arrangements whereby the entities themselves are ephemeral but their locations and relations to other entities (including human bodies and their geometries which make them physically accessible) are stable.

Stability and Instability Around the Nurses' Station

Several months into my observations, I arrived one day to notice that the nurses' station looked very different. Most of the business cards and post-it notes that had been stuck on the inside vertical panel above the desk surface had been removed. These provided staff with quick access to useful information, such as the paediatrician's telephone number in his main clinic, numbers for local pharmacists or the laboratory used to test samples. In other words, they played crucial roles in establishing efficient textures that linked the nurses' station with other people and places. Within hours, replacements began to appear—the first being the business cards for the paediatrician and nearby pharmacist. Over coming days and weeks, more and more artefacts were stuck up. This kind of restorative work demonstrates how staff rely on the stability of certain material presences, and how they work to maintain and repair them.

In other instances, stable locations would be desirable but are not possible, in which case a series of practices and arrangements of coping are brought into being. The CD player is used in the playroom, during massage, and in the two nurseries by the nurses' station or in the paediatrician's office when it is used as a nursery. Its location is not temporally stable, nor does it follow a set rhythm in

its movements. Depending on the clients present each week, it may or may not be needed in the nurseries. When a member of staff needs it, perhaps for a playroom sing-song, or to set up for massage, there is no equivalent of the drawer in the spillkit room for bubble wrap. Locating the CD player requires emergent exploration, movement of bodies around the Unit based on where it might be, and often prompts questioning and relays of messages between staff members trying to find it. The CD player becomes part of a texture, assembled with bodily doings and sayings that manage and respond to its movements.

Pens, Stabilising Practices, and Textured Intimacy in Epistemic Work

An analysis of the stabilising work of things on the Unit would not be complete with examination of pens. Pens are crucial in the work of staff, particularly nurses, on the Unit, who regularly have to update behaviour charts (see Fig. 5.1), make notes on their CIR sheets, write progress notes, and so on. Very few aspects of clinical work on the Unit were computerised at the time I was there—notes are all handwritten. Statewide rules specify that formal medical records, must be written in black ink. However the behaviour charts require black and red (see Hopwood 2014c; Fig. 5.1). Biros with four colours (blue, black, red and green) are attached with string to the clipchart for each child, but all the nurses routinely carry at least one pen on their person, often more than one. Much of the time, nurses use the pens held to clipcharts by string. But on hundreds of occasions I observed nurses writing on behaviour charts with their own pen, rather than using the one attached to it (see Fig. 8.3, where a pen dangles from the clipchart, and a second is held in the nurse's right hand). Why would this make sense to do? The pens are in many respects identical, coming from the same supplier (only ink levels vary) so it is not a material difference that matters.

The answer lies (at least in part) in the texture of practices that have the effect of producing certain kinds of material stability or security, while also acting as coping strategies when breakdowns occur. Pens are given to parents, when they sign off on goals, fill in forms, and so on, but often are not returned quickly, if at all, to their original owner. Sometimes pens tied to clipcharts go missing. But in order to avoid interruptions or delays in their work, nurses need to have a pen to hand at all times. Further stabilising practices include stashes of pens kept in personal lockers—these became known to me when my own pen for writing field-notes ran dry, and a nurse took me to the locker room, and gave me one of her pens, teasing me that I should keep it a secret. Sometimes staff find themselves pen-less, in which case stabilising recovery practices are enacted: borrowing pens from colleagues, asking for fresh supplies from administrators. The significance of pens to nurses' work is made telling clear when they lend pens to one another: these doings are often accompanied with good-humoured comments such as 'Now don't go losing that one!', or 'I want it back, mind you!'.

Fig. 8.3 Nurse Julia stands outside a nursery with Olivia, a mother, while Thi, a playroom coordinator, holds a baby

Practices of stashing pens in lockers, carrying one or more pens on person, and attaching jokey caveats to loans to colleagues produce stability where it might otherwise be lacking. The result is that pens are more often available when needed. These practices are a response to and management of the emergent instability of pens as a material feature of the Unit.

Relationships between staff bodies, doings, sayings and pens also involve what Knorr Cetina (2001) calls textured intimacy between humans and objects (see also Jensen 2012). In my observations I clearly detected traces of intimacy between nurses and (their) pens. This was particularly apparent when I was briefly given a pen by a nurse during an admission interview. I felt like I had torn her professional body apart as she was unable to write while I held the pen, and writing is done through much of the admission process. Knorr Cetina's notion that embodied practices of object relations are associated with a sense of boundedness and subjectivity is apt. In particular her linking of body-object relations to epistemic work is crucial. Pens are, through the knowing doings or knowing-in-practice performed with them, an inescapable part of being a nurse on the Unit. The pen links the knowing body to the material artefact of the behaviour chart or medical record. There are moments, space-times amid particular material arrangements, where the

subject of 'nurse' (or social worker, psychologist etc), is bound up with (cyborg) body performing actions with a pen. Practices where both staff and parents write and sign have significant bearings upon partnership practices, in which epistemic work is shared (see Hopwood 2014d).

None of this important work could be done if pens and the artefacts associated with them were fixed in space. Pens often follow the movements of the people, in whose pockets they are stored. They also move via attachment to clipcharts. And so it is to movement that I turn my attention in the next section.

Stable Rhythms of Clipcharts

I now consider movements of artefacts in space and time. These movements are intentional, rhythmic and productive. I focus on clipcharts, because they are key points of reference in Chaps. 9 and 10, and because their daily migrations provide a stark contrast to the forms of stability and instability discussed previously. As ever, I am not discussing stand along objects, but rather communities of objects that refer to each other and combine in different ways (Lahn 2012).

There is one clipchart for each client suite on the Unit. Each comprises a firm plastic base with a square-folded lip at the top on which there is a number sticker corresponding to a particular suite. This lip is used to hang the charts on the wall by nursery doors, but also to present a vertical face to nurses when the charts are laid on the nurses' station, enabling them to immediately associate a chart with a specific room or infant. The clipcharts hold paperwork including goal summaries and reviews of goals, and behaviour charts: schematic representations of children's sleep, feeding, toilet, and behaviour activity over time (see Fig. 5.1). In front of these is a laminated piece of paper with a large number (again the room number), and a colourful cartoon animal.

From Tuesdays to Fridays a key feature of morning practices is the Handover from the in-charge nurse from the night shift to the morning staff (see Fig. 5.3). Handovers are key in establishing connectedness in action from one shift to another. In the morning handover all the clipcharts are assembled together in the handover room, usually spread out on the floor. The hand-er must give a detailed account of what has happened overnight with each family, and to do so refers to the relevant clipchart, using it (making it practically intelligible) as what Gherardi (2006) calls a memory artefact (see Chap. 9 for further discussion of handover practices). The chart is also enacted as an epistemic object (see Knorr Cetina 2001; Miettenen and Virkkunen 2005; Mulcahy 2012) when it provokes staff to question what they know and need to know, and as a tertiary artefact, when it is folded into discussions of 'why?' and 'where to?' (see Engeström 2007; Hopwood 2016). Having explored these aspects elsewhere, I focus here on movement. However it is important to be clear that these movements are so deeply entangled in the emergent knowledge work that characterises practices on the Unit.

After this, the charts pass to the nurses who are assigned to work with particular families for their shift. They may take the charts into the dining room, playroom, lounges, or client bedrooms, when they interact with parents, discuss plans for the day, or update the behaviour charts. They may take them to the nurses' station or other rooms such as the paediatrician's office when they sit and write progress notes. Otherwise they hang by the nursery doors. During handovers between morning and afternoon shifts, the charts are returned to the handover room, not *en echelon* this time, but in groups determined by the set of families assigned to a particular member of staff.

When the night shift staff arrive, the charts are all brought to the nurses station (see Fig. 8.4). Night staff are not assigned to particular families, and so must familiarise themselves with all families. During the night, the charts are often taken up the corridors when nurses help parents with resettling children, and fill in the behaviour charts in situ, but they are then taken back down to the nurses' station and referred to for writing progress notes. The next morning, the cycle begins again.

Here we see how movements and rhythms are required by, produced through and shaping of practices. The migrations up and down corridors, to and from the nurses' station, in and out of the handover room, are not random. They are governed by the needs and intentions of staff, and play a crucial role in establishing

Fig. 8.4 The clipcharts are assembled at the nurses' station, nurse Ruth writes up her notes

textures of practices. A sign of the reliance on these predictable movements, and on their regular reproduction lies in the fact that in all my visits I never once observed a member of staff looking for misplaced clipchart: they were not always in the same place, but they were always where they were needed and expected to be. This powerfully illustrates the need to consider materiality as inescapably bound up with practices, and knowing-in-practice.

Embodied Materialities Filling Out Practical Ends

This final section shifts gear, focusing on a particular form of bundling between practices and materiality, wherein particular practices are explicitly oriented towards effecting changes in the material worlds. In Schatzki's (1996, 2002) terms this is expressed as materiality filling out the ends of practices. The goals expressed by parents often point directly to material entities in their expression, and often these are difficult to dissociate from bodies. I explore this with reference to breast milk and solid foods.

Questions of materiality in the context of social practices are also questions of embodiment. In Chaps. 3 and 7 I have already discussed how boundaries between (human) bodies and other material entities are theoretically and empirically difficult to draw. ANT, for example, refuses any a priori categories that distinguish human and non-human. Haraway's (1991) notion of the cyborg has become widespread, while many feminist writers on bodies and embodiment, often drawing on psychoanalytic theory (Weiss 1999) blur these boundaries in different ways through notions of incorporation of objects within corporeal scheme. Schatzki (2005) mentions human bodies, other organisms, artefacts and things, not so much with a purpose of establishing exclusive, stable categories, but rather to point to the scope of reference in his notion of material arrangements. He frequently discusses cyborgian ideas, and explicitly points to fusing and intimidate entanglements between bodies and other things in his explanation of how practices and material arrangements bundle together.

In admission interviews many parents with younger infants express goals relating to breastfeeding. In cases with weeks-old babies this can form one of the most acute situations and quickest referrals to the Unit. Breast milk matters, as matter with valuable nutritional qualities. Breast milk is also a wonderful example of a form of materiality that defies location within stark body/other categories: made in the body, it transgresses the border of the skin, and matters in this nutritional sense only in regards through its subsequent transgression of the baby's body via the mouth.

Breastfeeding is understood by parents and staff as potentially important for more than nutritional reasons, and many mothers wish to breastfeed as part of developing a secure attachment with them. In some cases where direct breast-to-mouth feeding is proving difficult, supply lines may be used, enabling feeding in a similar postural or body geometric arrangement and potentially assisting in

the longer term with a move towards breastfeeding. In such cases the milk and the supply line equipment form the direct focus of attention and intention. When parents feed breast milk to infants through bottles or supply lines it is stored as Expressed Breast Milk (EBM). This has a series of implications for accountability and responsibility that are bundled with extensive material arrangements and embodied actions relating to locked fridges, measured quantities, and signed paperwork (see Hopwood 2014d).

Other parents identify and work on goals relating to weaning children off the breast and encouraging intake of solid foods. Many experience challenges with children who seem fussy, reluctant to try solid foods, or who protest when they seek the breast and are offered alternatives instead. The materiality of the solid food matters in terms of the nutrition provided by its physical composition. But taste, colours, temperature, texture, and volume also matter.

Encouraging the passage of solid food from plate or bowl to mouth forms a focus of parents' goals that again shows how materiality may fill out the ends that direct practices on the Unit. However when such goals are articulated, material features of food also compose part of the texture in which actions connect, shaping how practices hang together. Again there is a patterned multiplicity, aligned through purpose and intention (teleoaffective structure). I discussed above how the playroom coordinators play a crucial role in attuning the material arrangements of the playroom to the children present each week and in the context of the goals families are working on. When solid food intake is a focus for one or more parents, the playroom coordinators will often arrange a time for 'messy play', usually before lunch, and will discuss with the parents involved why this might be important.

Messy play involves presenting children with paint, plasticine, play-dough and other malleable things. These have important material connections and disconnections with solid food. They share some textures of squeeziness, viscosity, smoothness, and so on. These connections become significant when bundled with practices oriented towards encouraging children to eat solid foods. In play children's instincts often lead them to touch, feel, squeeze, and often taste. The messy play materials are all food-safe, and parents are encouraged to allow children to explore and taste to guide their play. Often, when at the dining table shortly after, and when encouraged and allowed to make a mess with their food, explore through touch and taste, children come to enjoy and be confident around solid food. Practices such as painting on hands help nervous children explore tentatively, and in an environment where the pressure of eating is removed. In these cases we can see a clear example of how material entities connect with each other through internal material properties, and through practices, filling out materially-oriented ends which focus at the porous, fuzzy boundaries between body and other.

The excerpt below comes from a handover between two nurses discussing precisely such work. The parents involved had come to the Unit seeking help getting their child to eat solid foods. Meal times had become very stressful for parents and the child, and the parents were anxious about the lack of food intake.

Hander: We thought about a sausage roll, maybe we could just chop it up and then the café sold the last sausage roll.

Handee: Oh dear!

Hander: So we went to fairy bread. Louise managed to get some fairy bread from Jade House. So while Louise was in here giving me a handover just before lunch, Diana was with the mother at the nurses' station and the mum said she actually said her daughter even wanted to go into the dining room.

Handee: That's amazing.

Hander: Knowing that she was going to be - that there was going to be fairy bread, hundreds and thousands.

Handee: That's fantastic.

Hander: But I don't know how much she ate, because she was playing with it, but she was putting some in her mouth like this, but mum doesn't think there's been much improvement.

Handee: But we've told her this could take four months. She wants it to work this week, now.

Here we can see material work (going to get hundreds and thousands), and materiality doing work (exciting the child about the dining room). We can also see how this work is folded into complex sets of expectations about the temporalities of change (see Chap. 5). I would draw attention here to the way these nurses are managing uncertainty in terms of what they know will work, and how long change might take—uncertainty being a key focus of Chap. 9.

It is worth noting, in passing, two other key ways in which practices of the Unit are explicitly oriented towards materiality. One is in regards to gastro oesophageal reflux, known often simply as reflux. It is a relatively common condition (in adults and children) where stomach acid leaks out of the stomach and into the oesophagus or gullet. It may cause considerable discomfort, often described in adults as heartburn, or may leave an unpleasant taste in the mouth. Once diagnosed, regular, intense crying is not understood as an issue of temperament, but as a material problem requiring materially-based solutions. The immediate ends that fill out the ultimate intention of reducing distress and discomfort for the child are focused on reducing reflux. This is often accomplished with relative ease by using a thickener with baby formula to increase the density of food and help prevent leakage of stomach acid. Also relevant here is the discussion, at the end of Chap. 7 of ways in which the Unit is practised into being as a 'well person facility': staff are constantly on the lookout for material leakages from bodies (mucus, vomit, coughs) that signify an unwell child or parent.

Conclusion

I have presented an account of materialities on the Unit that brings particular things into focus. I have zoomed out, exploring the windows, windows and floors of the corridors, and then stepped through the client suites. Here I showed how control over certain material conditions (light, sound), and creation of connections that are not based on immediate bodily presence, help to connect the practices of families and professionals, as well as those of the Unit and family homes. I then

emphasised the fluidity in material composition of the playroom, focusing on toys and the attuning work done by the playroom coordinators, and the responsive textures that result. The role of things in coordinating different practices in space and time was then explored, looking a the whiteboard, communication book, Clients in Residence sheets, and signatures. I argued that all of these can be understood as more or less ephemeral materialities with more or less durable consequences in practice. The way practices hang together is prefigured by these materialities, which themselves are the result of practices whereby notices, memos and signatures are frequently written, modified, and erased. Zooming in on bubble wrap and scrap paper, I showed the role these play in producing stability, before highlighting the restorative work done at the nurses' station when an assemblage of informal materialities was (temporarily) removed. Pens were then discussed, showing how practices make them available when needed. These pens are not just writing implements, but are bound up in the affects of practice, something captured in Knorr Cetina's notion of textured intimacy with objects of work. A sense of mobility was highlighted in my discussion of clipcharts and their rhythmic migrations up and down the corridors. Finally I returned to questions of the body, and its material transgression as an explicit focus of practices.

Thus this chapter has revealed a number of distinctive features of professional practices that have not been brought so sharply into focus when considering the other three dimensions. Taking things as a point of departure diffracts out different aspects, while at the same time these are not atemporal, aspatial or disembodied. This concludes Part II, and completes the foundational work required to move on. Part III builds on the account of times, spaces, bodies and things as four essential dimensions of professional practices and learning. My focus will now shift, extending this theoretical work into a distinctive and explicit articulation of professional learning in practice.

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