Locating design phenomena: a methodological excursion

Ben Matthews, Mads Clausen Institute, University of Southern Denmark, Alsion 2, 6400 Sønderborg, Denmark

An analysis is presented of a design meeting in which users and other stakeholders enter the design dialogue as 'others' who are talked about and spoken for in absentia, with particular attention paid to the circumstances in which these others are invoked. This lays an empirical foundation from which to premise a methodological discussion about researchers' practices of identifying design phenomena to analyse. In many analytical treatments, the circumstances in and through which phenomena (e.g. designers' actions) emerge tend to be stripped from those phenomena when they are treated as objects of analytical interest. This hides the actual work that designers are doing, work that is only recoverable through consideration of the circumstances in which design moves are made in interaction. Such analytic practices can be prone to generate an alien or ironic understanding of designers' work. This does not condemn such analytic approaches, but the point remains that there is much of importance that 'falls through the cracks' in such analytical treatments, particularly since a pivotal objective of many forms of design research is to account for design activity.

Keywords: case study, design activity, design practice, research methods, practices of analysis

When researchers seek to study design activity, they are faced with a large number of choices. The study of design has been identified as nothing less than the 'science of man' (Simon, 1981), design has been described as a characteristic that separates humankind from the animal kingdom (Cross, 1999), and many well-known definitions of design (Friedman, 2003 employs several in his abstract) have been formulated so broadly as to subsume activities as diverse as tying one's shoelaces and mastering a foreign language under their auspices. Thus, choosing *what* to study, and what to focus one's study on, at least with respect to these definitions, are not straightforward issues. It would thus appear that the methodological options open to design research are remarkably divergent, and the history of design research testifies to such a methodological diversity (Roth, 1999).

Obviously, this historical situation has not deterred design researchers from finding things to study and choosing ways to study them, nor has it arrested

Corresponding author:
B. Matthews.
matthews@mci.sdu.dk

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the progress of the field. But undoubtedly, there is value in scrutinising not only the claims made from empirical work, but also the methodological choices made in advancing such claims. Thus, this paper addresses a methodological trouble encountered in researchers' practices of locating and analysing design phenomena. I will demonstrate this difficulty through an analysis of designers' talk, focusing on an instance in which other stakeholders (e.g. users, installers, customers) enter designers' dialogue.

1 *Studies of design interactions*

Since the seminal work of Bucciarelli (1988, 1994), there has been increasing acknowledgement that design is a social process. Related studies documenting in detail the real world work conducted within design and technology organisations have built on and elaborated aspects of design's social practice; a cursory survey of such work would include practices such as designers' varied, coordinated and 'political' uses of prototypes and representations (Henderson, 1999), the social organisation of large-scale design work (Sharrock and Button, 1997; Button and Sharrock, 1998), the importance of shared knowledge as part and parcel of designing (Eckert and Stacey, 2000; Lloyd, 2000), the largely contingent, ad hoc nature of productive workplace interactions (Backhouse and Drew, 1992), and various rhetorical strategies (e.g. appeals to 'standard practice' or personal experience) employed by designers (Brereton et al., 1996; Lloyd and Busby, 2001). Of course, the phenomena subsumed under the 'social' rubric tend to subtly shift from author to author and study to study, and amongst these there is no consensus as to the extent to which issues once considered largely or exclusively technical (e.g. design requirements, knowledge of the engineering sciences) should be respecified as social. Perhaps it is in light of this situation that demonstrations of what 'design as a social process' might actually entail in detail still appear to be needed. The analysis that follows stands in this particular tradition of documenting the social nature of design practice, focusing on an instance where other stakeholders (e.g. customers, installers) are invoked in a design dialogue.

Previous studies that have documented how users enter design conversations reveal a variety of practical purposes to which such talk is put. Sharrock and Anderson (1994) catalogue the patterning of users' appearances in designers' talk. Drawing on Alfred Schutz's observations of the ubiquity of typification as a sense-making device (see e.g. Schutz, 1953), they describe the ways in which designers stereotype different kinds of users in the course of accomplishing their work. In their study of a photocopier design team, 'users' of photocopiers enter designers' talk in a myriad of ways; for instance, as particular social types with particular concerns (bosses or repairpersons), as mis-users (e.g. placing coffee cups that leave sticky rings on copiers), or as individuals with technologically limited, but task-focused interests in copiers as objects of use. Sharrock and Anderson also identify that at other times, designers' talk about users became a discursive means of legitimation—what

'the users' wanted, what they liked, what they said, what they did, etc. formed essential components of designers' arguments for or against certain design options. Invoking 'users', in cases like these, worked as an appeal to a kind of independent third-party authority and simultaneously served as grounds for design opinions.

In a fine example of an analysis of designer–user dialogue, Bowers and Pycock (1994) detailed the interactive co-construction of 'design requirements' out of discussions between designers and users around a computer application being prototyped. In their analysis, it becomes clear not just that 'requirements' are interactively produced, but that the work of producing requirements takes place in a field of relations in which much else besides is being done. For example, the users they studied rarely stated requirements in any direct fashion (e.g. 'I would like a form field here'), but instead couched their comments in a manner that was particularly sensitive to the potentially high cost that an overt change might require in a system that was already being prototyped. Such considerations were regarded not in addition to the specification of requirements, but as a part of them—the work of specifying system requirements was possible only through the management of concerns such as the status of the system in development and the magnitude of the consequent work that particular changes in the system might spell for the system designers.

Bowers and Pycock's analysis reveals the extent to which the setting of the design episode is vital for an appreciation of what actually, concretely transpires. However, the relevance of such considerations to our understanding of design processes remains largely unexplored. The analysis of designers' interactions that is presented in Section 4 of this paper is, in a similar manner, intended to show just how design-relevant considerations are interactively produced, and how an appreciation of what is going on in these discussions is contingent upon the particular circumstances in which these considerations are raised. This will serve as an example for a discussion (Sections 5 and 6) of researchers' methodological choices and their consequences for design research. However, as prelude to the analysis, a social phenomenon of relevance to the following analysis is first introduced: the making of 'assessments' in conversational interaction.

2 *Notes on 'assessments'*

Pomerantz (1984) has examined in detail 'assessments'. Assessments are evaluative statements made in conversational interaction. This is a remarkably ubiquitous type of event that typically includes, among innumerable others, mundane statements such as 'It's freezing today', 'That looks alright' and 'This is fun'. Pomerantz's work has detailed the structural and interactional properties of assessments taken from extensive recordings of naturally occurring conversation. These are instructive to review in light of the transcript that follows, and also because the making of assessments is part and parcel of

designing. Indeed, it would be difficult to conceive of design interactions that do not contain assessments of some kind.

While Pomerantz's work cannot be reviewed in the detail it deserves, several relevant features of assessments can be summarised as follows. Typically, assessments serve as invitations for agreement—they invite other conversants to join in praising this event, complaining about the weather, or insulting the boss, for instance. Thus, assessments are frequently followed by *second assessments*, which offer a second opinion on the matter being discussed. Some of Pomerantz's empirical examples of assessments followed by second assessments include

```
J   T's- tsuh beautiful day out isn't it?
L   Yeh it's just gorgeous

C   … She was a nice lady—I liked her
G   I liked her too.
```

For assessments of this kind (Pomerantz additionally details other varieties), disagreements are a structurally dispreferred response to them. That is, second assessments that express disagreement are rarely stated as simple contradictions, but are instead prefaced with a pause, and/or a statement that begins as though it is agreement, such as 'Well yes, but…', or 'Yeah, or maybe…' before stating a contrary opinion.

Several further features of assessments deserve mention. When assessments are met with agreement, but that agreement is expressed in less favourable terms, then the response is often treated as though it is a statement of disagreement. Another of Pomerantz's transcript excerpts is the following example:

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A   Oh it was just beautiful.
B   Well thank you uh I thought it was quite nice.
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This form of response (a 'downgraded agreement') is often received as though it is an instance where the second assessment is expressing a contrary opinion, in spite of the fact it is also making a 'positive' statement. However, it can be heard to be contrary by virtue of the fact that the initial assessment 'just beautiful' has been downgraded to 'quite nice'.

Interestingly, a gap of silence after an assessment is also an interactionally significant move. For example if the remark 'I think that shade of red is just perfect' is met with silence, that silence is likely to be heard as a token of disagreement. The point in bringing into relief these features of assessments is to illustrate that proffering assessments in ordinary interaction is something of a delicate, probing operation, analogous in many ways to making social invitations (e.g. 'would you like to see a film tonight?'). Assessments create

an expectation that they will be met with either agreement or disagreement, in much the same way that responses to invitations will be attended to for their display of either acceptance or rejection of the invitation. Assessments are delicate in the same sense that making a social invitation is delicate—they create space for the possibility of rejection. These particular features of the interactional properties of assessments made during routine conversational interaction lend additional sense to the analysis of the following design dialogue.

3 *Introduction to the case study*

The project under scrutiny here was organised as a collaboration between the Automatic Controls division of Danfoss A/S and the Danfoss User Centred Design group. This particular meeting occurred during the development process of a range of electronic controllers. The participants at the meeting included myself and another interaction designer of the new controller (both off-camera), a (guest) Danfoss international sales representative, and a Danfoss marketing consultant who was closely involved with the development team. This meeting was the last of four we (as members of the user-centred design team) facilitated between various stakeholders during the controller design project. These meetings were videotaped, which have provided the data for this analysis.

This meeting, like its three preceding ones, was used as an arena to provoke stakeholder feedback on the underlying concept of the new product range in development. The controllers being developed were for the industrial and commercial refrigeration market. Typically, these devices monitor and adjust refrigerator temperatures, controlling other components such as evaporators, condensers, display lighting, and rail heating, and settings such as defrost cycles. The platform concept for this new range of controllers was modularity—by packaging commonly used functions together and allowing supplementary features to be supplied in additional plug-in modules (e.g. modules might support the addition of relay outputs and/or sensor inputs), it was felt that the new controllers would be more adaptable to the particularities of individual client situations. For instance, large clients such as distribution centres and megamarkets have dozens of refrigeration units that operate with identical settings; currently such customers need to buy many controllers and configure each of them identically. The new modular product range would enable these customers to buy one master controller which holds the settings, and plug-in multiple input/output modules that are wired to the various components in the refrigeration system. The software that runs on the controller is also 'modular', which means that smaller clients such as corner stores can buy the basic hardware, but pay only for the fewer settings that they require the hardware to control.

Thus, a significant concern of ours as co-designers of these controllers was to elicit feedback from various stakeholders on the potential advantages and

drawbacks of the decision to divide up the functions between modules. As I have intimated, this series of meetings provided one such opportunity. We (the user-centred design team) attempted to capitalise on these meetings with clients, salespersons and engineers by introducing a simple exercise in which they were asked to apply the new, modular controller concept to a typical commercial use situation—a supermarket installation.

Originally, this particular segment of interaction was selected for transcription and analysis because I was interested in looking at how users and other stakeholders are introduced, represented and spoken on behalf of in design dialogues. It is noteworthy that in the meeting being analysed here, the sales representative was explicitly asked to serve the design team as a kind of proxy for his customers (refrigerator manufacturers, supermarket commissioners, installers etc.). Certainly, talk about other stakeholders is commonplace enough in design conversations. What is of note in this analysis, however, is how such talk works in the course of the meeting, and the role that it plays in the formulation of issues relevant to design.

4 *An analysis of conversational interaction*

This segment of conversation has been transcribed from a short stretch of video from this meeting. The conversants are referred to as Mark (M), a marketing consultant, Sal (S), a sales representative (see Figure 1) and Des (D), one of the two designers who is off-camera. The other designer (myself) does not speak in this segment. Within this fragment, several types of 'users' are referred to: the 'installer', the 'customer' (supermarkets who purchase refrigerators and controllers), and the refrigerator manufacturer—'OEM' (original equipment manufacturer) in the transcript. Also appearing in the transcript are names for different Danfoss controllers in the existing range: the '115', '116' (or often just '15' and '16') and 'EKC'; they are often referred to in relation to how they are currently mounted and wired in supermarkets. 'The basic' and 'I/O card' are two of the modules in the new controller range. In this session, the sales representative (Sal) is prompted by the other meeting attendees to do most of the talking. The direction of the conversation is guided mostly by Mark, the marketing consultant, who, within this short segment, twice calls for the conversation to focus on how the product might work for the installer. Mark and Sal have in front of them a floor plan of a typical supermarket layout, and small foam bricks that represent the different modules in the new controller range.

As is readily appreciable, numerous intricacies of interaction defy representation in transcripts. Readers are directed to Electronic Annex 1 in the online version of this article to view the video under consideration. The transcript notation that has been adopted here borrows from the abridgement of Gail Jefferson's notation (see Atkinson and Heritage, 1984, pp ix–xvi) used by Bowers and Pycock (1994). Words in parentheses, e.g. (word), indicate places where

the accuracy of the transcription is uncertain, empty parentheses () indicate sections of the video which were unable to be transcribed, concurrent activities with the talk, where deemed relevant, have been marked in angled brackets ⟨picks up model⟩, overlapping talk is signified by square brackets [hmm?] and the notation (.) indicates an untimed interval of silence.

As a preview of what follows in the analysis, I will show how Sal introduces a scenario about one type of client's (OEM's) preference for one type of existing controller model (the EKC). In the dialogue, this scenario emerges as a response to Sal's immediately prior negative assessment of the new range of controllers, an assessment which is not met with enthusiastic agreement. The scenario goes some way to softening the criticism as it emphasises that the OEMs' preference for the EKC is by virtue of its flexibility (they can install one controller per refrigerator case), a feature that the EKC has in common with the new range of controllers.

This short segment of dialogue (lines 1–79), occupying less than three minutes of the meeting, contains several assessments. To begin, I would like to draw attention to Sal's initial negative assessment of the new controllers—see the lines marked with (→) at 15–16 and 18–19, before following what transpires thereafter.

```
      1   M   but you see it as more expensive (.) ah (.)
      2       because you said this with the I/O cards

      3   S   yeah you see but the question is that you said
      4       that actually this was a kind of eh I/O card

      5   M   yeah

      6   S   (as well) so

      7   M   yeah when nothing is in it

      8   S   if depending on

      9   M   it is an I/O card, isn't it? (.)

      10  S   yep (.) so you need the basic for this one and
      11      it- (.) its only a matter of this (.) here and
      12      actually to have- to build this one here is
      13      actually a combination of these two together

      14  D   yeah

→     15  S   you're not doing really anything else (.)
→     16      not doing anything extra (.) exactly I mean (.)

      17  M   eh-

→     18  S   they're (.) more or less the same type of
→     19      solutions, no? (.) W- we come

      20  M   yeah

      21  S   we come out actually this one what we need here
      22      is a combination of this one and this one

      23  D   yeah

      24  S   what you have here
```

Sal criticises (i.e. offers a negative assessment) the concept for the new controllers between lines 15 and 19 for not being very different from the existing

possibilities offered by the current range of controllers. While there isn't occasion here to go into exactly why he sees this to be the case, suffice to say that it is a significant critique of the underlying concept—that it is, in effect, 'the same type of solution' (lines 18–19), it's 'not doing really anything else' (line 15), or 'not doing anything extra' (line 16). This is met with an unenthusiastic (but not particularly defensive) 'eh-, yeah' from the designer.

It is noteworthy to recall that, following Pomerantz, assessments work as interactional invitations for agreement, and that less enthusiastic (downgraded) agreements are frequently treated as expressions of *dis*agreement.[1] This observation may help make sense of the subsequent dialogue.

```
      24   S   what you have here

      25   D   yeah (.)

→     26   S   the only thing in one unit instead of two separate
→     27       units the thing is, (.) maybe it gives you mu-
→     28       much more flexibility to have it in two units. (.)
→     29       <shrugs shoulder> its okay (.)

      30   M   mmm yeah? (.)
      31       but how- how would it be at eh (.) a(t) field
      32       installation? (.) um

      33   S   (   ) (.)

      34   M   now we talked about OEM (.)
```

At the marked lines 26–29 Sal softens his initial negative assessment, offering that 'maybe it [the new concept] gives you mu- much more flexibility to have it in two units', which is followed by a fairly non-committal endorsement of sorts—'it's okay' (accompanied by a discernable shrug). At this point Mark attempts to move the discussion on, redirecting the conversation to look at how the new concept might work for a 'field installation' (lines 31–32), formulating the previous dialogue as 'now we talked about OEM' (line 34).

```
      34   M   now we talked about OEM (.)

      35   S   as long as you have a very simple one (.)
→     36       a very simple installation. We're improving very
→     37       much (.) to the concept we have today. (.) You know
→     38       in order to save the (quality) for for for the
→     39       installation point of view and also for the from
→     40       the the OEM

      41   M   from the OEM yeah
```

Sal curtly responds to Mark's question about a field installation ('as long as you have a very simple one' line 35). This, however, is not elaborated. Instead, he offers another, and this time *positive*, assessment of the concept for the new controllers, which has again been marked. Here he makes a strong positive statement ('we're improving very much to the concept we have today…'). One could note the change of pronoun: whereas Sal's criticism was addressed to 'you' back at line 15, here endorsement is made with 'we' (line 36); but there is more to this than that. It is also of note that this assessment receives from

Mark a second assessment (line 41) 'from the OEM yeah' that expresses clearer agreement than his earlier 'eh-, yeah' at lines 17 and 20. But of paramount interest is the following account about the OEM that Sal now develops:

```
      41   M   from the OEM yeah

      42   S   (and) its because of the eh you know in these cases
      43       you are we are using very much the 116 and the 115
      44       and then its costing the cust- the the OEM also a lack
  →   45       of flexibility that's what they are claiming [that's

      46   M                                                [because
      47       you have a 16 and you don't know where

      48   S   where to place it

      49   M   where to place it no

      50   S   exactly it's a matter of assigning that's the that's
      51       the [reason

      52   M       [hmm?

      53   S   why they like much more the EKCs (.)

      54   D   yeah

      55   S   because they can place one by one

      56   M   they pre fabricated it

      57   S   y- exactly

      58   M   and then

      59   S   and they can say they now have [they are claiming we

      60   M                                  [one section is finished

      61   S   say you know this is (differed) as a question it still
      62       has been eh seen from a different point of view

      63   M   yeah

      64   S   we have always thought (.) that to have a 15 and a 16
      65       was a good thing, and it was a good thing for the
      66       installer but a very bad thing for the eh

      67   M   yeah

  →   68   S   there's no flexibility for them because we are alway-
      69       all the time we are specifying and we are specifying
      70       from a customer (insist) the 15 and the 16 because we
      71       want to reduce the price down

      72   D   yeah

      73   M   yah

      74   S   but for them we ask the the OEM to mount it and then
      75       they are they are not very happy with it so
      76       (another point)

      77   M   because the next thing is that if you were going to do
      78       it as an installer, how would you then uh mount these
      79       things?
```

Earlier, when initially softening his criticism, Sal conceded that perhaps splitting the product into modules ('in two units') 'gives you mu- much more flexibility' (lines 27–28). Seeing the remainder of his talk in this transcript, we see that he has fashioned a scenario in which the OEM's complaint is exactly that—*a lack of flexibility* (lines marked at 45 and 68). Thus the new product concept, though it may not be 'doing anything extra' is, he argues, more flexible. This aspect, according to the account he develops between lines 42 and 75, is of vital importance to the OEM. In fact, it quite tidily justifies the central feature of the new product range (i.e. the decision to split the functionality

Figure 1 Still image from video. Sal (S) is on the left, Mark (M) on the right. Both designers are sitting out of view behind the camera. Sal is sitting in front of a supermarket floorplan, holding two of the bricks that represent the modules of the new controller range

of the new controllers into separate modules) with respect to the situation of a particular user group whom he is representing.

5 *Discussion*

Bowers and Pycock's observation that external parties involved in design processes are often hesitant to explicitly request changes in systems under development and that much criticism frequently takes very indirect forms (1994, p 302) may lend additional sense to Sal's retraction of his criticism, and its subsequent reformulation as a solution to the OEM's complaint about the lack of flexibility in the current controllers. We can also consider the delicate nature of the proffering of assessments in interaction for its relevance to the materials under consideration here. In any case, I want to draw attention to the way in which 'others' are, in this sequence, invoked for very practical, social, here-at-hand purposes. Sal uses a scenario about the OEM as a way to cushion a social situation—one in which he has criticised a product range in development in the presence of its designers. In the course of this 'cushioning' he goes some distance towards retracting his criticism, and it is through this retraction that we (as designers) are told much about which products in the current range of controllers different user groups like and why. For the OEM, it is the EKC (lines 53–55) because it simplifies the assignment of controllers to the refrigerator cases they control, thus they can install controllers 'one by one'—one controller per case that they sell. On the other hand, installers prefer 'a 15 and a 16' in lines 64–66 (though the reason for this is not made explicit). And we find that, similarly, the sales representatives always specify 'the 15 and the 16' (lines 69–71) for the supermarket customers. We discover that the products that salespersons promote for supermarket customers in order to keep costs down (line 71) are the same ones that the OEMs do not like to pre-mount in their refrigerator cases.

The interactional work that such talk of 'others' (customers, manufacturers, installers) accomplishes is a notable feature of design dialogues. The case I have made in this analysis is that Sal employs his talk of OEMs to cushion his earlier criticism of the platform concept for the new range of controllers. But importantly, in providing the design team with the scenarios developed between lines 42 and 71, he is not simply answering a question of theirs, engaging in a task that they have set, nor is he idly or dispassionately describing a situation he is aware of—he is repairing a social circumstance in which he finds himself. This is not an example of designers getting 'off topic', of design conversations straying on to 'social' topics. While those who work successfully among colleagues may be well aware of the value and necessity of 'task-peripheral' interactions, this is not what it is we have here. What we have is nothing peripheral to the design task but is, instead, inseparable from it. It is the skilful and simultaneous management of social relationships in and through work tasks, and this is something of ubiquitous importance to work interaction. Thus, we might say that it is principally *social* work that is done through Sal's account, and here, the design work almost appears as a by-product of the achievement of social ends. The point is that design work is achieved *through* such management of social settings, and not in opposition to it nor comfortably in parallel with it. To acknowledge that Sal's account of the OEM serves social purposes is not to lessen the veracity of that account; it is to appreciate the nature of its production. To ignore or gloss this fact is to risk missing the circumstances through which design issues emerge, design decisions are made, and design work is accomplished. Conversational interaction, of which design interaction may be a special, but non-exempt case, performs work in the social world of which it forms a part. It is not just idle 'talk about' something, but is interactively produced for specific (and often inspectable, discoverable) purposes at hand.

There can be a number of potential applications of analyses of this kind. Certainly, a comprehensive understanding of what design interactions accomplish in situ (to which this analysis is intended as a contribution) may do much, for instance, to inform the organisation of occasions, meetings, exercises and other social arenas in ways that might provide fruitful grounds for eliciting and understanding the production of accounts that enable designers to formulate user requirements and develop understandings of contexts of use. However, my present purpose is to use this analysis as a basis to discuss a methodological issue in design research that is of central importance to studies of design. This has to do with researchers' practices of locating design phenomena.

6 *Practices of locating and analysing design phenomena*

Research of many different stripes operates by identifying and isolating empirical phenomena of potential interest. Such practices are locatable in many different kinds of research irrespective of commitment to methodological paradigm. Eckert and Stacey's (2000) collection of 'sources of inspiration' is one example from a naturalistic, ethnographically inspired study. One of the

objects of their work was to explain why communication via design precedents (i.e. previous design examples) was so prevalent in knitwear design. Defining 'sources of inspiration' as 'all conscious uses of previous designs and other objects and images in a design process' (p 524), they proceed to categorise different types of information conveyed through such sources: information about individual designs, styles and moods. In developing this analysis, Eckert and Stacey make a number of analytical moves: they break down this notion of 'source-based' communication into syntactic and semantic elements; they map out 'design spaces' using sources as reference points; and of direct relevance to the present discussion, they categorise the different uses of source examples as communicative resources with respect to the different stakeholders being addressed by designers (e.g. colleagues, superiors, customers). They conclude that such sources of inspiration are valuable in design processes for their ability to communicatively explore abstract design spaces.

I use this example because it is a fine example of design research, and makes a suitable contrast to the form of analysis I have attempted to demonstrate in this paper. I could equally have drawn from numerous others where similar analytical moves have been made (even if under the auspices of very different philosophical and methodological positions). This is an example of analysing design activity through the selection of a design phenomenon (be it 'sketching', 'communicating through examples', 'invoking users in dialogue', etc.), defining its properties by abstracting them from particular cases, and insightfully using metaphor or theory to elucidate that general phenomenon.

However, when we closely consider such procedures we see that in a number of respects the original phenomenon (whether an event, conversation, action etc.) must be glossed over in order to render it analysable in those terms, for instance as 'source-based communication' with 'superiors'. And it is possible to see that such analytical categories may impose relevance, rather than discover it. Thus, in Eckert and Stacey's example, whatever it may have been that transpired in the meeting between designers and superiors has been rendered meaningful through their analysis by presenting the types of communication used there as though they were occasioned by *these particular* aspects of the meeting—that 'designers' were talking to 'superiors'. However sensible, intuitive or probable this interpretation of the event may seem, it is also this presumption (of the particular relevance of *these* categories to *this* data) that is open to question. More importantly, it is a presumption that is *itself* open to an empirical investigation of the data; that is, it is possible to inspect the data to see if this analytical move is warranted.

A related methodological issue raised by this excursion may also come into focus: what might be readily identifiable phenomena for analytical purposes, under closer inspection, may not be uniform as phenomena in the first place. They may not be the 'same' phenomena. Looking in detail at any one case,

how the event is occasioned, what work it performs, what local systems of relevance it relies on for its particular sense, etc. may well reveal, as I suggest here, that analytically specifiable phenomena may often be only that: *analytically specifiable*. For instance, the above analysis is not just one archetypical example among many of a salesperson presenting an account of a customer; and were we to treat it as though it was just one example among many of such a phenomenon, we would run the risk of mischaracterising the other examples. These, on inspection, and in all likelihood, would be accounts produced for *other* local, specific, occasioned relevancies. The social, in situ work performed by invoking an account of the OEM is, arguably, only incidentally (or, even, coincidentally) *about* salespersons and OEMs, although (and in spite of the fact that) this aspect is the particular feature of the exchange that has made it of value to analyse in this context, and identifiable as a practice of potential interest to the field of design research.

The analysis that I have presented attempts to look in detail at design interactions in order to determine the aspects of the situation that occasioned the particular interactions that transpired. In this way, it opens the possibility that the analytical relevance of categories does not need, in any strong sense, to be an analyst's a priori or theoretically determined choice, but is itself investigable and discoverable in the details of interaction. This analysis reveals that the accounts of installers, customers, and (in particular in this example) OEMs given by Sal were occasioned by the local circumstances of the ongoing interaction—he had criticised a product range in development, and accounts of significant 'others' were produced in the course of cushioning this criticism. The difference between this form of analysis and others I have used as contrasts above can readily be seen had an analyst, with this same set of data that I have presented, made quite different choices. For instance, had this exchange been treated simply as an example of one between respective representatives of sales and marketing divisions, and had the salesperson's accounts of installers, OEMs and customers then been coded in terms of the kind of 'information' they contained, we would be left with a very different 'story', one that would be prone to portray the salesperson's accounts of these 'others' in a quite different and potentially ironic way.

Many varieties of research accounts have the potential to ironicise their material, and not just through coding practices. For example, had this interaction scene been viewed as a small-scale example of a particular theoretical model, we can also see such a potential for irony. Prior theoretical structures are prone to frame the local setting being analysed as a site of a general phenomenon, of interest by virtue of the similarities this particular case has to a larger, general pattern; whether that pattern be 'class conflict', 'developmental learning', 'reflective practice', 'design constraints and solution search influences' or a host of other topics of potential interest to the field. But in each case the details the

researcher presents so as to demonstrate the conformance of the particular to the general *must be* selective details (Matthews, 2004).

The point to be made is that when analysts gloss the details of the design activities they study, the data so glossed may become available to serve any variety of theoretical agendas. This is both an advantage and a disadvantage. For example, the very same data may be used in one analytical treatment as an example of requirements' specification; in another, of gender inequality; in yet another, of mere 'information transfer' between 'neutral' parties. Of course, it is always possible to impose any of these frames onto design activity, and equally possible that the results will be insightful, illuminating, suggestive, of practical value, and the rest. In different ways, one can locate similar practices of analysis in a multitude of examples of design research (see Matthews, 2004): in Schön's (1983) empirical unveiling of the consistent structure underlying reflective practice across the professions; in Hales and Wallace's (1988) important demonstration of the large volume of design work not accountable in terms of prescriptive design methods; in the various attempts to code designers' verbal protocols as a means of revealing a generic structure to designers' problem-solving work or cognitive activity (e.g. Eckersley, 1988; see also contributions to Cross et al., 1996). There can be no doubt that this kind of research has been and continues to be of great value, particularly for its ability to enable others to draw on these understandings to guide their practice. Among the many examples of the unquestionable value of such understandings-for-practices are design educators who develop curricula, design practitioners who develop and enact methods and processes, and researchers who construct studies. Thus, the point of bringing out the similarity of the methodological logic of these various kinds of studies is *not*, in what would doubtlessly be a futile attempt, to invalidate these approaches, but simply to highlight that many of the details of what transpired and just how it did so are necessarily passed over in these analytical treatments. Furthermore, if an important aspect of design research is to account for actual, lived design activity, an appreciation of exactly what is missed through the analytical choices made by design researchers should be of vital importance in bringing us to a deeper appreciation of practice, and, importantly, to a heightened awareness of the practices of research.

7 *Concluding note*

My own analysis is perhaps better seen as a component of a methodological demonstration than as an analytical archetype. This kind of analysis is not, nor should it be, the only form of design research. It does not lend itself particularly well to generalisation across cases (as it argues that data must be considered on a case by case basis in order to be understood on its own terms), nor is it particularly amenable to theory construction. In light of the methodological focus of this paper, a note on my own methodology is appropriate. The analysis of research practices presented above draws heavily from

Garfinkel's (1967) critique of social science, and the subsequent development of his and related ideas in others' work. Readers familiar with such programs of research will recognise the extent to which my discussion has been informed by that body of work. While many of the points are not particularly new, their relevance to the practice of design research has rarely been pointed out. Broadly related methodological discussions (addressed to different fields) are readily available elsewhere (e.g. Lynch and Bogen, 1996; Edwards, 1997; Schegloff, 1997; Crabtree et al., 2000).

Naturally, the analysis presented here is not immune from scrutiny of *its* methodological and analytical choices. Thus, I will try to make these explicit. Clearly, no analytic approach floats entirely free from theoretically informed commitments. Viewing design activity in this way (i.e. the way I have attempted to analyse this data) requires that one look at language use, not necessarily as a means of describing the world, but as a form of taking action in a socially meaningful world. This is an insight generally credited to the work of the later Wittgenstein. The analytical approach is informed by the study of social order developed by Garfinkel and Sacks which seeks to find order 'at all points' (Sacks, 1984), in all interactions. It acknowledges that there are discoverable, observable structures of interaction (e.g. Pomerantz's work on assessments) that can be considered general competences that members of society possess in order to engage in, understand and accomplish social interaction (Heritage and Atkinson, 1984, p 1). Temporal aspects of interaction are, in this view, vital aspects of the organisation of what transpires and inseparable from an appreciation of it. Thus, it is an approach that also requires that the data to be analysed be recorded data, reviewable for analysis in real time. Obviously, these decisions are not atheoretical—they are theoretically motivated, just as the choices other analysts make are. But these choices are made with a different aim in mind, and that is, as I have suggested, to refrain from imposing a general, theoretically driven understanding on the case (and/or seeking necessarily to derive one from it), but first to look in living detail at the data in order to recover the understanding, the sense, that the interaction had for its participants during its course.

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1. There are also unmistakeable structural differences between the 'assessments' in my data and Pomerantzian ones, most notably that downgraded agreements do not appear to be structurally dispreferred in the same way, e.g. they are not always prefaced with disagreement tokens. However, a detailed examination of institutional 'design assessments' and their structural features is beyond the scope of this paper.