To do what we usually do

An ethnomethodological investigation of intensive care simulations

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Abstract

Simulators provide great promises of pedagogical utility in a wide array of practices. This study focuses on the use of a full-scale mannequin simulator in training of personnel at an intensive care unit at a Swedish hospital. In medicine, simulators are a means of doing realistic training without risks for the patient. Simulators for use in intensive care medicine are built to resemble as closely as possible the human physiology. In the studied sessions the simulator (a Laerdal SimMan) is set up to be an as-authentic-as-possible replication of the nurses’ regular, day-to-day practice.

In examining the training-sessions, it was found that the participants often did other things than “proper” simulation, such as joking or making comments about the simulation. These “transgressional activities” were studied from a perspective of ethnomethodology, using video-recordings of the session. These were transcribed and analyzed in detail using ethnomethodologically informed interaction analysis.

Several themes were developed from the recordings and transcripts. These have in common that they demonstrate the participants’ own achievement and maintenance of the simulation as a distinct activity. The analysis provides an account of how the local order of the simulation is upheld, how it is breached and how the participants find their way back into doing “proper” simulation. It is an overview of the interactional methods that participants utilize to accomplish the simulation as a simulation.

This study concludes with a discussion of how this study can provide a more nuanced view of simulations, in particular the relation between simulated and “real” practices. Notions of realism, authenticity and fidelity in simulations can all be seen to be the participants’ own concern, which informs their activities in the simulation.
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Introduction

This is a study of the practical use of an intensive care simulator. It is concerned with the detailed actions that take place around a life-sized human mannequin on which intensive care medical personnel train their skills. Such a simulator is a highly sophisticated piece of machinery that holds great promises for learning in a safe and controlled, yet very realistic environment.

Simulation is seen as an increasingly important aspect of health-care education (Liu et al., 2003). Skill-centers are being set up in various Swedish hospitals, using advanced and expensive simulators to improve performance in students and staff. Doing realistic intensive care training is difficult, as it would involve unnecessary risk for patients. In response, simulators are used in order for health-care personnel to enhance a wide variety of skills, both basic procedural practices as well as diagnostic skills and crew resource management, CRM (Vozenilek et al., 2004).

The intensive care teams that participate in the simulations that are studied are to perform their regular duties in a fashion that closely resembles their ordinary work practice. This means utilizing their knowledge of diagnostics and treatment of various medical problems that require intensive care, such as respiratory failure and cardiac arrests. The procedures for diagnostics and treatment of the simulated patient (the mannequin) follow the more or less standardized practices used in any intensive care ward: talking to the patient; administering drugs; analyzing blood samples; using results from x-ray scans; defibrillation and many more. Doing all these things in a ways that closely mimics their normal work seems to be an effective strategy for learning and training complicated and potentially dangerous skills and procedures that done incorrectly could harm the patient (Vozenilek et al., 2004; Satava & Jones, 1999). As a common sense judgment would say: what could be more effective in perfecting the teamwork needed to successfully perform invasive surgery on a patient in a critical condition than actually doing the same procedures on a machine that reacts as any other patient would, without running the risk of harming the patient on the way?

After observing several such simulations it was obvious that the practice of performing actual simulations were far from the idealized visions presented by advocates of full-scale simulations in health-care education (such as Satava & Jones, 1999). Participants frequently seized to do their proper work of performing their regular duties as nurse, auxiliary nurse or doctor. Instead, they
often did a lot of other things that the participants did not see as part of a “properly executed intensive-care simulation”: they cracked jokes (at the expense of the patient, colleagues or the hospital); became unsure what was part of the simulation and what was not; made up their own rules for the proceeding of the scenario or had to stop and make sure that everyone else were understanding the simulation in the same way as they did. That the activity of doing these simulations involved a whole lot more than one would first expect was evident in every one of the 20 or so simulations observed. Much of the time spent in the simulation was being used to do things that cannot be called part of “proper intensive care work in a simulation”, the activity that the participants came there to do. The frame of proper intensive care work was frequently breeched and interrupted. Despite this, it seemed as if the participants actively oriented to the fact that some of their actions breeched the order of the simulation, and so they concertedly sought to return to doing their proper work after longer or shorter periods of time.

It is the aim of this study to try to explicate the detailed features of such events of breech in the simulation. All the before mentioned events constitute activities that go beyond what the participants are supposed to be doing in the simulation. Using Lynch’s (1993, p. 279; 1985, pp. 169 - 170) term they are transgressional: activities that lie beyond the “frame”1 of proper medical work in a simulation, yet at the same time are sequentially and topically interconnected with the activities preceding and following them. This study is concerned with these events, both in how they transgress the order of the simulation, but also how the participants work to maintain the order of doing what they are supposed to do in the simulation.

Studying such transgressional activities might be able to say something of interest with regards to the practical uses of medical simulators. This is an issue that has not been extensively studied before. Generally, studies of simulation concern themselves with analysis of technology (Liu et al., 2003), participants’ post-simulation reactions (Dieckmann et al., 2003; Reznek et al., 2003) learning benefits of simulations (McGaghie et al., 2003), ethical dilemmas resolved in the simulation (Gisondi et al., 2004) or cost-benefit analysis of simulator-use (Gestrelius, 1993).

1 The term “frame” is here used in a common-sense way in order to denote the interactionally achieved accountable borders of the simulation. In ethnomethodological terms, it would be written [frame]. It has nothing to do, in a technical or theoretical sense, with Goffman’s term and theory, presented in his book Frame Analysis (1974).
Although there are numerous studies on medical simulations specifically, there are but a few that, in a thorough fashion, has tried to provide detailed accounts and analysis of the concrete interactions that occur in a simulation. Rystedt (2002) and Johnson (2004) are exceptions to the rule that studies of simulations show everything but the minutiae that are the work of doing a medical simulation. Working in traditions of socio-cultural research and interaction analysis Rystedt and Johnson’s studies both show the viability of analysis of concrete interactions in various kinds of medical simulations, together with discussions of the achievements of the interconnections between the simulation and the medical practice being simulated. They both analyze aspects of the simulations that show them as simulations.

This study examines the transgressional activities that at the same time are both part of the simulation and break its boundaries. This is done under the auspices of ethnomethodology and interaction analysis. It tries to outline the interactions that make up such events, how the frame of “proper intensive care simulation” can be put aside for longer or shorter periods, but also how the participants provide interactional means for each other to enable a return to the “proper” activity of doing intensive care in the simulation. The study tries to answer questions of how these events come to pass, how they develop and how they end; their sequential relationship with all other activities in the simulation. This includes the practices of engaging and disengaging in the simulation session itself. These events are recurrent, visible, public, understandable, stable and ordered phenomena (what ethnomethodology calls accountable phenomena, see Garfinkel, 1967, p. 1 and the further discussions of this concept on page 34 in this thesis).

The research question of this study can be summarized: “how do participants formulate their concerted actions in the simulation as accountably within the frame of what they are supposed to do, and how do they formulate their concerted actions as accountably outside of that frame?”

Importantly, the ethnomethodological stance that this study takes enables it to answer these questions in a non-theoretical and non-ironic way. It utilizes as its primary source of data videotaped simulation-sessions, and being non-theoretical it does not commence by stating a theoretically

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2 For those already acquainted with the jargon of ethnomethodology, following Garfinkel and Sacks (1970) the more specific question this study asks is ”what is the work for which [doing regular and transgressional work in an intensive care simulator] is that work’s accountable text?”, where the brackets denote a gloss and a formulation.
derived hypothesis, which the data would verify or falsify. Being non-theoretical also means that
the analysis proceeds through adding or subtracting as little as possible from this data. This
means that the analysis draws on the participants’ own accounts and formulations of their current
situation, without throwing analyst-induced psychological or sociological formulations of the
participants’ behavior into the mix. It provides descriptions of ethnomethodology, without
transforming the participants’ actions and accounts into (in Garfinkel’s words) formal analysis
(Garfinkel, 2002, pp. 25 – 30; 121 - 135). To be non-theoretical and non-ironic does not mean to
let the data “speak for itself”, but to analyze the data from the participants’ perspectives in all
their specificities, without resorting to generalizations, theory or model-constructions in order to
explain their behavior.

Generally, the analysis can be read as an account of the details of doing a hybrid activity (Linell,
2005). Hybrid activities are those where there is a sense of ambiguity regarding what is being
done, where participants have differing agendas or goals with their communicative projects. The
work being done is not clear cut: the framing of the activities in the simulations are understood in
different ways by different people at different times, specifically because the relation between the
simulation and the practice being simulated is ambiguous. This study will show some of the
problems that the participants find in connecting the activity of doing medical work in the
simulator to the activity of doing medical work in their day-to-day work practice. This means
working out an ethnomethodological account of doing the simulation as a boundary practice
(Rystedt, 2002).

Since the analysis largely revolves around the issue of fidelity (the congruence between the
simulation and that which is simulated) it could be used as a means for discussing questions of
“real” practice versus the simulated version of it. It can perhaps show a more complex picture of
the simulation than as the interactive illusion (Linderøth, 2004) it is often portrayed to be, including
issues of presence and immersion in the simulation. Because it stresses the point that these

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3 In fact, the initial observation of orderliness in the simulations that could be formulated as "breach-and-return-to-
proper-activities" was not a theoretically driven perception. Instead, following Rawls (in Garfinkel, 2002,p. 23) "the
certainty that order is displayed in the concrete details of enacted practices is not only, or even firstly, a theoretical
assumption, but also something someone feels when observing empirically the patterned orderliness of certain social
occasions". For me, the simulations were such social occasions, and the orderliness of that situation is available right
there, right then.
questions can be studied using interaction analysis and ethnomethodology, it can provide a participant’s view of these issues, how they are dealt with concertedly at the moment that they become topics of the conversation in the simulation. The account of simulations that this study provides is an attempt to deal with questions of fidelity and immersion in a more empirically detailed and less theoretical way.

The aim of this study can be summarized as the following: through looking at transgressional activities in intensive care simulation provide an “outline” or “map” of how the activity of “proper” medical work in a simulation interactionally connects with and is related to activities that are eventually deemed “improper” or “out of order” by the participants. Giving the reader a sense of the problems that the participants find in these simulations, (the problems occurring because it is a simulation) and how those problems are interactionally resolved is the primary goal of this study.

A collection of detailed accounts of doing simulations could serve as a useful resource in a number of different areas. Being an ethnomethodology of doing simulator-work it could give someone interested in communication science in general, and ethnomethodological studies of work specifically, new insights into the working order of a specific work setting. Hopefully it will say something about the achievement of social order in and through this activity, that is, say something of sociological interest. It will thereby be an addition to the corpus of ethnomethodological studies of work (Garfinkel, 1986).

For those with more educational and pedagogical inclinations it could perhaps be read as a novel and unorthodox way of studying learning and work in simulations. Someone working with or conducting research on simulations, medical or otherwise, could be interested in this study since it can reveal details of simulations that perhaps are missed using other approaches. The results

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4 This study can be seen in the light of the ethnomethodological interest in “reality analysis” (Hester & Francis, 1994, p. 99): “This interest is a fundamentally descriptive one; it seeks to describe the mundane practices in and through which persons are oriented to issues of what’s real, true, genuine and so forth. Furthermore, it adopts a ‘family resemblance’ view of reality analysis. In other words, there can be as many different kinds of reality analysis as there are occasions on which persons engage in the activities of reporting, questioning, interpreting, deciding and explaining what is or is not the case, what is truth and what is error, lies or fiction, what is ‘real’ and what is not – in whatever locally relevant senses these distinctions are employed”. The authenticity and fidelity of the simulation is something to be investigated through examining the participants practices of doing and talking about these things.
and discussion on immersion and presence in the simulation can perhaps be applied to research concerning other kinds of immersive artifacts, such as computer games. This study does not provide an “implication for design” clause, and does not give any recommendation on how to develop or use simulations. Instead, it could be used as data for those engaged in these disciplines (Koschmann et al., 2004).

Being a master thesis in cognitive science, it addresses questions of cognitive science implicitly. It describes interaction with a complex piece of machinery, and can thereby be seen as a study of human-machine interaction. Even though it does not explain this interaction in cognitivistic terms, it deals with these issues. The participants’ understanding and perceptions of the simulation are respecified from being individual and cognitive into being discursive and locally concerted phenomena.

**General outline of this study**

This study proceeds in two major parts. First, a general background of the field of simulator research is issued, and a section on the basic concepts of ethnomethodology and interaction analysis is included, together with a discussion of the import that these concepts have for studying simulations from an ethnomethodological perspective. The methods and materials used are presented.

The second part of the study is the results: explications of the details of doing transgressional activities in the simulations. This commences with a general outline of the studied domain; after which various transcriptions of events where the relation between the simulation and the simulated practice becomes some sort of interactional problem are presented. Each section includes analysis and brief discussion of the specificities of the participants’ management of these problems. Concluding the study is a more lengthy exploration of some of the themes found in the previous chapter.

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5 This, however, should not be taken to be a general case for all of ethnomethodology. The ethnomethodological "hybrid studies" that Garfinkel (2002, pp. 100 - 103) writes about have very much to say about designing and developing the practice it studies (Lindwall & Lymer, 2005)
Background

Simulation is a very broad concept, applicable to a great number of practices, artifacts and interactions. It would be difficult to find a single common denominator for all these (and neither is it the business of this study to produce a single definition of simulations\(^6\)). Instead, it can be beneficial to think of these diverse concepts as having family resemblances, following Wittgenstein’s discussion of this term (Wittgenstein, 1953, §67).

Instead, this thesis will commence by producing tentative characterizations of the technology and activities of simulators and simulations. They will serve to give the reader an overview of how simulators and simulations have been theorized previously. There exists no theory or vocabulary of simulators and simulations that are commonplace throughout (Feinstein & Cannon, 2001). Instead, the concepts discussed here are included for the purposes of this study.

Simulation is a concept with very wide applications, and pertains to such diverse areas as statistical models, language learning and flight simulation. At its very largest, it will also subsume every kind of representation, so that a picture, model, analogy, theory and thought could be called “simulation” (Lindblad, 1976).

A simulation has been described as art, technique or methodology for modeling a dynamic aspect of a specific system, with the explicit purpose of understanding the simulated system (Rystedt, 2002). This system can be real, as in flight-simulations, or proposed, as in role-playing games (Greenblat, 1988). A simulation could be said to consist of a system to be simulated and a model (theory) of some aspect of that system. These two are together called the simulandum (Lindblad, 1976). Further, it also needs a simulation program that somehow calculates the dynamics of the model: this is called simulans. The degree of correspondence between simulans and simulandum is called fidelity (ibid.)\(^7\)

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\(^6\) The only definition that would come close to a single denominator is the idea that “behavior predicts behavior” (Havighurst et al., 2003)

\(^7\) In the intensive care simulations studied here, simulandum would be said to consist of the day-to-day work of doing intensive care, (including the conceptualizations of what such work consists in, i.e. a theory of intensive care work). The simulans would be the physical artifact of the simulator, together with the room and all its trappings in
The *simulation* consists of one or more participants interacting in and with a simulator (Lindblad, 1976). The *simulator* is the physical artifact on which the simulation program (simulans) is implemented (this includes both the underlying model and the interface that the participants interact with, i.e. the materiality of the simulation). Simulations that require human agency are generally designated *gaming-simulations* (Greenblat, 1988). These are simulations that are wholly or partially based on the players’ decisions and actions, and display some characteristics commonly associated with games. These include that players have roles to play (even though they might sometimes “play” themselves), goals to achieve, specific activities to perform, constraints on possible actions and some kind of feedback system in order to know how they are performing. As before, the distinction between games and simulation is not clear-cut, and for the purposes of this study there is no need to fabricate one. Still, this is the general vocabulary associated with the study of simulators, and the simulations presently studied will fall under the heading of simulation gaming in the regular categories of simulator-studies.

**Categories in the analysis of simulators: fidelity**

Level of fidelity is normally understood as how well some element, structure or function of the simulandum is represented in the simulans (Lindblad, 1976). High fidelity simulators strive to represent as many interactions in the simulandum as possible, preferably on the same type of hardware and artifacts as is normally used. A high fidelity flight simulator uses the same flight deck as the type of airplane that it represents. The simulator is constructed so that the dynamics of flight become as life-like as possible. A low fidelity simulator models fewer aspects of the simulated phenomenon, and interaction with the simulator is done in markedly different ways from normal (Thiagarajan, 1998). Simulating a city in the computer-game Sim City (Electronic Arts 1989) is done both with a simplified model of what goes on in a city and interactions with the simulator does not resemble those of a city-planner or town mayor in their physical makeup.

It can be seen here how fidelity concerns both the *model* (theory) and the *interface* of the simulator. A simulator might have a high fidelity model and a low fidelity interface according to Rystedt

which it is situated. According to this line of reasoning, the level of fidelity of the simulation would be determined by how well the simulator could bring about a representation of some aspect of intensive care work,

Although for example Hansson (2004) tries to distinguish games from simulations in that the former puts in second place all other goals than winning, while the latter operates with the moral rules of the real world.
(2002), were a screen based, off the shelf, flight simulator might serve as an example. The model in this case could be every bit as advanced as in a full-scale simulator (which is presumably as high-fidelity as possible), but the interface is a computer-screen and a keyboard, in which the elements and structures are different from the airplane’s. Rystedt’s own study (Rystedt, 1999) examines the use of an anesthesiological simulator of this type, where an advanced model anesthetic simulator is interacted with via an interface that bears very little resemblance to the practicalities of doing anesthesiological work (clicking with the computer mouse on a screen represents the actions of intubation, injecting various drugs etc).

Rystedt (2002) discusses the relations of simulation to the practice being simulated from two different angles: an objective point of view and a subjective that takes into account the participants’ perspective. He is careful to point out that an objective viewpoint, implying a realistic ontology, does not entail that one is trying to “re-create the world” (p. 10); a simulation that is exactly and at every point like that which it simulates would loose many of its benefits (e.g. patient safety in medical simulation). Instead, it is how well the simulator can imitate the intended and relevant aspects of reality that is an issue.

Establishing the level of fidelity in developing simulators is done through processes of verification and validation (Banks, 1998): “the verification process aims at an examination of whether the operational model reflects the conceptual model, whilst the validation process is carried out in order to determine the extent to which the conceptual model represents the focused system in an appropriate way” (Rystedt, 2002, pp. 10-11). Focusing on the intensive care simulations of this study, verification is whether or not the behavior of the simulator correctly emulates the relevant medical theories. Validation is whether or not the relevant medical theories correctly represent the human physiology in the first place. The validation techniques most frequently used include applying some mathematical/statistical test to some aspect of the simulation (i.e. an “objective” approach). Other measures, such as “face validity” (asking operators/participants weather or not the simulation is plausible) can also be used in this process. Although this latter approach can be characterized as “subjective”, its measurements are often mathematized in order to fit formal models of fidelity (Sargent, 1998), and so much of their experiential character is lost.

The other way (“subjective”) to analyze the relation of simulans to simulandum is through the processes whereby the participants make the simulation understandable in a certain way, what connections they see the simulation and simulated practice as having. Not only the simulator
itself, but also the simulation as a whole must be analyzed under this perspective, paying attention to actions and interpretations that the participants engage in while in the simulation.

This notion focuses attention towards how simulations may comprise different forms of information that are gathered in an object and how this affords connections to things out there. Of central importance, thus, is how people interact with the simulation to constitute connections between the activity at hand and other, more distant, experiences or practices out there in the process of meaning-making (Rystedt, 2002, p. 11).

Rystedt (ibid) claims further that the most important aspect of the relation between simulans and simulandum lies not in the “objective” fidelity of the simulator, but in the sense making that the participants engage in. The outcome of such a perspective is that you cannot beforehand establish the authenticity of practice in simulation, but that this has to be judged from the behavior of the participants.

One example of a study that examines fidelity, as the participants understand it, is Dieckman et al. (2003). Here, fidelity of medical simulations is judged through an interview and a questionnaire after the session, including such questions of what moments “felt like being in the OR” or “felt like being in the simulator” (ibid, p. 2). The questionnaires and interview transcripts were then coded for “reality signs” and “fiction signs”, which in turn were transformed into a formal model of factors influencing the participants’ experiences in simulation scenarios.

Interviews and questionnaires are of course standard sociological tools, and in the way that they are used in that study they inevitably deliver post-factum explanations of fidelity in the simulations studied. Using such methods could no doubt produce results important for participants’ and analysts’ conceptualization of the events of the simulation and its relation to the simulated practice, but in this study they would in all probability not say very much about how the fidelity of the simulation was done and achieved inside the simulation. Understanding fidelity of medical simulation from within the simulation is something of a missing link in simulator research. Even though Dieckmann et al. (ibid) recognize that participants sometimes “leave” the scenario, and that this might compromise the ecological validity of the simulation, they, in orderly formal analytical fashion, search for the “factors” that lie behind such switches in the simulation. Such

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9 OR = operating room.
mathematical reformulation of local ordered practical action and understanding in the simulation using formal analytical methods will inevitably render the phenomenon of “doing fidelity” invisible (Rawls, 2002, p. 26, in Garfinkel, 2002). A valid conclusion in formal analytical research on simulators: “While scenario contents were judged to be realistic and problems in using the simulator as a medium were reported to be low there was still considerable variance in the perception of the scenarios by participants” (Dieckmann et al., 2003, p. 3) says very little about what actually went on in the production of the “perceptions” of the simulation as realistic.

This study explicitly tries to fill the gap of what the concrete activities of doing simulations look like. As it adheres to the commitments of ethnomethodology, its questions are answered through careful analysis of how the participants themselves judge their situation, from within the simulation. A central point of the ethnomethodological “program” is that the interactional importance of an action is seen in the participants’ proximal sequential actions (see for example Sacks et al., 1974; also the sections on indexicality, reflexivity and sequentiality in the next chapter). The sense that the participants make of their situation (if they find the concordance between the simulans and simulandum at a specific time to be of this or that sort) is available as a resource for the participants’ further actions in the simulator. Being publicly available, the participants’ understandings can also be used by an external analyst in order to understand and problematize the relation between simulans and simulandum from the “inside” (or, as it is generally called in ethnomethodology, the “members’ perspective”).

Other categories in simulator-analysis

Characterizing simulations, we have seen how level of fidelity is an often used category, and in many ways it subsumes many other dimensions of simulator analysis. Scale is another useful category for such examinations. Scale is generally divided into micro, macro and mega (Thiagarajan, 1998). Mega is simulations on global scales, such as simulating polar icecaps melting due to increased levels of carbon dioxide in the atmosphere. Macro could be used for simulating the effects on a certain company in incorporating some new technology, while micro designates all simulations trying to simulate individual actions of whatever type, be they atoms’ or nurses’ actions.

Traditionally, one also distinguishes between computer-based simulation and manual simulations (ibid). Many classic simulation games are of the manual type, utilizing pen, paper, and other markers. Many types of simulations require computers both for calculations and interface, such as virtual reality-systems (VR) or screen based anesthesiology-simulations. Others might be hybrids.
between the two, such as the simulator studied here, where a computer calculates the various parameters, while the interaction with the simulator is achieved via physical manipulation of the mannequin.

Different uses of simulations also distinguish different types of simulations. Thiagarajan (ibid) names a few: instruction, research, therapy, transfer, team building, assessment and awareness. A specific use of a simulator might involve more than one of these dimensions, so that a flight simulator could be used both for testing the skills of pilots (assessment), training them in better communication and cooperation (team building), enhancing their skills in flying actual planes (transfer), informing pilots in how to handle specific situations or technologies (instruction) et cetera. In any case, what use any particular simulation will have is an empirical question.

**Immersion and presence**

Two important categories that are subsumed under the heading of “subjective fidelity” in simulations are **immersion** and **presence**. They are both dealing with participants’ experiences and feelings of being part of the simulation, as apart from seeing the situation as simulation. These concepts are used not only in relation to simulation studies, but generally any kind of media use can be analyzed according to these dimensions, such as playing a computer game, watching a film or even reading a book. Although achieving perfect “objective” fidelity for simulators can be

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10 Some, like Heidegger, argue that all artifacts, used in an “unproblematic fashion” are immersive: “Heidegger’s conception of the authentic everydayness involves being immersed in the world without consciously holding it in view; the observational stance towards the world is lost in one’s going about one’s normal tasks” (Standish, 1992, p. 130).

11 An enlightening view of immersion in relation to reading is given by Ryan (2001, p. 168):

- A text is realistic when it creates a credible, seemingly autonomous and language-independent reality, where the style of depiction captures an aura of presence, when the reader is imaginatively part of the textual world and senses that the there is more to this world that what the text displays of it: a backside to objects, a mind to characters, and time and space extending beyond the display. This type of realism is indifferent to the type of objects represented [...] and is entirely dependent on the mode of representation. Its style must offer the verbal equivalent of three-dimensionality, sharpness of lines, and fullness of detail in visual media.
questioned as a reasonable or desired goal for the pedagogical aims of simulator use (Feinstein & Cannon, 2001; Thiagarajan, 1998), immersing the user and giving him or her a feeling of presence has not been put forward as something less-than-desirable. One goal of the use of simulations is to allow users to experience presence and immersion: “in the sense that the simulator as a medium hides itself behind a coherent experience of the situation as a work related task” (Dieckmann et al., 2003, p. 1).

Linderoth (2004) coins the term interactive illusion for the dream of achieving perfect immersion and presence: a representation made so flawless that it dissolves the distinction between signifier and signified. The dream of an interactive illusion entails that “when representation are made interactive, multimodal, high-fidelity and immerses the user [...] the distance/difference between the representation itself and what it represents is lessened.” (Linderoth, 2004, p. 5, italics in original, my translation)12. van Sutherland expresses a desire for an interactive illusion when he says “The screen is a window through which one sees a virtual world. The challenge is to make that world look real, act real, sound real, feel real” (Vince, 1995, p. Vii), producing both an account of what he takes interaction with such media to be, and a maxim for its further development. In simulator research, increasing the immersion and feeling of presence of the user through increased fidelity of the simulator (through better VR-equipment, haptic feedback or increased range of interactivity) has been an expressed goal (Satava & Jones, 1999).

If the simulator gives enough sensory information in enough sense-modalities, this will supposedly lead to immersion, giving the participant the experience of presence in the milieu that is being simulated. The multi-modalness of a certain media is called its breadth, while its resolution is named depth. Regarding micro-scale simulators, immersion and presence is heightened if senses are affected in the same way and to the same extent as in the “real” task.

It is also notable that the first literary description of (over) immersion involves reading: don Quixote de la Mancha (de Cervantes, 1999) read quite a few novels a bit to closely.

12 Interestingly, the Turing test (Turing, 1958) can be seen as a test of the fidelity of a simulated conversationalist. A machine that passed the Turing test could be said to have a level of fidelity so high as to make he distinction between human and computer impossible. In that case, the gap between simulans and simulandum would indeed have been minimized to the point where the simulation could not be distinguished from the real thing.
Other factors are also in play when creating immersion and presence. “Any display system that provides the user with a realistic ‘first-person’ view of the virtual world, and is directly controlled by the user, is critical in creating the sensation of immersion or presence” (Vince, 1995, p. 6). According to this line of reasoning, an on-screen version of an anesthesia simulator would create less immersion than a mannequin based one. Although it is an empirical question, this theory of immersion and presence states that even though the two simulators might be using the same underlying model of the human body and how it is affected by medical procedures and drugs, the first gives a symbolic view of the operating theatre and the patient (as studied by Rystedt, 2002), while the second requires doctors and nurses to move around, fetch the required equipment and execute the procedures (as studied by Johnsson, 2004). The first is a disinterested, general and symbolic representation of the work in an operating theatre, and the level of presence for the user is not as great as in the second case, where the user is present in the room. This is a view that is less symbolic, where an effort has been made into lessening the distance between the representation and that being represented (i.e. trying to achieve an interactive illusion).

The term *interactivity* is (in theory relating to immersive artifacts such as simulators) the range of possible actions that a participant can do in the simulation. Even though it would not be possible to allow *every* action in a simulation, any action that can be done “normally and regularly” should be executable in the simulation, according to this line of reasoning. Ryan (2001) claims that predictability of the system is in conflict with the set of possible actions, so that if it would be possible to do everything in the system, the system probably would not be able to react in an intelligent way to most of those actions. “The coherence of flight-simulation stems, for instance, from the fact that they exclude any choice of activity unrelated to flying” (ibid, p. 69). That the airline pilot training on a flight-simulator cannot exit the flight deck and enter the cabin will never be considered a problem in the simulation. It would only be when normal and regular actions are disallowed or significantly altered that the interactivity of the simulator would come into question. Generally, it will not be a problem for participants in the studied simulations that they could not mend the patient’s ruptured spleen: this is a procedure done in an operating room by surgeons and not in an intensive-care unit by nurses, and is thus considered to be beyond the scope of both their regular practice and the medicine that they are conducting in the simulation. That canulas can only be inserted into the doll’s right arm is considered a break from normal procedures big enough to warrant mentioning in the briefing session preceding the simulations. The range of interactivity in the simulations is seen beforehand as a possible problem that needs to be dealt with accordingly.
The idea behind providing a simulation with high multi-modalness (even with ideas of incorporating smell into existing surgical simulators, cf. Spencer, 2005), large range of interactivity as well as a first person view of the situation is one “the interactive illusion”. Given that sensory information is high fidelity and the simulation allows for the same interaction as within the situation that is being simulated, this supposedly leads to greater immersion and feelings of presence for the participants. Realism in this respect has been the expressed goal both for simulator developers (such as Laerdal, cf. Laerdal medical, 2005) or researchers (Satava & Jones, 1999; Satava 2001), as well as those studying fidelity in simulations, where the lack of immersion is seen as lack of ecological validity of the simulator (Dieckmann et al., 2003).

Analytically distinguishing immersion and presence from fidelity is not an easy task (nor is it one that this study attempts). Fidelity is often used as a generic term describing the amount of “objective” similarity between the simulans and simulandum. This includes multi-modalness, (breadth and depth) and range of possible interactions, and can be determined with technical specifications (e.g. Liu et al., 2003) Immersion and presences are terms that are used when describing the participants’ interactions with the simulator. Often this is done through interviews or questionnaires (cf. Dieckmann et al., 2003). But few studies use interaction analytical approaches, Rystedt (2002) Johnson (2004), as well as Spagnolli et al. (2003) being exceptions. Also, Hindmarsch et al. (2000) have used interaction analytical approaches to the study and design of interaction in virtual environments.

Critique of the idea of interactive illusions

Even though for example Thiagarajan (1998) opens up for the possibility that different uses of simulations require different things from simulators, and others claim that the type of simulator has to be tailored to the specific goal of using the simulator in the first place (be it education, therapy, testing or whatever), micro-simulations of some specific activity would generally be considered better if they are immersive, allows for the same range of interactivity, affords the same perceptions etc. as the same activity would in real life. In short, a micro-scale simulation-game that to a greater extent fulfills the criteria of the interactive illusion would be considered better (Satava, 2001).

13 Take this as a more general example of this view, where Markley (2003, p. 39) discusses a technophilic view of the possibilities of new media.
Linderoth (2004) is also inherently critical of the notion of interactive illusions as he coins the term. In the view of the interactive illusion lies an understanding of various media as first and foremost being representations. In his study, he discusses computer gaming as a distinct activity understandable in and as itself (as a primary frame in Goffman’s (1986) terminology). Here, the players’ interaction does not necessarily relate the events on the screen to that which they represent. This calls into question whether the events in the game could be called representations at all in these cases. If playing computer games is a primary frame, then their representational function is not their principal and defining characteristic, but rather just one aspect that can be utilized when it is called for in the interaction. Perhaps the same can be said of simulators, where it could be beneficial to view the micro-scale intensive care simulations not primarily as a representation of work. Instead it might be fruitful to examine simulations as work in and for itself, where that work as representation is just one of many interconnected aspects.

At various points in the interaction, participants can relate their work in the simulation to their regular medical work, but it is not an omnipresent dimension of their activities. Of course, their actions are very much like those that they do in their every day work, but the fidelity of those activities in the simulation cannot be decided a priori by an analyst. The fidelity of each and every

[...] faith in the ability of technology to approach the real by transcending the perceived limitations of previous generations of media; movies are more ‘real’ than books because they provide a ‘fuller’ sensory experience; virtual environments are more ‘real’ than passive media because they engage senses other than sight and hearing. Sensory experience itself, however, is judged by the standards of verisimilitude delivered from an engineering definition of immersive experience: more stimuli, greater processing speed, better sound quality, higher visual resolution.

Button et al. (1995, pp. 134 - 152) uses a philosophical argument to disvalidate the view that better technology equals “more authenticity”. Their quarrel is really with the use of the Turing test as a means to test machine intelligence, but following page 9 it can be seen that the Turing test could be thought of as a test for fidelity in simulators. They use the following example, analog with the original Turing test: a false bank note, counterfeited to the highest degree, making it impossible to distinguish from a real one, is still a false bank note. It would still be illegal to use it, as it had not been certified as a valid note in the economic system. Regarding the simulator at hand, even if it would be every bit as real as the patient it simulates (something like a replicant from Bladerunner), it would still be a simulator. The inability to discern differences does not mean that there are no differences. That is, in their view, it is in principle not possible to fulfill the requirements of the interactive illusion; this would be a conceptual and not an empirical question.
action, utterance or episode is an empirical question that, crucially, is answered by the participants of the simulation themselves. Rystedt & Lindström (in Rystedt, 2002) analyze simulations as boundary practices in the respect that it is the practical achievement of the participants of the simulations to do the coupling between the simulation and that that is being simulated, using various local semiotic resources. They put special emphasis on the simulation as a boundary practice in that is an activity in its own right, borrowing meaning from realms of work and education. Of course, the key issue becomes to determine just how the simulation as a boundary practice is established in the participants’ interactions.

**Learning in simulations**

Connected to the issue of fidelity in simulations as an interactive illusion is the question of learning in simulations. One of the goals of the simulations studied here is definitely for the participants to enhance their professional skills, which is also true for just about every use of simulations in medicine. Generally, analysts agree that it is not the technological properties of the simulation that in themselves provide opportunities for learning in the simulator, thus negating the proposition high fidelity = high learning, or even the more general high fidelity = better simulator (Thiagarajan, 1998, p. 37). There is general consensus that “it is not only the technical features of the systems but also the manner in which they are used that yields the benefit”14 (Dieckmann et al., 2003, p. 1). Still, they have been at loss as how to formulate just how it is that simulations are beneficial for learning (ibid). This is of course related to the bigger issue of how to set up and measure criteria for learning, which has proven to be a general research problem in pedagogy.

Rystedt (2002) summarizes the studies of learning in simulators as relying on three separate factors for their explanations. First, there are the characteristics of the simulation: how well it fulfills the criteria of an interactive illusion, but also its level of transparency (how easy it is to observe the simulation’s underlying model) and complexity (the difficulty of the task to be solved). Second are the characteristics of the students, their prior experience of the domain or how they conducted their work. Third is the level and complexity of instruction given to students in the simulation. Traditionally, these three factors have been the ones used to explain how well

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14 A title such as “it is not how much you have but how you use it” (Salas et al., 1998) summarizes this view neatly.
some criterion of learning had been met, and researchers may argue amongst themselves if it is
technology, students or teachers that need improvement.

Examining simulations as boundary practices, activities that are hybrids between professional
practice and learning practices, we can use Johnson’s term reconstitution\(^\text{15}\) (2004) as a theoretical
gloss of the intertwining between medical and learning practices in the simulation. Johnsson
defines the concept: “reconstitution is [...] that participation which is recreating medical practices
out of the reified practices and understandings materialized in the simulators” (Johnsson, 2004, p.
71). She claims this kind of participation both constitutes the simulator as a human patient and
the user as a doctor. This allows the student to learn not only specific techniques of surgery or
anesthesiology, but also the specific roles of patient and doctor in health-care. In her view,
simulators are beneficial for many other reasons than the ones cited as arguments for their use or
purchase. Through reconstitution using for example a minimal invasive surgery simulator
becomes medical practice rather than just moving around objects on a computer screen.
Reconstitution thus allows participants to learn specifically medical practices that go beyond the
tasks or goals of the simulator. Johnsson cites learning how to see a patient or comprehending an
interior anatomical volume, as well as “creating medical practitioners out of the students and

In summary, those few that have studied simulations as a pedagogical tool from an interaction-
analytical perspective have made some progress into how medical and pedagogical activities mix,
turn by turn in the participants’ interactions. Following them, this study will attempt to further
examine the intertwining of various activities in the simulation-sessions. The focus will not be
solely on the pedagogical aspects of switching between types of activities, although in some cases
this is a primary theme in the participants’ conversation when conducting transgressions, those
events in the simulation where they whitnessably “break the frame” of the simulation. Breaking
the simulation’s frame in order to instruct, lecture or in some other way make learning a primary
focus of the interaction (for example discussing what procedures can and cannot be performed
on this simulator vs. a flesh-and-blood patient) is only one type of transgression. In some cases
the topic of a transgressional event might for example be making manifest the fact that the team
is conducting a simulation and not their regular work practice, or making a joke in someone else’s

\[^{15}\] Johnson describes this concept as a specification of the term legitimate peripheral participation (Lave & Wenger, 1991) applied to simulator use.
expense. In some of these cases, the pedagogy of simulation is not the topic of the participants’ interactions, and these and other variants of transgressional work are in all probability best analyzed as non-pedagogical of how to conduct medical work. Even though learning is often the main motivator behind doing the simulations in the first place, this is not so for the participants at all times, as will be demonstrated in the excerpts of the simulations-sessions. Many transgressional events may, however, include elements of instruction on how to understand the simulation. Orienting towards transgressions as instructions and instructed actions (Garfinkel, 2002, p. 197 – 218) might be an important aspect of the simulations for the participants.

**Transgressive and frame-breaking activities**

In the view that language games are not self-contained units, this study can very well start to analyze the joking, laughing, confusion and so on that arises in the simulation situation as language games, not separate from the rest of the activity of simulating, but as part and parcel of it. Lynch, in analyzing shoptalk in a research laboratory (Lynch, 1985) notes that such “unscientific” activities

> [...] do not necessarily occur outside the frame of an experiment, since they often are performed by sabotaging the equipment, playfully modifying data displays, teasing laboratory animals, and the like. Although some practical jokes and other spontaneous productions of humor are recognizably ‘transgressive’ of ‘serious’ laboratory work, that reconcilability is itself a product of laboratory work. (ibid, p. 279, footnote).

Lynch’s description seems to fit neatly into the research project at hand. As this study tries to account for how some actions can be understood as “transgressive”, attention must be paid to how such understanding is achieved in the course of doing the simulation. It cannot be determined that some event is “breaking frame” simply by saying that “this is not what they usually do”. Instead, this study tries to demonstrate how the participants see some action as “this in not what we usually do”.

Transgressive work has also been studied by Garfinkel (1963), in what has famously become known as his “breech experiments”. In these, he studied what Alfred Schutz dubbed “the attitude
of daily life,” and he set out to reveal some of the presuppositions that are “seen but unnoticed” (Garfinkel, 1967, p. 37) in people’s reflexive understandings of activities. He studied breach of the rules of games (tic-tac-toe) and everyday expectancies (such as pretending to be a lodger in your own house). Such breaches were instigated in order to be anomalous to the activities in which they occurred, and revealed some the normative framework in which members act and comprehend actions. Both in game play and everyday activities these breaches induced ambiguity and confusion into the interactions studied yet were not senseless. They were still understood in some way.

a person [...] who encounters a breach in the constitutive accent of everyday situations may cope with the ‘incongruity’ by ‘leaving the field,’ e.g., ‘making a game’ of his situation or turning it into ‘an experiment’ or ‘playful exchange’ and the rest. [...] each involves the suspension by him of the relevance of ordinary structural constraints” (Garfinkel, 1963, p. 219).

For the enterprise of this study, this might be a useful perspective. A breach of the borders of the simulation forces interlocutants to reformulate the sense of the situation. Such a constraint, for example what can be glossed as a rule of “do not point out incongruities between this practice and what we usually do”, can be suspended in face of a breach in the expectancies for a participant. In face of a breach of this rule, participants may do a variety of things. They may sanction the breacher, but may also reformulate their activity from one of “doing serious medical work” into one of “doing fun and games”, which allows for the participants to laugh and mock each other or the patient.

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16 The Schutzian “natural attitude” (Sharrock & Andersson, 1991, p. 55), one of the phenomenological foundations of ethnomethodology (Lynch, 1993, pp. 117 – 158) is an attitude of “natural realist”, in which things of the world are generally taken at face value. Doubts may of course arise, but these are generally resolved quickly, and most importantly, do not generally hinder that things get done. Doubts are always executed against the background of a presupposed real-and-known-in-common-world-of-everyday-affairs. “The ‘natural attitude’ does not involve the total suspension of the possibility of doubt, but differs from the pure, systematic philosophical doubt in that it cannot cast doubt comprehensively, but only selectively, from within the assumption of the givenness of the external world as a whole.” (Sharrock & Andersson, 1991, p. 55).
What we are here to do

This study is occupied with showing some ways in which the illusion of the simulation is breached and transgressed. There are inherent difficulties in providing a characterization of what it is in the simulations that is breached. Under various headings, this study shows how this is done in specific cases, but for the sake of clarity in the analysis and subsequent discussion, a preliminary outline of participants’ orientations in the simulations is provided as gloss of their activities. This will foreshadow the empirical parts of this thesis, but is nonetheless needed in order to understand the subsequent analysis. It is not feasible to say unproblematically that participants are “doing intensive care medicine”. As is shown, there are a plethora of instances where they orient to the fact that this is not so. Also, it cannot be stated beforehand that they are “merely doing simulation”, as if this activity is completely distinct from the work of intensive care medicine, being artificial or fake. There is a great variety of cases where participants go about their work unproblematically, just as they would if the patient would have been of flesh and blood, where no detailed analysis of their interaction would justify saying that they are treating this situation as less-than-real.

So what shall be used as a preliminary gloss for what the participants are doing in the simulation, given the claim that they are neither doing intensive care medicine or something less than that? If this study is an explication of techniques for breaking the illusion of the simulation, and restoring it again, in what does this illusion consist? What will those “borders” of the simulation be constructed out of? What will a break be a break from, in they eyes of the participants? The only preliminary answer is that a break will be a break from “what we are here to do”. What are we (they) here (there) to do? To do a proper, as real-as-possible, high-fidelity simulation, accountable and understood as intensive care medicine in as many ways as possible. A break from this will then be an activity that is not what it should be, not as real as it ought to be, understood as something other than proper intensive care medicine.

Foreshadowing the empirical analysis and results of this study, the activity of doing “what we are here to do” can sometimes be characterized as a conversational topic, in that they talk about what they should and should not do in the simulation. Conversational topics can be analyzed using terms from conversation analysis, such as preference for staying on that topic or the work needed to change topic (Maynard, 1980; Goodwin & Goodwin, 1992). Crucially, it can also be analyzed as an activity that the participants engage in: their work and the inherent comprehension of it. It is not that they only talk about “doing what they are there to do”, they also do regular intensive
care medicine in the simulation, and they are *thereby* doing what they are there to do.

These characterizations all “gloss over” the lived practice of doing the various things that make up the simulations. The rest of the study will fill in these gaps, but establishing this frame at this point provides a way of talking about these things. It is not a result of this study to provide these glosses as definitions of what participants are doing. They are concepts for understanding the analysis that follows.

The “attitude of daily life” that Schutz and Garfinkel speak of is a complex concept, but it will suffice here to say that “what we are here to do”, the “ordinary intensive care medical work in a simulator” constitutes what could be included under this heading. It is in breach of the expectancies of this attitude that the participants reformulate the sense of what they are doing, allowing for different activities to take place. The “what we are here to do” serves as a sort of baseline for understanding how some activities are seen as transgressive by the participants. It is the business of the rest of the study to show just how this is done in detailed practice, but as the concept of “doing what we usually do” is important in this text a preliminary example is warranted:

The simulation includes the team summoning a doctor to the scene. In one case, before he has arrived, one of the nurses repeatedly tries to initiate procedures normally performed by the doctor, as she is unaware that a doctor has been summoned to the room. That she has misunderstood this premise of the situation is made apparent in that the others present (both team and crew) with various means attempts to make her aware of her misunderstanding. This is done in and through various utterances, such as “no, but do as you usually do” and “but Karin has called the doctor, he’ll be here”. This goes on for lengthy periods of time at various points in the simulation (until the doctor actually shows up). It includes for example the said Nurse claiming power over the simulation, saying “now the doctor’s here so I’ll tube him” (wanting to initiate intubation of the patient). These instances are, at all times, met with sanctions from the rest of the participants.

There is clearly a *proper way* of doing the simulation in this respect, and by making the nurse’s misunderstanding of the situation a topic of the conversation the participants are demonstrating *how* to understand the simulation (an example of the *immanent pedagogy* mentioned previously) of doing this simulation. That the team has been informed that they should do “just as they normally do” is used as an argument in this discussion, and when Nurse 1 does not comply with this instruction the rest of the participants attempt (with various interactional resources and
growing frustration) to explain this to her. Nurse 1 is doing what she feels is necessary in a simulation where no doctor could be present (as no doctor is part of the team that is present initially), but is an accountable fact of the simulation that this way of understanding the situation is faulted. What the proper course of action is in any given situation is clearly a negotiated matter, but somehow all situations are resolved in a way that restores the simulation to the proper medical work that is their reason for being there. At this time the situation is revealed as simulation, i.e. accountably a transgressional activity. Accounts of what are proper ways of behaving in the simulation are “worked up” turn by turn throughout the session. Working in the correct fashion is not a once-and-for all given fact of the simulation, but those that breach the order of the simulation in and through transgressional activities are held accountable to “what we came here to do” through a plethora of local accounting practices.
Theory

Using the analytical characteristics of simulations it is possible to make distinctions between different types and uses of various simulations. In the present case, these dimensions would yield that the simulation used is high fidelity, micro-scale intensive care simulator, used for team training in intensive care medicine (where a secondary use of the simulator is the present piece of research). These ways of outlining the field of simulation has little power to say much about the details of the work that make up specific simulation-sessions. These dimensions function as a gloss in order to make general statements about for example medical simulation, but in this process the studies that take them as their starting point (just about every study of medical simulation does this, but Havighurst et al. (2003) and Dieckman et al. (2003) can serve as examples for now) will loose sight of the minuitiae of simulation-interaction that is of interest for this study.

Trying to grasp how participants understand and make understood their interactions in the simulations and what they do in order to perform transgressions of those simulations, this study takes ethnomethodology as its analytical vantage point. It is not so much a proper theory as it is a certain kind of commitment regarding how to understand and analyze the situations under study, in this case intensive care simulations. The ethnomethodological program cannot be characterized as a coherent discipline with a strict set of methods; rather it is a way of thinking and analyzing human activity.

This chapter on ethnomethodology aims at giving reader unfamiliar with the work and technical jargon of ethnomethodology a brief introduction. The most prominent concepts of ethnomethodological research will be discussed in relation to simulations. This will also outline what it is that much of simulation research; in that it has adhered to various theories (what ethnomethodology calls formal analysis) has missed. Certainly, the intricate balances between “proper” and “improper” work in simulations, and how the frame of “proper” work in simulations is constantly transgressed, has yet to be described in ethnomethodological terms, or even to be studied using interaction analysis. It is a goal of this study to try to provide original insights into the work of doing simulation, and thereby contribute to simulator research. If phenomena that have previously been passed or glossed over as uninteresting can be brought up into light, and it can be shown how the participants make up the simulation sessions into what they are, this will be one small step towards fulfilling this goal.
General outline of ethnomethodology

As a distinct academic discipline, ethnomethodology take as its object of study the ordinary, common sense methods whereby members of society make sense of their everyday activities. It is neither a theoretical nor a methodological approach in sociology, but a name of a type of analytical inclination or scientific interest. It is generally considered a sub-branch of sociology, and is generally interested in the same kind of phenomena that “regular” sociology is. However, even though the subjects are the same, ethnomethodology respecifies sociological and psychological questions (what Garfinkel (2002, p. 118, footnote) calls questions of order*) into questions of how any local group of people endogenously produce order, using the local resources at hand. Still, understanding ethnomethodology is difficult without relating it to other academic disciplines, such as sociology or psychology, which ethnomethodology commonly refers to by the name of formal (or constructive) analysis (ibid, pp. 25 – 30; 121 - 135)17.

As an example of such respecification of sociological discourse, Garfinkel uses “Durkheim’s aphorism” which has been the basic principle for much of modern sociology. It is originally formulated as: “the objective reality of social facts is sociology’s fundamental principle” (Garfinkel, 1991, p. 11). For ethnomethodology, this principle has to be respecified, and the “objective reality of social facts” becomes something different altogether18 (ibid):

The objective reality of social facts, in that, and just how, it is every society’s locally, endogenously produced, naturally organized, reflexively accountable, ongoing, practical achievement, being everywhere, always, only, exactly and entirely, members’ work, with no time out, and with no possibility of evasion, hiding out, passing, postponement, or buy-outs, is thereby sociology’s fundamental phenomenon.

17 In fact, Garfinkel claims that ethnomethodology is unthinkable without formal analysis. Ethnomethodology is ”an incommensurable, asymmetrically, alternate technology for social analysis” (Garfinkel, 2002, p. 192)

18 According to Garfinkel (2002, pp. 117 - 120) this is actually a restatement of Durkheim’s original intentions, that have been obscured by formal analysis’ abuse and misunderstanding of his concept of ”social fact”.
Following this formula, every question of social action (in both sociology and psychology\(^{19}\)) can be respecified into an object of ethnomethodological enquiry. Ethnomethodological studies show a number of common traits, which sets them aside from studies done under the auspices of formal analysis. These traits are taken from Garfinkel (ibid) and should be thought of as an outline of the ethnomethodological research-interests, analytical commitments and methodological considerations. These set ethnomethodology apart from the rest of sociology or psychology. A more specific explication of the concepts included here is provided below.

1. The phenomena ethnomethodology studies are available for study only under the methodological considerations of “ethnomethodological indifference” and the “unique adequacy requirements of methods”, and are not available through the methods of formal analysis.

2. Formal analysis depends on the phenomena that ethnomethodology studies, but ignores it – they treat common sense knowledge not as a topic in its own right but as an unexplicated resource.

3. The phenomena that are discoverable through ethnomethodology are lost in the process of doing formal analysis, which is sometimes called *glossing* (Garfinkel & Sacks, 1970). The phenomena lost are called “the missing thinness” or “haecceity” (Lynch, 1993, pp. 283 - 284).

4. The phenomena of ethnomethodological studies cannot be used in order to construct theories or models: “They cannot be recovered by attempts [...] to specify an examinable practice by detailing a generality” (Garfinkel, 1991. p. 16)

5. Ethnomethodology’s phenomena are discovered and cannot be “made up” through imagination, experimentation etc.

6. The basic phenomenon for ethnomethodology is “produced order in and as practical action”.

7. These phenomena are locally and endogenously produced in all their details.

\(^{19}\) Cf. Coulter (1989) for examples of how ethnomethodology can be applied to questions in psychology.
Every phenomena of order is discoverable and respecifiable in all their mundane details. This is the list of the common differences between ethnomethodology and formal analysis, and should provide some means for inferring (and recognizing) under what perspective any given study has been written. Garfinkel (2002. pp. 121 - 134) gives more concrete examples of ethnomethodological studies, and how their premises and findings differ radically from those of formal analysis.

**Common concepts in ethnomethodology**

Even though ethnomethodology explicitly rejects attempts to transform it into a theory, ethnomethodological studies nevertheless share a common vocabulary, that make research utilizing them recognizable as ethnomethodological. This is explicated in the following sections.

**Member, natural language mastery and glossing practices**

Ethnomethodology concerns itself with the members’ concerns. It does not try to take an outsiders perspective of the phenomena under study, examining it through this-or-that theory. A member is not always seen as an actual person, but is rather considered to be the mastery of a natural language. Being a member means that a speaker can be heard to “be engaged in the objective production and objective display of commonsense knowledge of everyday activities as observable and reportable [accountable] phenomena”20 (Garfinkel & Sacks, 1970. p. 342). The natural language mastery they talk of is later said to consist of *glossing practices*:

In the particulars of his speech a speaker, in concert with others, is able to gloss those particulars and is thereby meaning something different than he can say in so many words [...]. It is not so much ‘differently than what he says’ as that *whatever* he says provides the very materials to be used in *making out* what he says. [...] his talk itself, in that it becomes a part of the selfsame occasion of interaction, becomes another contingency of that interaction. It extends and elaborates indefinitely the circumstances it glosses and in this way contributes to its own accountably sensible character (ibid, pp. 344-345).

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20 The brackets denote that this is a "formulation". See the appropriate section below for an explication.
The notions of member and natural language mastery are not exactly perspicuous, but they are still useful concepts in dealing with people’s dealings. The conclusion is that a member is anyone with a natural language competency, someone able to produce *in so many words* the objective and commonsense knowledge required in each situation.

Taking the members’ perspective of any studied situation also means adhering to the principle of “ethnomethodological indifference”. The ethnomethodological analyst is careful not to pass any kind of judgment on the members’ activities. Doing this leads to ironical accounts of what people are doing, not taking their local practical actions and understandings seriously (Marcon & Gopal, 2003). The ethnomethodologist tries not to formulate normative accounts of members’ activities, but rather to understand how normative accounts are used by members’ themselves to meet various ends. The ethnomethodological indifference also means not passing normative judgment on the accounts of formal analysis, but to treat ethnomethodology and formal analysis as two incommensurable and alternate projects (Garfinkel, 2002, pp. 170 - 171).

**The analyst’s competence and the unique adequacy requirement**

In order to take the members’ perspective of any type of interaction, the analyst needs to comply with one of ethnomethodology’s few methodological commitments. The analyst needs to be able to understand the situation under study in the same way as any competent member would. This requirement is called the *unique adequacy requirement of methods*:

> To comprehend the unique ‘what’ at the core of each coherent discipline requires a reciprocally unique method for coming to terms with it. Such a method is inseparable from the immanent pedagogies by which members master their practices (Lynch, 1993, p. 274).

In other words, to understand what members are doing you have to learn what the practitioners learn. In order to comply with the announced definition, it seems the researcher has to spend a very long time studying his or her specific surroundings, being willing to partake in every aspect of the practice that the members of that community themselves does. Garfinkel’s students commonly signed up for courses in their specific fields of study, from law to martial arts (cf. Garfinkel, 1986). He has himself proposed that ethnomethodology should be bred with the

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21 Formal analysis, as it is done (written, talked about etc.) in natural language, is also a glossing practice.
professional disciples that it is studying to create "hybrid disciplines" (Garfinkel, 2002, p 100 – 103; Garfinkel, 1986). In ethnomethodological hybrid studies the sociologist immerses him- or herself in the studied discipline, not in order to produce disinterested sociological reports of the work that is done in that domain, but in order to improve that work through ethnomethodological understandings of it. Technomethodology (Dourish & Button, 1998) has become the most well known of these hybrid disciplines.

An ethnomethodological investigation does not, according to Lynch (1993, p. 274), have to mean the complete immersion (and eventual disappearance) of the sociologist in the studied field. The object of ethnomethodology is not to bring back increasingly detailed reports; nor is it to in a scientific way increase the details of its observations:

What is to be recovered [described] should not be likened to a transportable ‘content’ to be unearthed through archaeological investigation. Instead, each disciplinary ‘content’ might better be understood as itself an immanent archaeology of knowledge (ibid, p. 276).

The “what / this” (quiddity or haecceity) of any discipline is not a self-contained sphere, knowable by only the initiated few. Many methods making up a discipline, those the sociologist should learn in order to fulfill the unique adequacy requirement are ordinary, common practices used by everyone now and again. Lynch (ibid, p 279) makes the example of a scientist who when making a measurement uses a specialized instrument. Even though adequately operating this instrument may take lots of training and practice, the work of making a measurement is commonly known. This is not to say that learning how to make a specific measurement in a specific domain will not take years of training or even be recognizable to outsiders as a measurement. But “measurement” is a word in a language known in common, and once a procedure has been identified as a measurement, it can be talked about as such, inferences and assumptions can be made etc. These might be correct or faulty, but incorrect use of a word does not entail incommensurability between “insiders” and “outsiders”.

The term quiddity (“just-thatness”) was substituted for haecceity by Garfinkel in order to emphasize the “just-thinness” of an object, distancing ethnomethodology from accusations of essentialism, even though both can still be used synonymously to refer to “what makes an object what it uniquely is” (Lynch, 1993, p. 283)
Rather, Lynch makes it his case that Garfinkel’s (1967) words on unique adequacy and Wittgenstein’s (1953, § 23) on language games can be read in much the same way. Just as the work in one discipline is not self-contained and unintelligible for outsiders, but can be “translated” between settings, so are language games not incommensurable and autonomous islands of knowledge, but instead each is part of “[...] an activity, or a form of life” (Lynch, 1993, p. 278). Studying interaction, the analyst does not necessarily need an instrument extraneous to the situation, as he is already equipped with a mastery of the language spoken, and this will be an important method in understanding any situation (Schegloff, 1997).

**Reflexivity and indexicality**

Ethnomethodology considers actions to be ordinarily describable by members, and this in turn means that: “sociological description is an endogenous feature of the fields of action that professional sociologists investigate” (Lynch, 1993, p. 16). That members are ordinarily doing sociological descriptions when giving accounts of activities is one of the key points of ethnomethodology. Just as sociological accounts contribute to the understanding of human activities, any members’ accounts are reflexive of the settings that they occur in: they contribute to understanding the setting in which they occur, as well as contributing to the setting (the conversation) itself. “Even if they inadequately represent ‘society’ or some part of ‘society’, such accounts contribute to the discourse and actions in particular scenes” (ibid). Compare this to the point made earlier, that adequate language mastery implies that an account

> […] in that it becomes a part of the selfsame occasion of interaction, becomes another contingency of that interaction. It extends and elaborates indefinitely the circumstances it glosses and in this way contributes to its own accountably sensible character” (Garfinkel & Sacks, 1970, pp. 344-345).

In other words: saying something will change the way that self-same conversation is done. That utterance is added to the list of “utterances uttered” and can be referenced as such by those present. **Sequential structure** (how one utterance is followed by another in a turn-by-turn fashion) is one of the phenomena that ethnomethodology and conversation analysis explicates in order to study reflexivity of interaction (more about this later on).

That an utterance contributes to its own understanding has to do with the indexical properties of utterances. “Indexicality is a ticket that allows entry into the ethnomethodological theatre, and it is torn up as soon as one crosses the threshold” says Lynch (1993, p.18), implying that this
concept is not a theoretical or analytical term per se but a subject-matter for ethnomethodological investigations (especially pertaining to conversation analysis). The standard definition of ethnomethodological indexicality goes something like this: “you cannot beforehand determine the meaning of a specific utterance, as this is dependent on the context of its production”. To this Lynch (ibid, p. 22) answers: “it no longer clarifies anything to say that every possible utterance, statement, or representation is indexical“. That utterances are context-dependent does not tell you anything further: what the sociologist has to make his or her mission is to describe how members do the “demonstrably rational properties of indexical expressions” and “what makes members manage to make adequate sense and adequate reference with the linguistic and other devices at hand” (ibid.) Examining the use of indexical utterances and actions is one way of explicating the local production of order. Stating that the local constituents of its production determine the sense of an utterance is a mute point and should be more like a premise for ethnomethodologists than anything else. And this goes for all of these concepts: ending a study by saying that members’ actions are “locally achieved and sustained phenomena of order” might be all right in an exposé of ethnomethodological perspectives (such as Garfinkel, 2002 or Hester & Francis, 2004) but not a valid result in an empirical thesis such as this one.

**Accountability and formulations**

Ethnomethodology has a lot to do with how members’ describe (or produce “accounts”) in and of their interactions. As members are able to recurrently and unproblematically produce such accounts means that whatever they are describing is accountable. In short (long?) Garfinkel (1967, p. vii) defines the ethnomethodological use of this word as:

> Ethnomethodological studies analyze everyday activities as members’ methods for making those same activities visibly-rational-and-reportable-for-all-practical-purposes, i.e. ‘accountable’ as organizations of commonplace everyday activities.

An explication is necessary, taken from Lynch (1993, p. 14): social activities are orderly (non-random, repeated and meaningful), observable (the orderliness is publicly available), ordinary (the ordered characteristics of a social activity are “easily and necessarily” observed by a participant), oriented (participants orient to the sense of each other’s activities, and that orientation is available as a resource for others; see the section on sequentiality for a further explication), rational (predictable and analyzable for and by members) and describable (language users can commonly give adequate descriptions in, as and through the order of their activities). Accountability as a
concept thus stretches beyond direct verbal accounts by members. Any social activity that shows some of the properties outlined above (What Garfinkel & Sacks, 1970, dubbed “the formal structures of practical action”) can be called accountable.

In close connection to accountability is the concept of formulations. For ordinary conversationalists a formulation is “saying-in-so-many-words-what-we-are-doing”. A formulation can be an explicit elicitation of what-we-are-doing-right-now, as in an utterance like “was ‘that’ a question?” A formulation does not need to be an explicit verbalization of what is going on. It can be done in “so many words”. In Garfinkel & Sacks excerpt (ibid, p. 350) this is explicated in this excerpt, where the brackets around B’s utterance denote the formulation:

A: [...] Will you do me a favor and evade some questions for me?

B: [Oh, dear, I’m not very good at evading questions]

For Garfinkel and Sacks, a feature of a conversation such as this one is that B, apart from whatever else is happening, is saying “in so many words” what is happening in the very same conversation. The formulation does not, according to Lynch (1993, p. 186), make a “metacomment” about what goes on in the conversation. The formulation “does not stand outside the temporality of the dialogue [...]”; rather, it makes sense through the way it can be heard as a substantive move in that dialogue” (ibid).

Garfinkel & Sacks summarize features of formulations as: a) doing accountably rational activities can be recognizably accomplished and comprehended in an activity without participants having to formulate that the activity is accountably rational and b) there can be no definitive formulation of “activities, identifications, and context” (Lynch, 1993, p. 186-187).

Each formulation thus has to be seen as it happens in interaction, its place and sequence within other actions: its reflexive properties (more on this further on). A formulation is not a way for members or sociologist to impose order on a previously disordered interaction.

Formulations have no independent jurisdiction over the activities they formulate, nor are the activities otherwise chaotic or senseless. Far from it, the sense and adequacy of any formulation is inseparable from the order of activities it formulates. It does not act as a substitute, transparent description, or ‘metalevel’ account if what otherwise occurs. (ibid).
To provide such “metalevel accounts” of interaction is the business of sociologists (doing what ethnomethodology calls “formal analysis”), and this explication of the notion of formulation should also be seen as a methodological discussion in this thesis. Whatever formulations do occur in studied interactions should be analyzed with respect to their sequential import on further interaction, how they are sensitive to preceding and projected utterances.

Constructive analytic [formal analytic] accounts of formal structures are thus practical achievements through and through. Natural language provides to constructive analysis its topics, circumstances, resources, and results as formulations of ordered particulars of members’ talk and members’ conduct, of territorial movements and distributions, of relationship of interaction, and the rest” (Garfinkel & Sacks, 1970, p. 346)

Formulations are not the “final word” on what goes on in interaction, neither by a social scientist studying interaction or a member participating in that interaction. Formulations are methods members have for getting work done, and they are part and parcel of various sequences of action.

Formulations are not the machinery whereby accountably sensible, clear, definitive talk is done. (Ibid, p. 353 – 354).

In doing formulations members are manifesting the accountably rational order of their concerted activities, that the interaction up to that point has been taken in such-and-such a way. Once again with hint of Wittgenstein Lynch (1993, pp. 188 - 189) compares formulations with that of stating a rule (which is a kind of formulation). The stating of the rule does not give the extension of its use: it is through being involved in a common form of life that people routinely can apply the rule correctly in a variety of circumstances. Similarly, it is not with reference to some formulation (explicit or otherwise) of the activity that the members understand it for what it is, even though understanding can be demonstrated through doing a formulation. Doing a formulation (citing a rule) is an activity in itself, a “substantial conversational move” (Ibid), and not an action over and above the activity at hand:

For the member it is not in the work of doing formulations for conversations that the member is doing [the fact that our conversational activities are accountable rational] (Garfinkel & Sacks, 1970, p. 355, brackets in original)
In practice, because formulations are always understood in sequence, they are not necessarily clarifying on every occasion, which would be another indication of that they cannot bestow order upon disordered interaction. An example of this is Garfinkel’s “experiments” (1967, ch. 2) where one party to a conversation has been instructed to constantly ask for elicitations of what has just been said in order to dissolve ambiguities or possibilities for misunderstandings. The findings of that study were that such interrogations did not result in better-organized interactions, but rather led to “the disruption, even destruction, of the conversation itself” (Sharrock & Anderson, 1991, p. 61).

It is tempting for the analyst not to examine the participants’ own formulations of their situation (thereby bringing to the forefront what it is in that situation that they are oriented towards and what contextual aspects are involved in that interaction), but instead to superimpose theoretical formulations on that interaction. These formulations will then function as a gloss over the work of that interaction, and so render it invisible. The research then ends up with a sociological formulation of that interaction that does not necessarily have any close connection to what the interactants were doing in the first place. Compare this to the following example of interaction in a simulation:

Nurse 2 is about to open a sterile package of saline solution, yet hesitates and asks one of the persons in charge of the simulation (not visible in the picture): “kan ja knäcka den här?” (“can I crack this one?”). She gets an affirmative nod for reply, whereby she continues to open the package.

In this short episode in the simulation it can be seen how a potentially transgressive situation is avoided. The auxiliary nurse’s hesitancy to use the materials provided in the simulation reflexively demonstrates the simulation as one where the connection between the simulation and the practice that is being simulated is not uncomplicated (even though it has been designed to be). Her account reflexively formulates the simulation as a simulation, where it is an accountable fact that some aspects are different from “regular medical practice”. That this procedure (opening a sterile package) occurs in this situation demonstrates this situation to be ambivalent and negotiable. The Game Master’s affirmative nod, as a next sequential action, formulates
Auxiliary Nurse 1’s intended action as one that is allowed and preferred in this simulation. *Thereby* she is reflexively formulating the simulation as a situation that *in this practical respect* is similar to the simulated practice. *In and through* doing this she is also evading making the ambivalent character of the situation a further topic of the conversation, a transgressive activity that would compromise the fidelity, immersion and feeling of presence in the simulation for the participant. They are held accountable to the simulation (in this limited aspect) as *authentic for all practical purposes*.

### Conversation Analysis

Closely related to the field of ethnomethodology is that of conversation analysis (CA). Founded by Harvey Sacks (cf. Sacks, 1992), and based largely on his and his successors’ work it takes as its object of study “naturally occurring talk-in-interaction”. Especially the *sequentiality* of talk-in-interaction has been CA’s hallmark, showing how talk is built up turn-by-turn by participants to the conversation (cf. Sack, Schegloff & Jefferson, 1974). CA has had great impact on how ethnomethodology studies naturally occurring interaction. A conversation analytical mode of transcribing data (such as Jefferson, 2004) is frequently used in ethnomethodological studies, even though ethnomethodology to a further extent than conversation analysis relies on other ways of demonstrating social order as well (cf. Garfinkel, 1967 & 2002).

In this study conversation analysis is used as a methodology more than anything else. CA shows how recoded data can be obtained, transcribed and analyzed in ways that concur with ethnomethodological standpoints. As this study is interested in how transgressions in simulations occur, it will naturally be interested in how this is built up in sequence (turn by turn). Such matters are best explicated using conversation analytical concepts and methods, including adjacency pairing and next-action analysis, all explained below.

### Sequentiality

CA and interaction analytically inclined ethnomethodology focuses on the sequential ordering of utterances and gestures. The reason for this is “[...] the recognition that, in a variety of ways, the production of some current conversational action proposes a here-and-now definition of the situation to which subsequent talk will be oriented.” (Atkinson & Heritage, 1984, p. 5. Also look

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23 Even though it at the onset was closely intertwined with ethnomethodological concerns, it has grown increasingly scientistic and formalistic, some claiming that it has taken on some of the attributes of formal analysis (Lynch, 1993, p. 25)
back at the section on reflexivity on page 33). All utterances, claims conversation analysis, are produced in relation to the structural ordering of utterances preceding it, and likewise provide a resource for the production of relevant next actions by participants (Goodwin & Heritage, 1990. p. 288) “No empirically occurring utterance ever occurs outside, or external to, some specific sequence” (Heritage & Atkinson, 1984, p. 6).

Sacks et al. (1974, p. 728) claim that “generally, a turn’s talk will be heard as directed to a prior turn’s talk” and that specific techniques have to be employed in order to direct an utterance at talk further (in terms of turns-of-talk, not “objective” time) from the adjacent utterance. Also, relating an utterance to a prior utterance is a manifestation of the speaker’s analysis and understanding of that prior utterance (Atkinson & Heritage, 1984, p. 8). This orientation gives interactants and analyst alike a resource for understanding an utterance. In other words, that “[…] speakers understand an utterance by reference to its turn-within-sequence character provides a central resource for both the participants and the overhearing analyst to make sense of the talk.” (Ibid, p. 7)

Two turns of talk that structurally fit together, where one should be produced after the other, is called an adjacency pair (Schegloff & Sacks, 1973). These are ubiquitous in talk-in-interaction (the most obvious being a question/answer pair). An adjacency-pair is an easy to recognize instance of what in its general form is called sequential implicativeness of a turns talk (Ibid). The production of a first pair-part normatively requires the subsequent production of a second pair-part (Goodwin & Heritage, 1990)

Producing a relevant second pair part of an adjacency-pair displays the orientation, analysis and understanding of the first pair part in-and-through its production (Schegloff & Sacks, 1973, pp. 297-298). The sequential production, or lack thereof (what Schegloff (1968), calls “notably absent”) comprises a proof procedure (Sacks et al., 1974) that the participant or analyst can use in order to give an account of just how members manifest understanding in situ.

The sequential next-positioned linkage between any two actions is a critical resource by which a first speaker can determine the sense that the second made of his or her utterance (Heritage & Atkinson, 1984, p. 8)

The sequential organization of situated interaction is neatly summarized by Heath & Hindmarch (2002, pp 105-106):
In interaction participants produce their actions with regard to the conduct of others, and in particular the immediately preceding action or activity. In turn, their action forms the framework to which subsequent action is oriented. So for example, participants produce actions with regard to the prior action and the frame of relevancies that it establishes; moreover, it is understood by virtue of its location with regard to the preceding action(s). Actions are also prospectively oriented, designed to encourage, engender, even elicit subsequent action, which in turn form the basis to the participants’ assessment of each others’ and their own conduct.

In this way, members can use the sequential ordering of actions (utterances, gestures, use of artifacts, gaze etc) as resources for understanding and reflexively producing the on-goings of the situation. Such resources are often dubbed *semiotic resources or semiotic fields* (Goodwin, 2000, p. 1494). As the orientation to sequentiality is a powerful resource (i.e. method) for understanding-and-producing interaction, it also becomes a topic for ethnomethodological analysis. The notion of sequentiality can also be extended over a larger part of a conversation. For example, a summons-answer adjacency pair is followed by a “first topic” of the conversation (Schegloff & Sacks, 1973, p. 300). Introducing a first topic is produced-and-understood as such in light of the previous turns’ talk. Introducing a second topic (introducing a “second story for example, cf. Sacks, 1992, p. 765) is done in the context of the first. Closing the conversation is achieved in the context of that the relevant topics have been discussed (Schegloff & Sacks, 1973, pp. 303 - 309). The “conversation as a whole” therefore becomes an oriented-to aspect of the self-same conversation.

Sequential organization is a method for the production and understanding of interaction. It is upheld in what Goodwin (2000) calls a *situated activity system*. This is described as a setting with several people trying to do something in concert, using multiple semiotic resources in order to do so, attending to relevant phenomena surrounding them as well as the activities of which their current actions are part (Ibid). These semiotic resources include speech, gestures, posture, placement and various artifacts. Using semiotic resources participants are simultaneously formulating the previous interactions as well as adding another action to that interaction, thus showing the reflexive properties of interaction.

A particular, locally relevant array of semiotic fields that participants demonstrably orient to (not simply a hypothetical set of fields that an analyst might impose to code context) is called a
contextual configuration. As actions unfold, new semiotic fields can be added, while others are treated as no longer relevant, with the effect that the contextual configuration that frame, make visible, and constitute the actions undergo a continuous process of change. From the analyst's perspective, contextual configurations provide a systematic framework for investigating the use of the body as a mutually oriented-to focus for the production and display of meaning and action. (Goodwin, 2000)

In the simulations at hand, looking at the sequentiality of changes in contextual configurations might say something about how the understanding of the simulation varies over time. For example, transgressing the simulation might at some point entail a switch of topic in the conversation. In order to understand how this switch in topic is managed concertedly, following Goodwin in the quotation above, looking at the use of semiotic resources (such as gaze, posture, gestures, speech and use of artifacts) of the participants will allow the analyst to observe how they vary their orientation to various parts of these semiotic resources, changing the contextual configuration of the setting. Looking at the concrete uses of gaze, speech etc in the setting allows the analyst do determine how topic is switched (or how other transgressions come about in systematic ways), instead of merely determining that the topic was switched because the participants ran out of things to say on that topic (Maynard, 1980). Goodwin & Goodwin (1992) have in fact shown how assessments that are used to manage topic-switches in conversation demonstrate “heightened appreciation of [the topic at hand] without proposing that others need continue talking about it forever” (p. 171).

Discussing the participants' interactions as interlocking semiotic fields gives the analysis a much-needed sense of direction. It is not that interactions consist (in any realist sense of the word) of these contextual configurations, but trying instead to describe and systematize the use of these semiotic resources might show us something of how the simulation, for the participants, comes out in the way that it does. This study is not trying to say anything ontologically momentous, but to point at various methods for the achievement of a simulation as a hybrid between different types of activities.

On the same note, it is important restate that the sequentiality of interaction, such adjacency pairs or “the conversation as a whole” are not structures imposed on interactants “from above”. Sequentiality and the patterns (the systematics) that can be discerned in interaction are not rules
in any strict sense\(^{24}\). Instead, switching speakers at the proper time or managing a transgressional switch of topic, for example, is not an action governed from outside the interaction but one managed by participants of that interaction, using local semiotic resources. The sequential order and turn structure of utterances is the primary context whereby the indexical properties of interaction is demonstrably understood (Schegloff, 1973).

The various types of activities that get done through uses of local semiotic resources in the simulation can in some sense be regarded as language games (Wittgenstein, 1953, § 23). Understanding the concerted production of such language games entails to refrain from making any claims of defining general structure of these interactions. In line with the reasoning in the paragraph above, this study tries to show how the rules and structures of the simulation are achieved through the use of local semiotic resources. Formulations and accounts serve the purpose of demonstrating to the participants in what way the simulation has been perceived so far, and how it is to be understood further on. To the participants and analyst alike, it is in-and-through such formulations that the structure of the simulation is seen. This study aims at showing how such accounts are reflexive of the situation that they are produced-and-understood in: how they shape the simulation into new forms.

**Summary**

Connecting to some of the technical details of ethnomethodology explicated here, the questions of this study can come into a new light. Examining how transgressions in intensive care simulations are done in practice is another way of saying that this study aims at explicating the work of doing such transgressions, that is, how the participants say “in so many word” what it is they are doing at any given moment. It is thus how the participants formulate and produce accounts of their current actions that are the empirical issues here. How such account function in formulating the situation as “proper medical work in a simulator” or as something other than that is what might provide an answer to how transgressional work is interactionally achieved in the simulation. How the participants reflexively use accounts in and through which they understand the situation in a specific way, and how these situations are accountable as such is something that hopefully will further the understanding of what might occur in intensive care simulations.

\(^{24}\) Even though later versions of conversation analysis bears close recemblances to constructive analysis in its emphasis on rule following (cf. Lynch, 1993, p. 25; Crabtree, 2000).
Doing an ethnomethodological analysis of transgressions in intensive care simulations means to refrain from supplying formulations of the interactions that these transgressions consist in. In many of the examples of studies of simulations provided previously it is clear that whatever other merits they may have, they all have in common that they loose the phenomena (of the lived work of doing simulations) in and through supplying extraneous and *post hoc* formulations of that work. These studies all render invisible the practicalities of making these situations into simulations in the first place.25

Using ethnomethodology's technical jargon, what this study is trying to do can be respecified as “what is it about this work in the simulator that makes doing [medical and transgressive work of a medical simulation] that work's accountable text?” The text within brackets denote that this is a gloss and a formulation (Garfinkel & Sacks, 1970) that this study will try to explicate by providing detailed accounts of just what the haecceity (the “thisness”) of that work is. The answer to this question will consist of the *participants’* inherent accounts, *their* formulations, *their* pedagogies, *their* methods for saying-in-so-many-words and doing-in-so-many-ways that “*this* work is proper medical work in the simulator” and “*this* work is transgressive of doing proper medical work in the simulator”. And it is by this question that this study will precede. The trick is to provide explicative accounts of episodes in the simulation where these phenomena are evident, without resorting to the *post hoc* accounts that have been used in the majority of studies of simulation. Accounts in ethnomethodology are explications of the participants’ own local *prospective* accounting practices (Rawls, in Garfinkel, 2002, p. 34 - 35). It is how they accountably work up the simulation *here and now* as being an activity of this or that kind. How to do this in practice, using video data and interaction analysis is described in the next chapter.

25 Hester & Francis words (2000, p. 6) discusses this issue in the more general field of studies of education:

In the field of education, as elsewhere, this strategy [formal analysis], while it has the advantage of ensuring that some kinds of ‘findings’ are always possible, does so at the expense of precluding inquiry into how it is that the phenomena under study are recognizably ‘educational’ in the first place [...] it does little justice to the variety of educational activities, settings and relationships.
The methods of this ethnomethodological investigation

Ethnomethodology does not rule out any methods from consideration *a priori*. In the ethnomethodological canon a wide array of methods have been utilized. Garfinkel, the founder of ethnomethodology, used such a variety of methods, such as interviews and observation (Garfinkel, 1967, pp. 118 - 140), experimentation (Garfinkel, 1963) tutorial exercises (Garfinkel, 2002, pp. 143 - 168) and analysis of recorded conversations (Garfinkel, Livingstone & Lynch, 1981). The most commonly used method, however, is one or other variant of *interaction analysis*. In CA it is an essential feature of the research to gather, transcribe and analyze recordings of spoken, interaction. In ethnomethodology, it is nowadays common, although not ubiquitous, practice to use analyze video-recordings of interactions (Ten Have, 2004, p. 33).

The analytical commitments of ethnomethodology place certain constraints on what type of data that can be used for an analysis of interaction, especially if episodes of interaction are to be analyzed according to conventions in conversation analysis (Atkinson & Heritage, 1984, p. 4). It must be so disposed so that it can reveal to analyst and reader alike the interactionally relevant understandings that the participants display. If understandings are to be understood as public manifestations (rather than private events accompanying behavior), data must be able to capture these. Video recording is a practical choice in this respect, as it has just those called-for properties of being able to reveal the interactionally relevant actions, and doing so recurrently and reliably (ten Have, 2004, p. 52). 26.

Of course, to coherently analyze something as complex as human interaction in all its relevant detail is not easy. The crucial point here, however, is that this is an empirical and methodological problem rather than a philosophical one27. To say that social life is complex (or *too* complex) is an utterance of common sense (Hester & Francis, 2004, p. 210). On the same note

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26 In fact, Sacks started studying talk-in-interaction (what became conversation analysis) because of the possibility of data re-examination that tape-recorded conversations allowed (Lynch, 1993, pp. 216-217). A recent textbook on methods for studying ethnomethodology states that there are four types of methods used in ethnomethodology: breach experiment; the researcher studying his or her own sense-making practices; using ethnographic methods for studying sense-making in others and interaction analysis (using recordings and transcripts). According to this line-up, this study would be a mix of the latter two (ten Have, 2004, p. 53)

27 See Winch (1958) on a discussion of the difference between conceptual and empirical questions.
[...] to say that a given course of action by a particular actor or group is complex is to say nothing ontologically momentous. Actions are complex only as far as, for example, it is not clear to the members of society involved what is the best way to proceed in order to achieve their goals, and it is less than apparent what the potential consequences are of acting this way rather than that. Such complexities are not philosophically profound discoveries (only capable of being made by sociologists), but rather are frequent and mundane features of daily life experience. (Ibid)

As discussed previously, transgressional activities in simulations should be discoverable as accountable phenomena, and are therefore describable phenomena. A study of such accounting-practices warrants a discussion of how they are to be described. Earlier, the point was made that ethnomethodology refrains from issuing glosses (“formulations”) of the studied interactions; leaving aside the question of what an ethnomethodological explicative account could look like.

The important issue here is to not consider ethnomethodology as a ready-made format, as an empty box ready to be filled with appropriate data and analysis. The topics, methods and analysis of ethnomethodology vary enormously (Maynard & Clayman, 1991). Instead, to write an ethnomethodological analysis means to be ready to change the format and methodology of the study in order to be able to let the reader understand as much of the participants’ practical actions as possible. This might involve anything from changing the methods used to displaying data in another form in the final written product. In the end, the only methods that ethnomethodology adheres to is just these local and uniquely adequate methods for producing this local accountable social order (cf. Lynch, 1993, p. 275). There is no step-by-step method for the study of ethnomethodology, the correct application of which will yield valid scientific results. Ethnomethodology is inherently unscientistic, although it frequently has been misunderstood as a positivist project (Rawls, in Garfinkel, 2002, pp. 20 - 22; 57).

The data gathering in this study has not been guided by some scientific theory. There has been no generating of a “hypothesis” of what goes on in the simulations. This does not, however, entail a “naive realism”. Analysis does not mean to gather data and let it speak for itself. What it means is that the data gathering itself was not guided by a principle (scientifically generated) of what was to be considered as more or as less interesting in the interactions. As described in the introduction,
the data gathering was informed by general commitments to ethnomethodology\textsuperscript{28}. Such a non-theory approach means, in this case, that no particular person was in focus (for example following him or her with the camera), even though this in hindsight could have provided the study with more detailed material of for example the simulator's pilot's work or the instructions given by the Game Master. Using more cameras to cover interactions in the simulation would to some degree been able to overcome this.

Using video-data, which is the chosen method for this study, to provide an ethnomethodological explicative account means to direct the reader at places in the interactions that are of specific interest to the questions asked in the study. This could of course be seen as a step away from the no-hypothesis method advocated above, but this can be considered an artifact of the general format of a scientific study, where an introduction sets the agenda of interest for the rest of the thesis. This format does not adequately reflect the process of how this study was conducted\textsuperscript{29}. Doing the actual study began with myself gathering video-data and getting to know, through observation, how these simulations were done. This was followed by transcription and rough analysis of the data. This set in motion a cycle of analyzing data, developing themes and discussion-points, and transcription of those parts of the data that are of interest to these themes, which in turn refines those themes as headings for the results of the study. Even though this resembles a hermeneutical data analysis, it does not entail an interpretive approach. The analytical focus sits squarely on the demonstrably accountable practical actions of the participants. Neither should it be considered to be the development of a “theory” of what goes on in the simulation, but of a bringing-to-the-front of those accounts in the simulation that show the participant to be actively engaged in achieving the understanding of their situation \textit{as} a simulation. Throughout all this, if this study should be kept in line with (and be recognizable \textit{as}) a study in ethnomethodology, the analyst must be most careful in trying to avoid the Scylla of theoretical generalization (formal analysis) and the Charybdis of mere trivial description. To write up an adequate explicative account of interactions in a simulation means to \textit{demonstrate} how participants

\textsuperscript{28} See for example Koschmann et al. (2004) for a summary of how such principles and commitments pertains to gathering and analysis of video data in learning sciences.

\textsuperscript{29} I.e. it glosses over the lived work of \textit{doing} the study.
demonstrate their activities, but at the same time not claim that there is some general structure\textsuperscript{30} playing a part underneath the visible-and-understandable actions that the participants do, while also being able to say something of interest about some phenomena that has previously been missed or misunderstood.

Relating to the discussion on formulations in the previous chapter, the analyst must be careful to not issue (re) formulations of the interactions in the simulation. It must be the nurses’ and doctors’ own accounting practices that are of importance to the study, their ways of saying something valid regarding the connection between the simulation and that which it simulates. If this study only shows how the analyst perceived and accounts for the simulations then something has gone awry.

**Video analysis**

Video recording and analysis is the primary method for this study, and there are a few, quite simple, reasons for this approach. These are contrasted with some of the alternative ways that a study of interactions in simulations could have been conducted. There are a few factors that limit possibilities of using alternative methods. By demonstrating these the benefits of using video data should be obvious.

- **Complexity:** The simulator work is a highly complex system. Even though this study refrain from making a formal definition of this concept, it is obvious that it is impossible to keep track of 6-8 people, the simulator and all of their ongoing interactions. To produce a written account of this situation is poses even more problems.

- **Noticing small and very fast actions** is not easily done without replay capabilities, and a lot of important aspects of communication will be overlooked. Many demonstrably noticed and reacted-to interactions happen in very brief moments. Without camera, if the observer misses them the first time they are lost forever.

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\textsuperscript{30} Ethnomethodology does not claim that there is no generality to members' actions. Rather, it is local cohorts of members that staff the production of particular local orders. Achieving generality, recognizability and the rest, in and as of members' practical actions, is those particular members' own concern (Garfinkel, 2002, pp. 224 – 239; 248)
Video data let the analyst do replays (in slow motion if necessary) in order to capture fleeting actions.

- Details: Video recording allows the analyst to analyze interactions in their fine details. As long as it is captured on camera, even very minute actions are detectable.

- Visibility: Up to this point, it could be claimed that audio-recording does the job just as well as video, but if you want to take into account positioning, gestures, gaze and the rest there’s not much you can do about it. Video becomes the only viable option. Using audio recording together with ethnographic field-notes might capture some of these aspects (such as placements in the room or what artifacts are used) but would lack the means to coherently observe the rapid details of the interactions. Also, in such a highly complex environment, it is very hard to transcribe talk between more than two or three people. With video, the analyst can use the positioning, gaze and gestures of the interactants in order to determine who is saying what to whom. Hissing from oxygen flasks, alarms from respirators, the slightly distorted voice of the mannequin and other sources of noise does not make this easier.

- Unfamiliarity: Video data, together with field notes taken at the visits to the simulation-center is a resource for the analyst to gain some of the competence in intensive care medicine necessary to do coherent analysis of the simulations. Going through videotapes over and over gives some more insights into how simulator work happens.

In conclusion, in this study there is no alternative method that could have been used to analyze these aspects of these interactions. Careful observation of a large number of simulations, as well as fieldwork in the intensive care unit might do the trick for an ethnographer, but ethnomethodology is simply not ethnography. Reasons like the complexity and detail-level of interactions make ethnographical field-note taking a daunting task in the situations studied. Similarly, using only audio data misses a great deal of the uses of non-audible semiotic resources in the simulations. Other methods, such as interviews and questionnaires misses the interactions

31 This is described by Lynch (1993, pp. 90 – 102), criticizing the position taken by Latour & Woolgar (1979) on ethnographic redescription (reformulation) of laboratory work.
in the simulations altogether, except as post-hoc accounts of what has happened (Hester & Francis, 1994, p. 667). Interviews and questionnaires have a solid use in many previous studies of simulations, all which can be referred to as being of the formal analysis type (see the section on previous studies of simulations).

Even though extensive field-notes were taken before, during and after the simulation these are not used as data in the study. Instead, these are more like lecture-notes, used in order to understand a somewhat alien practice. For example, looking at the video of the simulation together with the team at the debriefing session, it is noticeable how they reacted at the events of the video, and the topics of their conversations at this time. This is yet another resource for learning how to think and react towards the events in the simulations, i.e. a part of acquiring the unique adequacy of methods outlined previously. This includes also visits to the intensive care unit where the crew and participants normally work.

Similarly, the informal interviews conducted with the simulator crew as well as other members of staff connected to the simulator-unit at the hospital was used only as a method for me to understand the practices, reasoning and technicalities involved in setting up and running these simulations.

Even though these methods could have been used in an alternative design of this study, they would not have rendered the same phenomena visible that this study attempts to do. Studying talk about simulators, as for example in interview data, is not the same this as studying talk-in-interaction in the simulations. It might be conceivable that other methods could have been used to elucidate phenomena of ethnomethodology, but the data, analysis and results would not have looked anything at all like they actually do in this study.

Is this a circular line of reasoning? If the claim is made that the results of this study are original in some sense, and that they can say something novel about simulator-work, does that automatically endorse the methods chosen and the way the analysis has been written? It all boils down to this.

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32 It should be mentioned that Hester & Francis (1994, p. 667) go on to claim that ethnomethodology per se is not critical of the use of interviews in sociology. They can, like all other interactions, be studied under the auspices of ethnomethodological indifference for their unique relevance as methods for the production of sociological accounts. In this study, however, it is not the sociological formulation of simulated practice that is the issue, but the nurses’ and doctors’ formulations in situ, and this places completely different constraints what methods are applicable.
fact: this method was used, and it allowed for the account that is this thesis to be written. One might afterwards discuss this choice, give motivations and discuss methodology as has been done above.

Could some other method be used? As accounted for above, there are strong methodological reasons why video-data is the logical choice for this study. Still, there might be a discussion regarding the validity of the results, and whether or not the data adequately allows the research-questions to be answered in a coherent way. The study shows some ways of how transgressional activities are achieved, maintained and sanctioned by participants in the simulator. It does not show every way in which this done, but this was never the point. Since there are no claims for generalizability, talk of how well this study describes any other simulation is null and void. As for possibilities of replicating this study: why would you? A result congruent with this one would not make a stronger case for this study, in the same way that an incongruent result would not render this study less valid. This line of reasoning also goes for ethnographic triangulation of methods, to let the findings of one method support findings of another method, as to create a study that as a whole is greater than the sum of its parts (refemenser till triangularisering). The findings of this study are intimately connected to the video-data that has been used, and no questionnaire or interview could render them more or less valid.

**Camera work: materials and set-up**

The placement and angles of the cameras and microphones can be seen in the picture. A digital video camera with external microphone was set up in one corner of the room on a tripod. This was just about the only possible position of the camera; the crowdedness and layout of the room made almost every other placement impossible. Centered on the head and torso of the mannequin, it captures many of the relevant medical procedures that were instigated. In the scenarios analyzed, respiratory failure was the main problem, resolved though inserting drainage in the chest. This of course gathers much activity central to the simulation-work to the mannequins’ torso, which places it in front of the camera. The external microphone was hung from the ceiling, centered over the lower part of the mannequins’ body.

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33 Regarding the methodological questions of this study: it is not how to make the results ”more real” or valid through the application of a ”correct” scientific method. Instead, it is how the participants make their situation ”for real” that is this study’s answerable research question.
An alternative camera-fixture was pre-installed in the simulator room, and it was the tape from this VHS-camera that was used in the debriefing-sessions with the participants. This camera was fixed at a higher angle than the other camera, looking down at the patient from the toe-end of the bed. The videotapes from this camera were used only in those cases were actions or speech was unclear in the digital videotapes.

Neither of these two cameras can be said to capture all relevant interactions in the simulator room, and this is of course a valid methodological critique. Even though most of the technical-medical procedures are visible in the data, those instances where someone moves away from the bed in order to prepare an instrument get an overview of the situation or whatever else are not visible in their entirety. In these cases, their interactions were only available for analysis as audio, in all probability missing interesting and important aspects of their physical behavior.

**Transcripts and other transformations**

Videotapes were transcribed using various techniques. The data material was not transcribed in its totality. Instead, a randomly chosen recording was transcribed according to conventional CA standards (Jefferson, 2004), in its entire length. At this point, the research-question of the study had not been established, but the transcription was used as a starting-point of this work. Once this question had been elaborated, the other recordings were browsed for similar simulation-transgressing events, which were in turn transcribed and made available for further analysis.

Having established a set of interesting events, their interactional details were investigated using a “tabulature” approach to transcription. Here, each participant, including the mannequin, has his or her own “track”. Each track consists of a verbal and a non-verbal component, and the length
of each “box” show the actions length in relation to a time-axis and the actions of the other participants. This approach allowed a close investigation of the participants interactional relations in sequence, showing some of the temporal order of each action. An example of tabulature transcription can be found in appendix I.

There are of course problems inherent in this approach. Separating a continuous flow of corporeal actions and speech into discrete units is of course a method that distances the transcriptions from the data that it seeks to elucidate (Schegloff, 1984). Also, the conversation analytical unit of an “utterance” can be called into question as a discrete unit of analysis in the light of research into talk as one of many simultaneous and interdependent forms of interaction (Goodwin, 2000).

It should be said that transcriptions in this thesis are used as instruments for explicating video and audio-data, not as data of their own (see Ashmore & Reed, 2000, for a discussion on this). This minimizes the risk of “reification” of the interaction under study (ten Have, 2006). Transcriptions are used in order to keep track of the structure and order of the studied events, and are never analyzed on their own without the video-material that is their foundation. Of course, in the same way that video captures some and not all of the events in the simulations, the transcriptions are man-made artifacts and not free-of-fault.

A third method of transcription is used for presentation purposes in the written thesis. Here, a more narrative approach has been utilized in order for the reader to more clearly see the interactions made relevant in this study. Presenting a written statement about these events, one where video-data is not available to the reader, poses certain problems. It can be difficult to get any grip of the flow of interaction from standard CA-transcripts. Similarly, a tabulature-transcript will be very hard to read, as there are multiple simultaneous parallel tracks of interactions. Providing a narrative account of the features that are relevant for this study is done in order to give the reader a better understanding of how transgression in these simulations occurred, even if they will be less detailed that the two other forms of transcripts used previously34. The “narrative” transcriptions provided will, however, give the reader less detailed information (especially regarding precise timing of utterances and gestures), but will hopefully give a fuller

34 See Johnsson (2004, p. 115) for an excellent example of how this can be done.
experience of those aspects that are important for the analysis conducted here\textsuperscript{35}. It is not the case that detail (of some aspect of the analyzed interaction) will always enhance the analysis. Rather, in many cases detail (of for example precise timing or intonation) will obscure those aspects that are important for the analysis at hand (ten Have, 2004, p. 50).

A second problematic with the transcripts in this thesis regards the pictures, which accompanies the excerpts. For anonymity-reasons the participants’ faces are blurred, thus denying the reader a full sense of the direction of gaze or facial expressions. Drawings might have been a solution to this problem (see Goodwin, 2000 & 2002, for examples of this), but are beyond the scope of the resources for this study. In some cases, where gaze and facial expression is interactional importance, stylized expressions have been added.

Another problem of transcription is that of translation. Since all speech (with a few exceptions) in the simulations is in Swedish, and this is a thesis written in English, these have to be translated. For the sake of clarity and readability I have not included the original transcripts in Swedish. Of course, being able to compare the two transcripts can be of some use. However, it could only marginally contribute to the actual analysis in this these, and those episodes that have been problematic to translate have been so marked. Using translations might further increase the distance between the original interactions and how they are presented in this thesis, furthering the reader one more step from the original events (ten Have, 2004, p. 43). Providing as accurate translations as possible, together with the original speech and explications where needed is the only way to somehow avoid this unavoidable problem. An example of a piece of translated transcription can be found in appendix II.

The relation between the lived work of the simulation, the video recording, transcript, analysis, finished thesis (and in the end, the reading of this text) is hardly unproblematic, and has been treated in a variety of ways in CA (Ashmore & Reed, 2000, pp. 4 – 5, ten Have, 2004, pp. 41 – 53. See also Garfinkel, 2002, p. 145 - 168). In and through “working up” the lived event into an analytical object in the finished thesis, the original work in the simulation undergoes a series of transformations. Even though these are not informed by some “scientific” theory, there are of

\textsuperscript{35} In this thesis, the only notational devices necessary to understand for the reader are: “( . )”, denoting a brief pause, “[ ]”, denoting overlapping speech and “:::”, denoting a prolonging of some sound, the more colons the longer the sound.
course various local ethnomethods of ethnomethodology that have been used in doing these transformations (which are largely glossed over when producing this written account). For this study, they are the uniquely adequate methods of making the accounts of the simulations into a study in ethnomethodology. These include an array of analytical considerations. Selecting “intensive care simulation” as an interesting area of study in the first place is one. Focusing the camera on the torso of the mannequin (“because this is where a lot of interesting stuff happens”) is another one. Transcribing selected aspects of the participants’ interactions, such as speech and gaze, and focusing on the sequentiality of these interactions is another. Selecting episodes of “transgression” in the simulations as of interest for close description, and how these accounts relate to previous research on fidelity, immersion and presence in simulations, as well as to ethnomethodological accounts of “reality analysis” is also such a consideration that has gone into working up a written text of the lived event. In the end, transcripts are used as instructions on how to look at a particular piece of interaction, and instructions on how to read the text and understand the points the author is trying to make (ten Have, 2004, p. 51). Recordings, transcripts and analysis are not objective “imprints” of the original interaction, at least not in any positivist way. Ethnomethodological analysis is itself not exempt from the reflexivity that it tries to explicate. This is also the case here: descriptions of interactions are there to provide pointers towards those aspects of the simulations that are important for the questions of this study.

**Living up to the unique adequacy requirement of methods**

How well is the “unique adequacy requirement of methods” fulfilled in this study? Nursing and emergency healthcare is of course highly specialized work, with very specific techniques, technology and ways of talking of and understanding all its aspects. I am neither a trained nurse nor a doctor of medicine, even though I have had basic training in CPR. I have not had any specific training in how to handle the simulator in question, and my insights into the institutional orders and formal structures of the hospital in which the study took place are sketchy at best. Even though it is possible to learn a lot from first attending the simulations, and then transcribing and studying these situations in detail, in so far as to practically being put to the test and actually do the work described, it is all too probable that I would fail miserably. I cannot be mistaken for a competent practitioner in this setting (although this is probably more of an empirical question).

However, hopefully the text will show that I have a thorough understanding of those aspects of the simulation that are being analyzed. As shall be shown, much of the analysis revolves around issues of joking; playing a theatrical part; getting a new activity going; making sure an activity
does not get out of hand etc. These are all very common language-games, known by any speaker of a natural language. They do not require anything but that competence in order to be understood and reproduced. Sometimes these things get done through using a specific medical procedure or referring to some medical understanding of the situation, but the general format for these exchanges are recognizable and reportable by myself or any other competent Swedish speaking person. The specifics are recoverable through careful analysis of their interactions, as well as querying and looking into the things that are not obvious right away (i.e. fulfilling the unique adequacy requirement of methods through learning, partaking in the immanent pedagogies, of the setting).
General outline of the studied domain

This section provides contextual information regarding why, by and for whom the simulations studied were carried out, as well a summary of the scenario that was used. This is not to say that this information is automatically oriented to and taken into consideration by the participants, as this is a question for the moment-by-moment interactions that they engage in. Instead, this chapter should be seen as a means for the reader to gain some insights into the circumstances of the simulations. It is clearly necessary for the author to have an understanding of these things in order to be able to analyze the interactions in any knowledgeable way, and it is advisable for the reader to acquire this too.

The setting of the simulation and data-collection

The data collection was carried out in a large hospital in Sweden during spring 2004. At this hospital, the department for clinical training has set up a Laerdal SimMan-simulator in a room about six by six meters wide. This room includes the mannequin itself, human-sized on a regular hospital bed, as well as a workstation for the pilot (the person controlling the simulator) with the computer controlling the mannequin. The simulator is connected to a patient-monitor situated on one of the walls. The room also holds standard intensive care equipment, such as drugs and syringes, a hanger for intravenous drips, a stainless steel table on wheels, oxygen feeds, respirator etc. A defibrillator can be fetched from an adjacent room. Along the walls are a preparation tables with shelves and drawers, as well as a closet in one corner. Onlookers are seated on stools in one corner. The fixed camera-installment located on a fixture hanging from the ceiling, and the author's video camera is situated in the corner by the preparation table. The scope of the cameras as well as the placement of microphones is shown in the picture on page 50.

The room could very well be characterized as crowded. The total number of people in any single simulation is up to 13 (5 people in the team, 2 crew, and 5-6 onlookers, including the author). The bed with the mannequin together with the rest of the intensive care equipment takes up most of the space in the room. Hoses and wires connecting the mannequin to the computer running the simulation and to the pneumatic feeds powering its actions further restricts the movements of the participants.
The simulator

Technically, the simulator is an advanced piece of equipment. On the traditional hi-fi / lo-fi scale, as explicated previously, the simulator studied would normally be placed on the hi-fidelity end of the spectrum. It involves a complicated piece of machinery with the possibilities of simulating a high number of different scenarios (demonstrated in www.Laerdal.com). It can be used in conjunction with much of the advanced equipment normally used in intensive care medicine. This includes defibrillators, respirators, patient monitoring units, EKG-units and more. Generally, this equipment is standard issue, although there are some limitations for various reasons. For example, only a certain type of needles is used on the simulator (in order to not have to replace the skin too often).

Studying the simulator from a “realist” point of view (using the concepts outlines in the background chapter) the interface is high fidelity, even though there are some clear discrepancies compared to a real human patient. Many of the regular medical procedures can be done on the simulator, although some are ruled out. For example, you cannot use multiple canullas to administer drugs, blood or liquid. Rather, this has to be done using a single canula with multiple entry-points, and this is also stated to participants beforehand.

A high number of different parameters interact in the program running the simulator, and can be changed either at pre-programmed times in the scenario (such as “5 minutes into the simulation, initiate a cardiac arrest”), or via the actions of the team (“if you feed the mannequin oxygen through a mask, increase the oxygen saturation of the blood”).

In the simulations studied here, some of the more advanced programming functions in the simulator are not used. The simulator is not directly controlled via a pre-programmed sequence of events, which would automatically change the different parameters of the model. Instead it is the pilot, the person that operate the simulator, that manually controls all interactions between the parameters, and changes them, both in accordance with the actions of the team and following a predetermined sequence of events. This is written down on a paper situated at the pilot’s desk, and constitute a sort of flow-chart for the unfolding of the scenario.
Participants

There are two categories of participants in the simulation: the team and the crew. Also present, but generally not participating in the simulation, are the audience, including myself.

The team

In each simulation the nurses and auxiliary nurses all come from the same study-group (a way of structuring ongoing education for the personnel) at the major intensive care unit in the hospital. Each group consists of four nurses and four auxiliary nurses. While half the group carried out the first scenario of simulation, the other half of the group were present on stools in the quite crowded room (participants would often complain of this in the debriefing sessions). After debriefing, the roles were inverted and the onlookers became the participating team. They played out a different scenario (revolving mainly around a cardiac arrest) followed by another debriefing session. In this thesis, only the simulations where the first scenario was used are analyzed.

Although the personnel are all acquainted with each other, as they are enrolled in the same study group and working in the same unit at the hospital, they are not therefore automatically working together on a day-to-day basis. The intensive care unit in which they work has about 100 persons on its payroll, and many work primarily nightshifts or part time. Even though participants were sometimes working together on the unit, this was not always the case.

In the scenario, as well as in “real” practice, the intensive care team is required to summon a doctor whenever the situations call for specialist competencies. Such skills, in the scenario studied, include intubations, diagnostic work, minor surgery (inserting a drainage into the thorax of the patient in order to treat respiratory difficulties) and some drug-administration. Even though the nurses sometimes know these skills (and sometimes are eager to display them), formal protocol calls for medical doctors to perform these actions. For example, even though the team might correctly diagnose the respiratory failure in the scenario as a pneumothorax, a specialist is called upon to verify the diagnosis and perform some of the procedures needed to aid the patient’s breathing.

In the simulations, an intensive care doctor was on stand-by, waiting for the team to call for him or her on the beeper. This would usually happen either immediately or just a few minutes into the simulation. The doctor is not a part of the study-group that the rest of the team is. Several different doctors were used in the course of running all of the simulations, and most of them participated more than once. They were thus aware of what damages the patient had suffered and
what procedures the team were supposed to use (i.e. the scenario of the simulation) Doctors had been briefed by the crew previously, and were told to “stand back”, in order for the team to initiate procedures and do a lot of the diagnostic work.

Prior to the sessions, the participants had been informed that the simulations were going to be videotaped, both for the purposes of this study and for the following debriefing. The teams had also been informed of this study through a letter to the intensive care ward where they work some week prior, which is included in appendix III. At the start of the sessions, I was presented and additional information and clarification was given as to how the data material was going to be used and circulated. It was stressed that I did not have any medical training and was not there to pass judgment on the participants’ behavior.

**Crew**

The crew consists of the pilot controlling the simulator and a Game Master who directly interacts with the team. The pilot is an experienced anesthesiologist. She must be skilled both at understanding the actions carried out in the room, as well as having a thorough knowledge of the medical model that the simulator is built upon. For example, if someone in the team administers a certain drug, the pilot must check, either through hearing the team say what kind and which quantity is being used or through asking the person in question. She must then know what the effects of this drug would be on this particular patient. The pilot then manually changes the parameters shown on the patient monitor (including blood-pressure, heart-rate, respiration-rate and oxygen saturation) and the actions of the mannequin (the doll visibly breathes faster at higher rates of respiration), so that it adequately represents what the effects of that particular drug would be on a flesh-and-blood patient. She also controls the verbal communications of the mannequin. If someone from the team talks to the patient, the pilot (as long as the patient is not “unconscious”) will select a suitable response from a set of voice-samples in the computer. If the team feeds the patient oxygen through a mask, the pilot will manually raise the oxygen saturation. The reactions of the simulator is thus under the direct control of the pilot, and she therefore performs important work in keeping the fidelity of the mannequin’s reactions on a high level. As a first observation, the team did not have any problems with this set-up, and never complained (either in the simulations or in debriefings) that the reactions of the mannequin where “unrealistic” as a result of the pilot responding to the teams’ actions in a non-adequate way.

The Game Master is situated “on the floor” together with the other participants. They use her to clarify matters that are confused, especially those things pertaining to the interface of the
simulator or how to handle an unfamiliar procedure. She also plays a variety of roles in the simulation, both as laboratory personnel on the telephone, as well as the ER-nurse\textsuperscript{36} giving the team the briefing on the status of the patient. As might be suspected, she is quite important to this study, as it studies interactions in the simulation that can be summarized as “problematic” in the sense that they disrupt the flow of “regular medical practice”. These disruptions often arise from a problem in the interface of the simulator, some “regular” procedure that cannot be done or some reaction that is demonstrated as “out of the ordinary”. In such moments of trouble, participants often turn to the Game Master for clarifications on what can be done and what should be done next. Even though the Game Master performs a function that is foreign to the participants’ regular medical practice, they not confused over her presence and actions there, but instead use her as a clarifying resource when needed.

**Scenario**

The simulations studied all follow the same the layout. This consists of a briefing, introducing the simulator and the status of the patient, followed by the simulation proper, and a debriefing session. Two scenarios were played (each person participating in one of them) but, as mentioned, for the purposes of this study only one of these scenarios has been studied in the analysis.

**Briefing**

The sessions commence with a brief introduction to the simulator and the room in which it is set up. This involves the Game Master explaining some of the specificities of the simulator that the participants are required to know. It includes things such as which arm to give injections into, how to measure blood pressure and how and where to feel the mannequin’s pulse. Generally, the introduction focuses on the areas of the simulator that are expected to give the team problems, i.e. those that differs the most from their regular practice and where specific procedures or ways of interacting with the simulator are to be utilized. As an example, the pulse of the patient can be felt on the arm, throat and groin. In each case, a sensor has to be depressed at the appropriate place under the mannequin’s skin in order to start the pulse in that part of the body and let it be perceived. The way of depressing these sensors (how hard, in which place, etc.) differs both from each other and from the ways this is normally done on a living patient, and therefore the crew explains this beforehand.

\textsuperscript{36} ER = Emergency Room
This is followed by a few minutes in which the team familiarize themselves with the room, as it is considerably different from the rooms of their normal practice. Participants look around in closets, drawers and the like, in order to know where drugs and equipment was stored, as well as examining the mannequin and performing some of the procedures previously described by the crew as problematic, such as checking the mannequin’s pulse in various places.

The briefing then moves on to introducing the simulation. It is framed as one of intensive trauma care. The Game Master talks while the team listens and asks questions: a 30-year-old man has been injured in a car accident, where he has been hit on the right side. The Game Master, who at this point takes the role of an ER-nurse, claims that he’s been on the hospital for 45 minutes, where they have had the time to take a set of regular blood-tests as well as done a CT-scan\(^{37}\), although the results form this scan has not yet been delivered. The Game Master explains that the ambulance personnel has strapped him on the spine board\(^ {38} \) on which he is still placed, after being trapped in the car for some time before rescue workers were able to cut him loose. She also says that the patients name is Gunnar Persson, (which is also written on his ID-wristband issued to all patients). The patient, she says, is complaining from pain, especially on the left side. At the ER, he was given 1 mg of morphine, but no other injections. She also calls attention to the lowered oxygen-saturation, and says that they have tried but not been able to raise it any further. As the nurse/Game Master leaves the side of the patient, she grabs hold of the ER-type stylet\(^ {39} \), often saying that “I’ll leave you to it, I’ve got to run, yo’all know how busy we are down at the ER”.

**The simulation**

The main activity in the simulation room, playing the scenario, follows a regular pattern of events. The head nurse walks up to the patient and introduces herself, and continues to talk to the patient while checking his respiration. This is done mainly though looking at the patient-monitor, checking oxygen saturation in the blood as well as respiratory rate. The second nurse, responsible for blood-circulation, starts checking pulse and blood pressure. Most often, the

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37 CT = computer tomography, an x-ray technique for discovering internal damages.

38 A spine board is a specialized stretcher that keeps the neck and spine of the patient fixated.

39 A stylet is used for hooking up various sensors connected to the patient (measuring blood pressure, oxygen saturation etc) to the patient monitor.
patient's respiratory problems is (correctly) diagnosed as pneumothorax, which calls for a specialist intensive-care doctor to be summoned. This is left to one of the auxiliary nurses. They assist in fetching the tools necessary for the doctor to open the chest and insert a drainage-tube to remedy the punctured lung, and assist in bringing out certain drugs or instruments for the nurses and doctor. Morphine is administered to the patient for pain relief. Continuously, the team talks about what procedures and measures should be taken, in which anyone of the team, regardless of function, can participate in, giving suggestions for continued treatment and procedures.

After the team, together with the doctor, has relieved the patient of his most acute respiratory problems, they turn to further diagnostic work. This is assisted by blood tests taken during the first phase of the simulation (by one of the nurses), and by the arrival of the results of the CT-scan done prior to the onset of the simulation. The doctor and nurses systematically go through these, coming to the conclusion that the patient has a ruptured spleen and some unclear damage to his spinal column, as well as the aforementioned pneumothorax to the left lung. A series of calls are made during the simulation, to ensure that blood can be collected from the blood central (with is fetched from the adjacent room), and to receive results from the blood tests. In these instances, the Game Master plays the part of receiver of the calls. All the medical procedures initiated serve to stabilize the patient, raising oxygen saturation levels and normalizing circulation. This is in order for him to be taken to surgery where his spleen and spine can be operated. After the team has done one last examination, including a roll (involving the whole team rolling the patient to one side while the doctor checks his back and perineum, as well as removing the spine-board) the patient is cleared to go into surgery. At this time, the Game Master calls off the simulation with applause (together with the audience) and an exclamation of “well done everybody”.

**Debriefing**

After each session, the whole study group (the team as well as the onlookers) go together with the Game Master and the pilot gathered to a separate room for debriefing. On occasion, the doctor joins them, but more often than not he or she was not present. At this debriefing, those who had actually played the scenario are asked to give their comments on the events. Although they are the principal speakers, everyone present is free to speak their mind. Afterwards, the onlookers are also asked to give feedback on the simulation. Previously, they had been given instructions to keep a special eye on the colleagues form their own profession (the nurses were
asked to especially observe the behavior of the participating nurses, and vice versa for the assistant nurses).

The debriefing concludes with showing the recorded film from the simulation. At this time, the Game Master and the pilot leave in order to prepare for the next scenario. While watching the film, comments are continuously given by anyone who feels like it, and the atmosphere is friendly among the colleagues. Frequently, people wait for a particular event on the recordings that had been discussed previously in order to find out “what really happened”. This includes not just moments of medical or technical problems, but also specific expressions or actions that they classify as ”funny” or as ”errors”. While the film is scrutinized for “serious” problems of the simulation, those looking at the film are also busy at identifying events where someone dropped something, said something ”out of line” or where the whole team failed to, for example, take notice of the doctor giving a particular order. At these times, people are happy to crack jokes or make friendly yet sarcastic comments on each other’s behavior.

During all these sessions there is never any open animosity between anyone in the group. It is also notable that any feedback that could be classified as negative, for example pointing out that someone failed to operated equipment properly or follow the ”official” protocol for doing thing (for example the correct ratio of compressions to aspirations in CPR) is always mitigated as to not give direct criticism to a particular person. Instead, criticism is directed at the group as a whole. Notable in this respect was talk of a specific piece of equipment (the thorax drainage) that was often operated incorrectly. At these times, even though a single person (an assistant nurse) was responsible for the proper set-up and functioning of the apparatus, the pilot or game master brought the drainage into the debriefing room and showed everyone how to operate it correctly.
Results and preliminary analysis

As stated, this study tries to explicate some features of participants’ actions in which they accountably demonstrate (and reflexively “make up”) the simulation as a simulation. This is done in and through the participants’ activities of demonstrating that some activity is “transgressive” and “in breach” of the local order of the simulation. These features can be summarized as “techniques” or “methods” for shifting attention (conversational relevancies or orientations) to and from the “simulation as simulation”. These techniques are used by participants at different point throughout the sessions, in face of the situational contingencies that arise, and consist of the various uses of local (and contingent) semiotic resources. Such uses are collected under various headings, under which are demonstrated analyses of relevant episodes. All these episodes show possible or actual threats to the conversational topic and activity of “doing what we are here to do”.

The results from this study consists in explications of how the simulation is initiated and ended, and how the understanding of “what we are here to do” observably and accountably changes at these points. The results are analyses of how, once “intensive care medicine in” has been established as the relevant topic, comes under “threat” from various sources and how participants makes sure that they keep doing “what they came there to do”. At different times, however, some other topic, such as making fun of the patient, colleagues or the hospital is introduced, which leads to remedial activities in order to restore the simulation to its “proper” track. The results tries to show how “what we are here to do” is something the participants actively orient to, and how those failing to do this are liable to be sanctioned. The analysis proceeds under these thematic headings:

- Initiating the simulation-session on the proper topic.
- Making sure the team is doing “what we are here to do”
- Minimizing topic-switches in face of glitches.
- Failed attempts to minimize topic switches in face of glitches.
- Overplay as a breach of the simulation.
- Establishing the ending of the simulation.
These results collectively makes up a sort of outline of the simulation and its relation to activities outside it, i.e. how doing the simulation in a proper way (“what we are here to do”) is an accountable matter in relation to time, space, roles, technology and intensive care medicine. The participants at that time and for themselves establish these limits of these simulations. The results are explicative accounts of the simulation as a local accountable order.

Under each heading one episode is explicated in detail, and a narrative excerpt of the interaction in that episode is provided. This episode is the main focus of the analysis for each thematic heading. These are in some cases supported by accounts of other episodes where the same kind of phenomenon is demonstrated. These auxiliary excerpts are either standard CA-transcripts or written in the same narrative style as the main excerpts. All excerpts are referenced with the number of the page in which they can be found. The following, empirical, section of this thesis is a rather loose collection of episodes, where their common trait is that they in one way or another distinguish the activity of doing a “proper” simulation from doing other things.
Initiating the simulation on the proper topic

Keeping in line with the theoretical and methodological commitments of ethnomethodology in this study, a good point of departure for this kind of analysis will be to observe how the simulation gets going as a distinct activity in the first place. If the simulation is to be treated an interactional activity, there must also be interactional devices for members to distinguish the activity of simulating from other types of activities. Somehow, they must utilize semiotic resources in order to demonstrate that, from this point and onwards, the simulation has begun. This will also mean that the simulation’s normative requirements (upholding the simulation as an interactive illusion) will be available as resources for the participants. They might from now on instigate sanctions against those who are not seen to comply with appropriate behavior in the simulation, and that techniques must be employed in order for the participants to continuously keep in line with “what we are here to do”, and that breaks from this will be accountable as such.

In this episode the Game Master, at this point taking the role of an ER-nurse handing over responsibility of the patient to the intensive-care unit, gives participants a briefing of the scenario. She has just explained how much “ringer’s solution” has been given to the patient, which needles are functioning, what drugs have been administered as well as other procedures done. In this, the team is largely passive, listening to the Game Master, asking few questions etc. Once the simulation has started they are expected to do the work needed.

As the Game Master’s introduction of the scenario is the first thing that happens after the team has been given some time to examine the room and its facilities, the participants are facing the problem of engaging the simulator in a “proper” way and at a “proper” time. This breaks down into two interactional problems:

- How to concertedly establish the briefing and introduction of the simulation and scenario as having ended, and at the same time the simulation “proper” as having started?

- How to do this whilst keeping in line with “what we came here to do”, whilst still keeping the conversation on the topic of medical matters?

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40 Ringer’s solution is a electrolytically balanced solution for large-volume fluid replacement.
These problems are not distinct in any practical sense, but intertwined and solved simultaneously. They are listed like this for the sake of clarity in the analysis, and they are not temporarily or spatially separated from each other. The episode proceeds as follows:

As the Game master / ER-nurse hands over the scrapbook (pic. 1), she asks: “are you wondering about something?” Nurse 1 answers this with “nah, it’s cool”. The Game Master answers Nurse 1 with “oh, that’s good”, just as everyone starts laughing or at least smiling, first the audience soon followed by Nurse 1 and the rest of the team and crew. The Game Master continues, right about when the laughter dies off: “then I’ll take this and leave ‘cause we got so much to do at ER” (pic. 2). This is affirmed by Nurse 1 by saying “okay”, and in turn reciprocated by the Game Master humming in reply.
She collects the stylet, turns around and leaves. Nurse 1 then steps towards the mannequin (pic. 3), and turning back towards his fellow nurse he says "you with me here anyway Anna?" She in turn interrupts him with "I'm with you now see", following him in approaching the bed. Nurse 1 then turns to the mannequin (pic. 4) saying "mm, talk to him a bit ... are you wake Gunnar?", as he bends down above the mannequins face. Nurse accompanies him, and the auxiliary nurses approaches the bed in either side of it.

**Ending the briefing and starting the simulation**

In this case the game master, as she is leaning forward and handing over a scrapbook to Nurse 1, lowers and changes her tone of voice, produces a faint smile whilst she asks "are you wondering about anything". This question is heard as being not only on behalf of the ER-nurse, but also asked in her role as instructor (Game Master) in the simulation. This is established as a fact in the subsequent answer provided by Nurse 1, who as he is receiving the documents says: "nah it's cool". Answering like this reveals that either way there are no questions or queries. At this point, the audience starts laughing⁴¹, while the pilot smiles behind her screen (pic. 1). Nurse 1, who produced what they are laughing at, does not initiate the laughter himself but he falls in with the

⁴¹ None of the audience is visible in the picture. However, several different voices can be heard, and I take this as a "general" laughter.
laughter after a very short while. The Game Master smiles briefly and immediately says: “oh, that’s good”.

By orienting herself towards Nurse 1, both in gaze, posture and action (handing over the scrapbook) the Game Master shows that she projects an answer from him, and that this will be an answer on behalf of the whole group. The design of the utterance is not “do you have any questions”, directed at Nurse 1 only, but the more ambiguous “are you wondering about anything?” Although syntactic markers for address of the utterance are missing, the nonverbal features of its production provides for a “proper” answerer, at as well as making the answer understandable as a collective answer. Also, Nurse 1 has beforehand agreed to take the role of “responsible for respiration”, a nurse in the team that handles not only breathing but also primary communication with the patient as well as with doctors present. In the intensive care team, he or she is designated to lead nurses and auxiliary nurses.

In her question, the Game Master, as she is talking in her dual roles at this point, provides a possibility not only to ask questions regarding the status of the patient (to the Game Master as ER-nurse) but also to query about the simulation itself (to the Game Master as crew of the simulation). Answering “nah, it’s cool” to this question is a “nonchalant” conversational move on the part of Nurse 1. It is produced with a “relaxed”, colloquial tone, and it is both produced and replied as a laughable matter. It is done as a joke in the way that to a seriously asked question, Nurse 1 provides an “all too relaxed” answer. This is not expected as on one hand participants know they will be facing some kind of challenge, and on the other, they have not worked with this simulator before and cannot be expected to understand how to use it properly.

This whole sequence serves to end the current activity in the conversation, which is the briefing-session of the simulation. After the Game Master has posed her question, it is established as an accountable fact that the simulation proper should get started and that it is the intensive care team that has the initiative of action in this setting. The laughing in this case is an insertion sequence (cf. Sacks, 1992, vol. II, p. 528) that is intertwined with the Game Master asserting Nurse 1’s exclamation (“oh, that’s good”) and closing this topic by saying that she is leaving (“then I’ll take this and leave ‘cause we got so much to do at ER”). The briefing session is closed by both Nurse

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42 Swedish differentiates between pronouns of second person singular and plural
1 and the Game Master collaboratively ("okay" and "aah(b)") establishing the proper reception of the previous talk (what is called proof procedure in CA’s terms).

It is the team who must initiate the next activity. At the same time that the Game Master is leaving the bed, Nurse 1 takes a step forward (pic. 3). He has been established as the “main speaker” in the preceding conversation, and he is so continuingly. As he moves forward, he turns halfway around, asking Nurse 2 “are you with me here then Anna”, and she replies before he has finished his utterance with “I’m with you now see”45. Such a completion of an adjacency pair before the completion of the first pair-part shows a careful monitoring and projections of what are relevant issues in the interaction beforehand (Sacks et al., 1974).

This is initiating the next activity as “what we are here to do”. Nurse 1 and 2 concertedly display that they are about to do a new activity that distinguishes itself from the one preceding it. The orientation to this distinction can be heard in and as Nurse 1 and 2’s design of their opening utterances. They are both finishing their utterances with “ijaff” and “hurrudi” (the first translatable as a truncated “anyway” and the second being roughly “you see”). Both mark an initiation of an activity, and both mark a distance between the preceding and the upcoming activity. Ending his utterance with “anyway” (“ijaff”) shows that something has been out of the ordinary in previous turns, (the joking and laughter) and that its time to get down to the business they came to do. Nurse 2 ending her utterance in “you see” (“hurrudi”) also shows attentiveness to Nurse 2’s proposition that something is out of the ordinary, and that whatever that was it is over now.

At this point the team demonstrates that the simulation is underway. Nurse 1’s question can be seen as an opening-sequence of the next activity, with Nurse 2 confirming that it has in fact been initiated. This is not done only verbally. Through corporeal positioning in the room, all participants show new alignments towards this situation. Whereas before the Game Master was standing next to the bed and the team standing a bit further away from it, a new orientation is manifest in that the nurses approach the patient when at the same time the Game Master turns her back to the patient and leaves. All this can be considered as the way in which the participants accountably manifest that the preceding activity of briefing and introducing the simulation has

45 Nurse 1 is the “head nurse” of the team (responsible for respiration), which is made manifest for example in how the Game Master addresses him, gives him the scrap-book, and how he takes himself to be the obvious recipient of the Game Master’s question, shown in that he answers and that no-one else attempts to do so. Again, this is a display of how members do the institutional order of their work.
ceased, and that the next activity of the team doing the simulation, what they came to do, has initiated. This activity is done through doing the “proper” medical procedures, taking up “proper” places in the room and talking in “proper” ways. Both Nurse 1 and 2 take up their designated positions, and continue their work of intensive care medicine in the simulator through following the protocol\textsuperscript{44} for how a patient is monitored, diagnosed and stabilized.

**Keeping two distinct activities on the same topic**

The team came to do medical work in a simulator. In switching activities, they must also work to keep the conversation on the topic of medical work, as this is accountably the “proper” topic of work in this intensive care simulation. This must be done in face of possible “breaks” or “glitches” in the simulation, where their work might reveal itself as being not “real enough”. In the current episode, participants face two possible glitches, and instigate techniques for preventing the topic of their work to become anything else than the medical work that they are there to do.

The first of these threats come from Nurse 1’s laughter-producing utterance (“nah, it’s cool”). Both the utterance and the way it is answered is considered a threat to medical topics in the simulator, as “nonchalant” utterances and laughing are not considered to be what the team ought to do. The joking and laughter might also expand into further turns, and in order for this not to happen, interactional work has do be initiated.

This is shown in how the Game Master tries to keep the conversation on medical topics. She does this through immediately as the laughter erupts (even though she smiles briefly) saying “oh, that’s good”, and then continuing talking as ER-nurse (“then I’ll just take my stuff...”). The first part of this utterance acknowledges that the team does not have any further questions regarding either the ER medicine or the simulator itself. By keeping the second part of her utterance squarely on medical-institutional matters, talking of the heavy workload in the ER, she provides a way for the topic of the next activity (in the following turns of the conversation) to continue on medical topics. The closing sequence has been completed, and the topic of medicine is established as the relevant one for the next speaker. This is done through the Game Master closing the briefing in institutionally “regular” ways, of playing the part of a regular ER-nurse: collecting her things and

\textsuperscript{44} Protocol is not to be taken as a mental or social “script” or “schemata”. Instead, it is, in this case, the real and recurrent (accountable) proper procedures for doing intensive care medicine.
complaining over the work load in the ER-department. At the same time, it is clear that the Game Master is not going to be the one introducing the next topic of the conversation, as she is saying that she is leaving and also does so. It is accountably the business of the team to proceed on medical topic in their continuing activities in the simulator.

As the briefing is closed and Nurse 1 and 2 concertedly establish a new activity as started, they must keep their actions to medical work. They must establish as a fact that medical work can be done in a regular and proper fashion in this situation as well (despite whatever irregularities they may encounter).

That the medical work they came to do should be done in a fashion that is as “regular” as possible is shown in how Nurse 1 approaches the doll/patient. That the patient in this case (as in any other) should be taken seriously as a patient is also displayed when Nurse 1 says “Mm (.) talk to him a bit” (pic. 4), and then asks the patient if he is awake. To frame the question in the way he does makes relevant that Nurse 1 believes that there is a possibility of communication verbally with the doll/patient, and therefore that asking him in a normal fashion if he is awake is indeed the right way to proceed, even in this case. To ask the patient if he is awake is a standard procedure for checking levels of consciousness and communicativeness in a patient, and doing this is an inherent way of displaying that “we are going to treat this patient as much as any patient as possible”. At the same time it demonstrates that, despite the fact that this is a rubber and metal mannequin and not a flesh and blood patient, Nurse 1 will treat him as a “real” patient. It is also relevant to note that Nurse 1 finds it necessary to point out that he is going to talk to the patient, despite it being regular medical procedure to do so. This might of course also be perfectly regular, and medical personnel frequently talk out aloud (as is seen in all of the simulation-sessions studied) in order for the rest of the team to be able to keep track of what they are doing and about to do. In this case it also serves to dissolve some of the ambiguity in how to treat the patient-mannequin.

At this point, the team has established that not only are they going to “do what they came to do”, but also that this involves treating the simulation “as real as possible”, and therefore that regular medical procedures can be conducted. That the patient does not respond verbally is later on (in this case and often in others) taken as a sign of unconsciousness, with whatever implications that might have for intensive care medicine. It is not taken as a sign of a badly designed simulator or a faulty mannequin, but as something to be taken into medical consideration.
Summarizing: Getting the simulation going as a distinct activity involves accountably closing the preceding activity and initiating the simulation itself. These two activities can be distinguished in the participants' orientations to whom is doing the active work in each activity: first the Game Master and then the team. At the same time as a new activity is initiated, the topic has to be kept to the medical matters of the briefing, even in threats of glitches in the simulation due to joking and laughing on one hand and not treating the mannequin as a “real” patient on the other. In the first case, these problems are resolved through the Game Master closing the briefing on a medical-institutional topic, and in the second case through initiating normal, regular and proper medical procedures.
Making sure the team is doing ”what we are here to do”

This event occurs right at the onset of the simulation. The mannequin says “I can’t breathe” and starts coughing. Nurse 2 asks him “what are you saying”, but does not wait for an answer and immediately turns to the pilot sitting behind her, asking “what should I say” (pic. 1). When the pilot does not answer, Nurse 2 starts smiling at her and she turns back down towards the patient. Next, she looks up saying to the others “can you hear what he’s saying”. Nurse 1, standing at the head-end of the bed, answers her in saying that “you’re only circulation” (circulation said in English), while she gestures with her hands in circles above the patient’s head (pic. 2). Nurse 2 looks down on the patient and then up to Nurse 1 once more, leans back somewhat and smiles an oblique smile, saying “but I’ve talked to him (. then he has circulation”, opening up her arms showing her palms (pic. 3). At the brief pause in Nurse 2’s utterance, where she initiates her gesture,
Nurse 1 breaks into a hesitant laugh, going from saying “aa” to laughing, making it “A: ha(h (b (b)((h))”, finishing off with “yeah, alright”. Nurse 2 looks down on the patient, says “okay then” and moves towards the foot end of the bed (pic. 4). At this time, a discussion erupts regarding the placement of a certain piece of equipment; the doll starts coughing heavily and people go about their respective procedures.

In this episode the communications of the mannequin poses two problems for participants: first of determining what it is saying\(^{45}\) and second in what way they are supposed to understand this communication and how to respond. The first of these problems is addressed by Nurse 2, who upon hearing the patient saying something asks him for clarification (“what are you saying?”). It can be seen that she understands that the patient will not give any clarifying response, as she immediately turns to the pilot, pic 1, addressing the second problem of how to communicate with the doll in the fist place.

The communicative status (if communication is possible and what is being communicated) of the patient is a powerful indicator of the level of his or her consciousness in intensive care medicine. This is in turn a resource utilized in structuring for example nurses’ work in anesthetics (Hindmarsch & Pilnick, 2002). Secondly, if and how the patient communicates in the simulation is a resource for the team in determining how to understand the simulation itself. This can also be found in other sessions than the one analyzed here: in those cases where the doll speaks English (16 out of 20 filmed sessions) this is often made into a point of joking, ridicule or confusion (i.e. made up to be a “glitch” in the simulation). It is important to note that this changes over time in a single session. Sometimes, particularly in the beginning of session, the fact

\(^{45}\) As the scenario, amongst other things, involves training how to take care of a respiratory failure, the samples played through the doll often involve a lot of “hissing” and coughing, sometimes making them quite inaudible.
that the mannequin talks will itself become a topic of the participants’ work (i.e. the team is surprised to find that the mannequin can talk). At other times (later on in the sessions) it is treated as a symptom of some medical condition (such as being in pain) and is taken into consideration as a way of diagnosing the patient, and is not something that will interrupt the simulation.

Evidently, Nurse 2 does not wait for a proper response from the doll, but instead asks the pilot, not for what the doll was saying, but for what she herself should say. Once again, she immediately observes that she will not get any help as to how to take (understand) the mannequin’s talk, as the Pilot does not respond verbally to her inquiry. Instead she quietly smiles back at her. Not answering a question (failing to provide the second pair-part of an adjacency pair as CA would say) is a noticeable (and accountable) action. The answer to the question is noticeably absent (Sacks et al., 1974). It is blatantly obvious that to Nurse 2 the question has not been asked to the right person, evident in that the Pilot just smiles at her and in that she turns around to ask her team-mates if they have heard what the patient is saying. This is a way for the pilot to demonstrate and make accountable a limit of the simulation. Asking the crew a direct question is here taken as something that goes beyond what the team are supposed to do. This outlines one locally induced norm in the simulation, a demarcation that circumscribes the simulation in relation to the practices and institutions outside it, and is a relevant and oriented-to feature of the simulation at this point: talking to the crew is not “what we are here to do”.

The next action on the part of the Pilot also reveals Nurse 2’s question as an out-of-order action, because she turns to the audience to her right, still smiling. The one visible member of the audience smiles back at her. Also, not in view but hearable, someone is giving a short laugh at this point. Again, by turning to the audience whilst smiling towards them and with them laughing, she is visibly orienting to them as also being parties “outside” the simulation, where it is not improper to joke, laugh or discuss whatever happens around the simulator. This is frequent in the studied sessions. At many times, the team would stop laughing before the audience would.

Not answering Nurse 2’s question and instead laughing at it is of course an indicator to Nurse 2 (as well as to others present) that in this case it was not an appropriate question. The “outline” or “borders” of the simulation that this study tries to explicate can be understood as a moral order. That is, instances of crossing those borders will elicit moral sanctions. In turn, those moral sanctions will be intrinsic to the interaction within the simulation. Two such sanctioning actions are present here. First is the fact of not answering a direct question, second is turning to
onlookers and laughing about it\textsuperscript{46}.

Avoiding the question is akin to saying that it is not appropriate to answer it at this point, for whatever reason. Here the Pilot demonstrates that it is funny that the question is posed in the first place. This can give the participants a sense of what the right courses of action in the simulation are, namely that problems in and with the simulator should be resolved with as little “outside” involvement as possible. This is not evident from the onset of this session. Although the participants have been briefed on the functioning of the simulator just a few minutes prior, and told to “do what they usually do”, such instructions does not make it obvious just what actions are possible and proper in every instance\textsuperscript{47}. As a formulation of a rule, “do what you usually do” is not something that determines or structures the interaction as a whole, but should be seen in its own conversational context, as a “substantial conversational move” (Lynch, 1993, pp. 188 - 189). Not answering nurse 2’s question functions as a reiteration of that rule, as a formulation in so many words that reflexively shapes the rest of the interaction. It demonstrates to the participants that this part of the conversation should be understood as outside the frame of “what we usually do”, and that similar instances can be treated in the same manner. It is thus an example of a local pedagogy: it tells the participants something about what to do and what to not do.

It is noticeable from the studied session that formulating a rule such as “do what you usually do” is not something that once and for all determines the rest of the simulation. Just a little less than a minute later, in the same session as above, Auxiliary Nurse 1 asks the Game Master for extra EKG-electrodes, a question that she answers without any sanctioning, contrary to the previous excerpt. In this case, asking the crew for help is not done until other options are exhausted. Auxiliary Nurse 1 is first looking around for the electrodes herself and then asking the others in the team for them before she asks the Game Master. Here, the question is answered in a “regular” way, and it is not taken as something “funny” or “laughable”. Using the crew to clarify

\textsuperscript{46} It's important to note that sanctioning behavior does not entail “bullying” or “making fun of someone”. Such an interpretation of interaction would have to be external to the comprehensions of the situation demonstrated by the participants themselves.

\textsuperscript{47} Such of formulation of a rule for the simulation does not make it immediately obvious just how the rule should be used. This could be compared to Wittgenstein's discussion on following rules in Philosophical Investigations, (1953, §§ 143 - 242) and to Lynch's discussion of his importance for ethnomethodology (Lynch, 1993, pp. 159 – 201).
issues of confusion regarding how to handle and understand the simulation is not outlawed right out, but something to be used as a final measure.

In turning towards her teammates, Nurse 2 does get a reply when Nurse 1 says that “you're just circulation”, pic 2, produced with an iconic gesturing of her hands circling about each other above the patient’s head as she starts to smile. What does this tell the participants, and how can this inform analysis? Nurse 2 clearly takes this as critique and rebuts Nurse 1 through saying “but I’ve talk’d to him (.) then he’s got circulation”. This is accomplished as she starts to smile, at the same time as Nurse 1’s smile is transformed into a hesitant laugh, followed up with “ok, alright”. The criticism implied in Nurse 1’s initial answer is that the nurses have different areas of responsibility, where Nurse 1 is in charge of respiration and communication with the patient and doctor, and where Nurse 2 is in charge of circulation, checking blood pressure etc. “You’re only circulation” as a response to the question of what the patient is saying thereby implies that Nurse 2 is doing things which are not her primary responsibility to do, and that she should concentrate on her allotted areas first and foremost.

Nurse 1’s comment to Nurse 2 is done in a hesitating humorous way, which here serves as a mitigating technique for downplaying the possible negative effects of giving criticism. First, there is her use of English instead of Swedish in establishing what Nurse 2 is supposed to do, and second is her smile accompanying her utterance. Showing hesitancy makes it possible for Nurse 1 to transform her critique into a “laughable matter” as Nurse2 starts dismissing the criticisms directed at her.

Nurse 2 does indeed take Nurse 1’s utterance as critique, evident in her acknowledgement of that her responsibilities does in fact include the circulation of the patient. This is done through the invocation of a “simple” medical fact: if the patient speaks, it has some functioning in his or her circulatory systems. If circulation ceases, the patient becomes unconscious within seconds. Here, Nurse 2 is formulating her prior action of talking to the doll as a defense against criticisms of priorities in her work. Interestingly, Nurse 2 produces her defense in two parts. First through saying “but I’ve talk’d to him”, done as she steps back from the bed. Second, through gesturing...
with her hands (showing a palms upwards, underarms outwards motion, pic 3), smiling and nodding her head slightly, saying “then he's got circulation”.

This utterance “reverses” the critique directed at Nurse 2 by showing the relation of communication and circulation to be a simple fact of medicine, which should be known by anyone working in this profession. That this is accountably so is evident in Nurse 2's shift in posture, gesturing with her arms and nodding her head. These actions all serve to point out her argument as simple, obvious and regular sense making practices in intensive care medicine. Nurse 2 leaves a small pause in her utterance, a transition relevant point (Sacks et al., 1974) wherein Nurse 1 might display some understanding of Nurse 2’s utterance. Nurse 1 fills this small gap with quite a “careful” or “hesitant” laughter, continued as Nurse 2 completes her utterance. After the short pause, Nurse 1 is continually acknowledging Nurse 2's points through her hesitant laughter that serves to further mitigate the previous critique, as it has now been made clear that it was unfounded.

The second part, where Nurse 2 invokes a simple fact of medicine is also done in a “friendly” tone, in order to not give harsh, direct criticism at fellow colleagues. In particular, smiling and gesturing in this manner is also a mitigating technique for making sure that her defense is delivered in a “friendly” way. Nurse 1 turns her hesitant laughter into an acceptance and acknowledges Nurse 2’s point by saying “okay, alright”.

Displayed in this interaction of speech, gaze and gestures is a technique for avoiding a possible glitch in the simulation, in that Nurse 2 is instructing Nurse 1 on how to understand the simulator, how should be taken. Nurse 2 produces her utterances as to show one “proper” way of doing and understanding this part of the simulation. It does not afford any more talk on the topic of either the different responsibilities of the nurses, and not any more on the topic of what inferences can be drawn from the talk of the mannequin. This is further accentuated when Nurse 2 turns to other tasks in the simulation, saying “okay then”, which serves to close the preceding topic and end the troublesome event. Demonstrating that a “simple” fact of medicine is relevant also in this case of a simulated patient is one of the methods whereby the participants can make sure that they all understand the simulation in the “proper” way and get back to doing the simulation as well as they can do it.

The previous example shows that the fidelity of the mannequin is an accountable fact of the simulation, and that this fact can be used by participants when negotiating what courses of actions are possible in the simulation. The negotiation and variability of the participants’
accounts of the simulation is a ubiquitous phenomenon in all the sessions studied. It can involve any aspect of the situation, such as its involved personnel, mannequin, hospital and material. The next (p. 81) is an example of how the fidelity of the simulation becomes problematic in relation to its placement within the workings of the hospital, where a perfectly normal procedure becomes questionable because it is done in a simulation.

Summarizing: At two times in this excerpt is there a possibility of an obvious glitch in the simulation that might turn into a next topic of the conversation, thus taking it away from the intensive care medicine that participants accountably are there to do. These trouble-times show two ways for participants of demonstrating the “outline” of the simulation. The first is the pilot’s refusal to answer Nurse 2’s question, thus making it obvious that the team is not supposed to ask questions to the crew without first trying to solve the problem in the team first. The second is Nurse 2’s usage of a simple and regular fact of medicine when she is demonstrating that she is doing what she is supposed to do. She is thereby demonstrating that the fidelity of the simulator in this respect is adequate, making sure that criticism directed at her can be countered. Indeed, she is showing that the only critique that is warranted in this situation is for not understanding the adequacy of the fidelity of the simulator.
"Does he have any other injuries besides thorax?" the doctor asks Nurse 1, standing at the patient's head. After some hesitation, Nurse 2, standing by the table answers "we don't know". The Doctor looks at Nurse 2 and says "we don't know. okay" after which he turns back to face the patient and Nurse 1 (pic. 1). Nurse 2, starting to prepare something at the table, says "he's been to trauma-CT" and once again the doctor looks at her "he has been to trauma-CT" This is asserted by both nurses, and the Doctors asks "we've got a reply? No?" and Nurse 2 in a casual voice says "no, haven't you been there?". While she says this, the Doctor smiles briefly (pic. 2). As both someone from the audience and Nurse 1 starts laughing he too cracks up and turns away from Nurse 2 and looks back at the audience (pic. 3).
He replies: "no, that's a good question, I've just started my shift, so no". Nurse 2 comments this with "oh yeah". Meanwhile, Nurse 1 has been looking at the monitor, and at this point she turns to Aux. Nurse 1 and asks her "you never got the blood pressure?", shaking her head (pic. 4). Aux Nurse 1 in turn asks for a clarification, and they start talking about if the blood pressure has been measured and what it was.

In the simulation, there are moments where the simulation threatens to break down, to display "glitches", perceived separations of simulans and simulandum. It is an interactionally normative requirement of the situation to keep these as congruent as possible. In the event that a glitch is made relevant in the interaction, the participants will have to work to repair that glitch and return to the main topic of the simulation.

The excerpt presented on the previous page is an illustration of one such occasion, where one of the participants ask an accountably "illusion-threatening" question, and a demonstration of a technique for avoiding this glitch to become a topic in further turns of the interaction. The device used here is one of "acting" or "playing the correct part", i.e. coming up with an institutionally relevant answer in order to remain on topic. Here, the acting passes over as "successful", in that it is not marked as "overacting" or fails to account for a "proper" answer to the illusion-threatening question (compare this with the "overacting" in the excerpt on page 94).

In the present scenario, the doctor has just arrived and is given a briefing by the team, in particular Nurse 1 who is the head nurse in this case and thereby primarily responsible for the communication with doctor and patient. The “main” injury to the left thorax-area of the patient has been addressed, and the doctor asks if there are any other known injuries: "does he have any other injuries besides (.) thorax?". It is Nurse 2 who replies instead of Nurse 1 (the addressee of the doctor's question) with "we don't know that" which in turn is answered in a similar fashion by the doctor ("we don't know that, alright"), the brief overlap indicating that not only does the doctor understand this in the same way as Nurse 2 does, but also that this was the suspected (and expected) answer.

The doctor answers Nurse 2's next turn in a similar fashion, with a replica of the question (Nurse
2: “he’s been to trauma-CT” followed by the Doctor: “he’s been to trauma-CT”). After confirmations by both Nurse 1 and Aux. Nurse 1, he says “have we got a reply? (. . no” as he orients himself towards Nurse 2. All the while, she has been standing at a preparation table, mostly looking down, thus not acknowledging the doctor’s look with one of her own. At one point she turns around, although she is probably looking at the monitor at this point. To orient yourself towards the one you are talking is routinely done when people are trying to concert their activities, such as in conversation (Goodwin, 2000). The doctor displays bodily orientation when he looks over his shoulder to face Nurse 2 each time she is saying something, a gesture that she in turn does no reciprocate.

Nurse 2 replies with “no, haven’t you been there?” This is immediately observed as a joke, because Nurse 1 starts laughing before this utterance has concluded. All through the conversation between Nurse 2 and the Doctor, Nurse 1 is observably monitoring the exchange, at one point trying to take the conversational floor (see Sacks et al., 1974, for further reading on turn taking in conversation) but failing to do so at the finish of Nurse 2’s utterance. After this, she is trying to answer the Doctor’s question, but it is Nurse 2’s answer the Doctor gives status of the “proper answer”.

The doctor also demonstrates an ambiguity with how to take Nurse 2’s last utterance: he can be seen to produce a faint and very quick smile as Nurse 2 starts to answer his question. As the utterance nears completion, the doctor transforms his smile into a silent laugh. This is also done before a recognizable completion point has been reached in Nurse 2’s utterance, both visibly recognizing this as “something to be laughed at”.

That this is a “laughable matter” is shown in how Nurse 2 makes a “glitch” in the fit between the simulation and the practice being simulated relevant in the interaction. Normal routines would imply that a doctor on duty first goes to the CT-scan to look at X-ray pictures, information that can be utilized in the further work of diagnosing the patient. Nurse 2 is thus demonstrably doing a critique of the doctor’s work: she is implying that he has not acted according to protocol. It is also heard as making aspects of the situation as artificial practice relevant. Not only did the doctor not comply with the normal routines of the intensive care unit, there was a structural

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49 Trauma-CT is the department at the hospital responsible for doing emergency CT-scans (computer tomography) of trauma-patients.
impossibility in the situation that prevented him from doing so (because it is a simulation that
does not incorporate anything “outside” the room). By showing “pretended surprise” Nurse 2
has made relevant the fact that she knows, and she knows everybody else knows, that this is not
“what we usually do”.

Nurse 2 is pinpointing a structural glitch between simulans and simulandum. It is not that
someone is not playing his or her part correctly or breaching the simulation through
misunderstanding the situation. To continue from this point on (as if nothing had happened)
would have been in perfectly good order, and the CT-scan pictures are delivered by the Game
Master a while later. It is not the fact that the Doctor has not been at the CT-scanning, but that
someone makes this an oriented-to fact in the conversation that constitutes the transgressional
move in the simulation. To point this out is transgressional of the boundaries of the local order
of the simulation, shown in how the rest of the participants and audience starts to laugh about
this.

What has been called for with Nurse 2’s remark? First of all, someone from either the audience
or the participating team can be hard to start laughing. It is just a short, “chough-like laugh” but
Nurse 1 starts smiling as she is observing Nurse 2. After the “preliminary” laugh, she starts
laughing outright, turning towards the doctor as she does so. Nurse 1 is thereby demonstrably
expecting an answer of some sort from the Doctor. This in turn means that she is manifesting
the probable continuation of this topic into further turns through visual orientation.

The doctor, meanwhile, does not observe this, as he is turned towards the audience. Turning
towards the audience, he bends his upper body only slightly, in a short twitch. Once again we
have here the crew of the simulation (including the doctor), the people responsible for setting up
and running the scenario, not wanting to “play along” in the exposure of the simulation as
simulation. This time, the doctor turns around to face the audience as his bluff is called. While
this study is not trying to make inferences regarding his mental state, turning around does have
the effect of not showing himself laughing or smiling to the rest of the participants. He does
start to laugh together with Nurse 2, but he turns around to face the audience, where someone

50 It is a gesture done when things have not turned out the way you hoped them to. It is a jokingly, self-conscious
and all-too-obvious gesture. It is something that you would do when your friend did not fall for your April fools gag.

51 See page 95 for another example of the crew hiding amusement from view.
starts laughing as well, just as Nurse 2 stops her laughter. In this way, it might seem as if the audience as well as Nurse 2 are expecting an answer from the Doctor, and that he is made the “object” of laughter in this episode.

The doctor does produce an answer. The question asked was provoking, as it challenges both the doctor and the simulation itself. Still, it is also demonstrably a successful joke. Some sort of “defense” has to be produced, an utterance accountably recognizable as an “excuse” on the doctors part. The doctor says “that was a good question, I’ve just started my shift so no”. The first part of his answer acclaims that Nurse 2’s question was legitimate, that his own lack of information is questionable and that the preferred answer is one that lies within the institutional limitations of the hospital. Nurse 2 did not simply reveal the simulation as a phony; instead she utilized the semiotic resources afforded by the situation as one of intensive care medicine in order to expose a blatant glitch in the simulation. This glitch lies not in the fact that the doctor does not have the required information, but in that someone has made this an interactionally relevant property of the conversation. In many other sessions, the simulation continues on from this point onwards, and the CT-scan pictures eventually arrive, delivered by the Game Master. The simulation is therefore not structured once and for all, through its technical properties or those of its participants, but rather a fluid situation, which is reflexively and locally shaped by its interactants.

As Nurse 2 has made relevant the organizational features of the hospital in which they work, this affords an answer that is produced on the same topic, using the same semiotic resources. The doctor therefore refers to the institutional properties of the intensive care-ward in his answer; there would have been no time to first go to the CAT-scanner before seeing the patient at the intensive care ward if you had just started your shift. The excuse is produced as to be an organizationally possible excuse in the simulandum, and should thus be taken as a proper excuse in this (simulated) setting as well.

It can be seen here how the simulation is not a hermetically separate activity from the one it simulates. In (Rystedt, 2002) we see how participants take into account experiences from actual practice in providing for diagnosis and drug-administration in a screen-based simulation. In the type of simulation studied here, at most times, the simulans and simulandum are so congruent that it is seldom relevant to claim each procedure or line of reasoning as something imported from “outside” the situation. Each action and procedure is in no interactionally relevant way different from what it usually is unless it is interactionally marked as such. To refer to the
institutional organization and surroundings of the simulation might, instead of being a way of authenticating reasoning and actions (such as in Rystedt, 2002) be a way of exposing glitches in the “fit” between simulans and simulandum.

The doctor’s answer serves to give an explanation of his current lack of information in an institutionally relevant way, not exposing the situation as a simulation any more than has already been done. By giving an excuse that is “real”, “objective”, “proper” “probable” and all the rest the doctor makes sure that this episode is minimized in terms of number of turns in which it goes on.

Meanwhile, Nurse 1 has stood turned around, looking at the monitor. In formal analytical accounts of medical simulations this is often said to be perceived as the most “real” part of a high fidelity simulation (Dieckmann, et al., 2003). In these simulations it is also, apart from being a diagnostic instrument, a tool for “repairing” those situations where the fidelity of the simulation has been questioned. In a situation such as the present one, the monitor provides an “objective” representation of the patient’s status. When Nurse 1 turns back towards the rest of the participants, she asks Auxiliary Nurse 1 “didn’t you get any blood pressure?” She makes the “objective” features of their proper work the next topic of the conversation, and medical procedures of intensive work becomes the oriented-to feature of the further interaction. By talking about the patient, medical procedures and diagnostic work as “objective”, she strives to bring the conversation back on a “proper” track.

In another session the same phenomena can be observed. In this case, despite being summoned in the correct way, the doctor is significantly delayed (she is busy with her regular work at the hospital). This causes Nurse 1 (the head nurse) to be outspokenly agitated and frustrated. She has, however, understood the premise that the doctor will appear, and so does not prematurely initiate the any procedures normally done by the doctor (intubation and insertion of the Bülow-drainage). Instead, the Game Master uses the phone to check if the summon is correct and that the doctor will eventually come. Even after this has been verified, the lack of the correct medical procedures leads to fear for the patient’s life. This in itself constitutes a transgressional activity, as it is made apparent that normally the doctor would either make a quicker appearance or the team present would initiate the needed procedures themselves.

Even though the team’s expectations, in this second example, regarding the design of the simulation are overthrown (a breach has been made evident) they still strive to keep within the framework of doing the simulation as real as possible. Throughout the session, even though no
doctor shows up for a long time, Nurse 1 actively strives to not break the frame of the simulation, i.e. to not transgress the normative border of “what we are supposed to do”, and sticks to the protocol of regular medical procedures. She actively tries to uphold the illusion of the simulation. This is done through not turning directly to the Game Master, but instead discussing the issue aloud, showing distress and talking to the rest of the team about initiating the doctor’s medical procedures in order to save the patient’s life. By using only resources that normally would be available to the team, they are making the normative aspect of the simulation as an interactive illusion an oriented-to feature of their interactions.

The normative dimension of upholding the illusion of the simulation can possibly be inferred from this fact: whenever a glitch has been made relevant in the situation, this is often remedied by reintroducing a medical aspect of the situation into the conversation. Through this, an orientation towards the fact of medical work as the participants’ “proper” work is made manifest in the interaction.

Medicine is therefore a constantly (between markers of “start” and “finish” of the simulation, see excerpts on pages 67 and 103) preferred topic in the simulation. In, as and through this the glossing of the activity as simulation becomes accountably relevant for the participants. There are of course times where some participant is trying to switch topics (i.e. getting the simulation back on the right track) but failing. Such a failure, however, depends on interactional work on the part of the other participants in the team: the interactions in the simulation keep someone from initiating a proper topic (c.f. the excerpt “a failed attempt to minimize topic switches in face of glitches, on page 8888).

Summarizing: In this example, we see how one of the interactants make it an accountable fact of the simulation that in some respect their activity of doing intensive care medicine in the simulation does not quite match the intensive care medicine of their every day work. Utilizing the regular procedures (“protocol”) that they usually follow, Nurse 2 demonstrates the situation as something that they all are pretending it is not (a simulation). This forces the Doctor to remedy this exposure of a glitch through utilizing another “regular” excuse and account (that he has just started his shift). Doing this avoids (minimizes) further talk on the topic of the situation as “less-than-real” and affords a shift back to the “proper” topic of doing intensive care medicine in the simulator. In the second example (presented on page p. 86), though only engaging in procedures that would be available in their regular practice, the participants are demonstrating how they are accountable to keeping glitches (such as topic switches) to a minimum.
A failed attempt to minimize topic switch in face of glitches

Nurse 1, Nurse 2 and the Doctor are discussing how much morphine the patient has received. “Has he been given any pain relief?” asks the Doctor and Nurse 2 answers “yea he’s been given some at ER”. “Alright” replies the doctor. A short while later, the mannequin moans: “help, you gotta help”, to which doctor comments “maybe we should give him some more morphine”. Nurse 2 looks up to the Doctor from the patient and says “my god, he’s not Swedish”, as she gestures with her arms, showing her palms (pic. 1). Auxiliary Nurse 1 asks “he speaks English?” Still turned to the doctor, Nurse 2 folds her arms and explains “he speaks English see”. Meanwhile, the Doctor looks at her, starts smiling and looks over to Auxiliary Nurse 1, saying “yeah, he speaks English” (pic. 2). “Gannar maybe?” Auxiliary Nurse 1 says in anglicized Swedish. At this point, Nurse 1 leans over the mannequins face, saying articulately in English “we will help you Gannar (. ) in a minit”. This induces a lot of giggling in the audience, and the doctor hesitatingly starts saying something, (“ö:::hhh”), but starts laughing from what Nurse 1 says and does not complete his utterance.
Nurse 1 continues, after looking up at Nurse 2 and Aux. Nurse 1, adding a “Yeah man” (in English) to the doll. After this she looks up at Nurse 2, who is laughing hard and clapping her hands in the air (pic. 3). The doctor laughs silently and looks around the room as everyone is laughing. He then looks down on the patient again saying to him “This is gonna sting a bit” as he inserts a needle into the patient’s chest (pic. 4). Nurse 2 looks up at the monitor (top left-hand corner of picture 4), turns to Aux. Nurse 1 behind her and says “Alright, I think we’re gonna put in a catheter here”.

In this excerpt something can be seen about how one participant (the doctor), tries to keep the simulation on the topic of medicine, in this case of what and how much pain relieving drugs have been administered and how much should be given. As they are discussing how much he has been given, the mannequin starts moaning and complaining, asking for help. The doctor is clearly attentive to this as a sign of pain (see excerpt on page 74 for an analysis of this phenomenon), as it would be in the normal (non-simulated) practice of intensive care medicine. He asks if they should not give him some more morphine on account of this. Also, the procedure he is about to administer, the insertion of a canulla into the chest in order to relieve some of the pressure (causing the lung to re-expand) is a somewhat painful procedure that normally requires pain-relieving drugs.

However, it is also clear that at this time not everyone present shares the view that the patient’s moaning is a sign of pain. Nurse 2 is more tuned in to the fact that the doll is speaking in English and therefore cannot be taken to be Swedish. For her, this is the relevant aspect of what the patient is saying at this point. This is made interactionally observable in that she points this out to the doctor in a surprised tone of voice, saying “My god, he’s not Swedish”. She also marks this observation through gesturing with her lower arms, pointing them slightly outward and turning her palms upwards. This all serves to make up her observation as something new, unnoticed and relevant to the continuing interaction within the team.
This utterance makes a “glitch” the relevant topic in the simulation. It is at this point that something inappropriate, unwarranted and out-of-order is made an accountable fact of the situation, something that the participants have to deal with accordingly. This is done in a number of different ways, in sequence and in relation to each other.

Auxiliary Nurse 1 wants a clarification, asking if the patient speaks English. Nurse 2 responds to this (and to the doctors apparent lack of response) through folding her arms and pointing out once again, this time with more emphasis (Swedish “ju”, English “see”) that the patient is not what they previously took him to be. This question is produced in a more openly questioning tone, and clearly warrants an answer from the Doctor. Noticeable is also the fact that it is not the very same question. It is rephrased as to emphasize what made the doll’s nationality a relevant matter in the first place, the language it is speaking. It takes up relevant features of the previous utterance from Auxiliary Nurse 1, and incorporates them into the rephrasing of her remarks to the doctor.

Conversation analysis would restate this as the noticeably absent second pair part of an adjacency pair (question – answer) and that this is noticeable in just that Nurse 2 seeks to repair this with a restating of the question with more emphasis on the surprising, out-of-order nature of the observed event.

The Doctor, as he finally responds to Nurse 2’s utterances, does so in an excusing manner, nodding his head just a bit, smiling slightly and answering as of the mannequin’s questioned nationality is an obvious, unremarkable fact. In saying “yeah, he speaks English” he tries to hide and make this an irrelevant aspect of the medical practice in the simulator. Further, this is a hiding of the fact that the simulation is out of order in an accountably relevant way. It has presented a feature that is out of line with what a normal, proper and regular patient would do (a “glitch”). That the Doctor talks in an excusing way is a method for glossing over that particular feature of the simulator as a deviant thing, that this should not be made into a relevant aspect of the simulation and therefore that it is not part of what the participants are there to do. The nationality and the language the mannequin is speaking in are not supposed to be noticed, at least not made into a topic of the conversation. This is a feature of the simulation that makes it an oriented-to fact that the simulator is not “real” in every respect that it could (and should) be.

It is also made into a interactionally relevant fact of the simulation that the stated name of the doll, Gunnar Persson, (a quintessentially Swedish name) does not go together well with its moaning in English. Auxiliary Nurse 1’s comments continues on the topic of the nationality of
the doll/patient through pointing out that if the patient is from an English speaking country, it ought to be called “Gannar”, pronounced in American English.

At this point, the two rivaling ways of understanding this event (i.e. what is to be taken as the relevant feature of the simulation at this time) can be observed in all their intricate details. I have provided a somewhat more detailed transcript of this below:

**Nurse 1:** we will help [you Gannar (.)]= ((moves closer to patient))

**Doctor:** [Ö::hh:: ((audible sniff))]=

**Nurse 1:** = [in a ] minit

**Doctor:** = [yeô(h)(h)(h)(h)] ((leans over patient))

Nurse 1 standing by the patient’s head leans forward and says in English, exaggeratedly articulated as if talking to someone not quite conscious, with a hearing impairment or other difficulties of comprehending what is being said (such as being in severe respiratory pain): “we will help you Gannar (.) in a minit”. Here she picks up on the naming done previously by Aux. Nurse 1 and makes it a further point of a joke.

The doctor, standing over the patient to administer the anesthetic, says “ö::hhl”, which is a precursor to further speaking on his part, making it relevant that he is about to continue speaking. Nurse 1 has started talking before he has, thus self-appointing herself to be the current speaker, the one holding the conversational floor (Sacks et al., 1974). Because the doctor is speaking in Nurse 1’s turn, his utterance is accountably an interruption. The doctor’s prolonged “öö::hh::” shows that he is somewhat hesitant as to what to say next, but that he will say something next. He is trying to say something, but has yet to “put it into words”.

Even though the doctor is observably interrupting (also shown in how he stops talking and audibly sniffing instead, “repairing” the infringement he has done on Nurse 1’s right to speak) he still continues to say something. Whatever this is, it is transformed into laughter as he moves closer to the patient and Nurse 1 says “in a minit”. The doctor has thereby tried to interrupt and say something else, presumably in some other topic than the one Nurse 1 is pursuing, but has ceased to do so because he found what she said funny. This is thus an attempted but failed repair of the topic of the simulation, in that the rest of the team are ostensibly oriented to one aspect of the simulation and that he tries to interrupt them and continue doing something else. It can be
suspected that the doctor tries to move the topic of the conversation back into medicine, but that he respects Nurse 1’s right to continue speaking in her turn and aborts his attempt to take over the conversational floor, and thereby the right to resume talking on the “proper” topic of intensive care medicine.

The aspect of the patient as English speaking is not over yet, as Nurse 1 raises her head to look at how Nurse 2 and Auxiliary Nurse 1 has taken her previous joking. She sees them giggling, and looks back on the patient and continues in saying “yeah man” to the patient in an exaggerated American accent, wagging her head to the left and right as she does so. This time, Nurse 2 is looking at the monitor (where the relevant vital sign of the patient is displayed, such as heart rate and oxygen saturation) that is an accountably medical action, but as Nurse 1 talks to the patient, she looks down on her. She waits until Nurse 1 looks up at her again, and at this point starts laughing hard, leaning back a little and clapping her hands once in front of her. Nurse 1 meanwhile leans back and laughs all out. People in the audience are laughing as well, and the only one visible in the data is leaning back and forward, i.e. laughing all out. The doctor, bent over the patient to insert the canulla, looks back and forward, smiling.

The patient meanwhile complains: “help, you gotta help”, and the doctor replies “this is gonna sting a bit” as he positions the needle. Laughter has been dying off at this point, with Nurse 1 looking around at the other participants. When the Doctor starts talking to the patient, she immediately looks back down at the patient and ceases smiling. The audience is still laughing a little, when Nurse 2 says “I think we’re gonna do a catheter here”, as she looks back at Auxiliary Nurse 1.

Here the topic of the conversation ostensibly moves back to intensive care medicine in the simulator. In that Nurse 1 is looking about, she is monitoring the actions of the other participants, and therefore also for when to stop laughing. She has all but stopped laughing, but is still smiling when the Doctor’s words to the patient call for her attention and she turns back to

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52 Continuing taking this part of the simulation as a laughable matter is clearly a collaborative achievement. Utterances are not funny per se or because they are uttered in a specific context. That they are uttered in a specific sequential context does make them available as “laughable matters”, but the act of laughing still has to be coordinated in gaze, posture, gestures and other interactional resources. Laughing alone or at your own jokes can be seen as deviant, or could be the grounds for accusations of being boring, dull etc. Interactants orient to this in that they observably coordinate their joking and laughter.
him. Doing so she is turning back to the mannequin as a patient in need of intensive care medicine, observably treating him as she ought to do medically.

The same can be said of Nurse 2. As she stops laughing, she looks at the monitor once again and suggests a medical procedure to be initiated. To do this is to do medicine. That is to understand the mannequin as a patient in need of medical procedures. That is accountably not to take his cries of pain as being in any specific language, but to take them as cries of pain (and thereby as a resource in doing diagnostic, medical work) To observably start taking the doll as a patient is reflexively to do the situation as a medical simulation. That this situation is one of medical work can only be seen in, as and through whatever ostensibly regular, medical practices that makes it up. That the participants’ interactions constitute a medical simulation can only be seen in whatever practices that are accountably out of order, deviant and irregular of medical practice.

When the participants starts laughing at the mannequin, they are doing so because of the “glitch”, “breach” and “transgression” that has been pointed out by Nurse 1, Nurse 2 and Auxiliary Nurse 1. To point out that something is out of order in the simulation is to formulate the situation as something other than what it was taken to be prior to this. To do so is thus to expose the simulation as an interactive illusion, as a simulation. This does not imply that prior to this episode the participants were oblivious of the fact that the patient is made of rubber and steel, nor does it imply that they understood him as only rubber and steel. It is a suggestion that there are other aspects of this situation to be taken into account, that there are certain things that are out of order and can be quite laughable. Demonstrating a glitch in the simulation constitutes a breach and a transgression of the simulation in and through that the order of the interaction is momentarily transformed from “serious” medicine into “laughable matters”. Saying “but he’s not speaking Swedish” together with the interaction that sequentially follows this is therefore a formulation of how prior and further interaction can be understood.

Summarizing: It has been shown here how the character of the interactions that make up the simulation change in face of that someone makes some deviant aspect of the simulation the relevant topic of their work. Trying to initiate medical procedures in order to take the conversation back to the original topic of “doing intensive care in the simulation” is not always successful, but eventually this topic will be reinserted into the conversation, as this is observably and accountably what the participants came there to do.
Overplay as breach of the simulation

Nurse 2 is picking up the phone to call the blood-central at the hospital to ask if there is any blood ordered for the patient, blood that has to match the tests conducted previously (by the ER-team). “Aa I’ll call to check with the blood-central” she says as she moves around the bed, picking up the phone (pic. 1) and saying “blood-central” (with a slight rise in intonation) as she does so. “is there any blood ordered for this Oskar?” she says turned towards the Game Master with the phone to her ear. The Game Master replies: “then they’re saying that they can’t find any blood typing or base on him”. As she is finishing her utterance, Nurse 2 interrupts this with “you gotta be kidding”. At this time, Auxiliary Nurse 1 starts smiling, looking towards Nurse 1 and the Game Master, while someone from the audience starts to laugh (pic. 2) The pilot also starts smiling, but as soon as Nurse 2 says “but you gotta da- look in the tube-mail” (suppressing a curse-word in the middle of her utterance), the Pilot ducks in behind her screen and Auxiliary Nurse 1 looks down and stops smiling. “mm nothing’s come there” the Game Master says while the pilot looks

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53 This is a series of standard blood tests.
around, first smiling at the audience and then at Nurse 2. “Mm then I’ll send new ones and it better be quick”. Nurse 2 continues in an irritated tone of voice, the pilot laughs a short and suppressed laugh as she once more ducks behind her screen and Nurse 2 finishes the telephone call with “mm thanks bye”. Auxiliary Nurse 1 looks at Nurse 2. She moves across the room, puts down the phone and exclaims “fucking idiots”. The audience starts laughing right away and Auxiliary Nurse 1 starts smiling and turns around to face the Game Master (pic. 3). She then stops smiling, turns once more to Nurse 2 and back again to the Game Master and starts smiling once more. Around this time someone from the audience silences the laughter with an audible “hjyssh:::”. Auxiliary Nurse 1 turns back to Nurse 2 again, leans towards her and says “it doesn’t have to be that real” (pic. 4) in a lowered voice but emphasizing “that”. Someone (it is unclear who) simultaneously comments this with “it’s true though”. Nurse 2 answers Auxiliary Nurse with “oh yeah”, looks up, shakes her head and says “that was dramd”. All through this, Nurse 1 has been busy listening with a stethoscope to the patient’s chest. She now takes the stethoscope from her ears and says “now we’re saying the doctor shouldn’t we tube him”, turning towards the pilot and picking up a laryngoscope54. As the team busies itself with informing Nurse 1 that a real doctor will show up, the comments regarding Nurse 2’s overacting ceases and the conversation moves on to other topics.

54 An instrument used for intubation
This excerpt considers the work of "overplay" in the simulation. Nurse 2’s actions in this episode accountably constitute “improper” work in the simulation, and are thereby a breach of interactionally established limits of their activity. This “overplay” is worked up throughout this episode, starting from where Nurse 2 does not immediately accept the Game Master’s explanation of that they have not received any blood samples in order to do blood grouping, base-tests and delivering blood. This is demonstrated when she questions the correctness of the Game Masters utterance (Nurse 2: “you gotta be kidding”).

The using the telephone for conversing with the Game Master who is present in the same room is a technique in which Nurse 2 makes manifest the simulation as an interactive illusion. It has been previously established that the phone can be used (Auxiliary Nurse 2 has called the doctor), and therefore Nurse 2 uses it as an artifact that is part of the simulation. She maintains talking into the phone all along, visibly pressing the hang-up button when she is finished. The telephone is, at this time, in all interactionally relevant respects functioning as a regular phone would, and thereby Nurse 2 is accountably hiding a possible “glitch” in the simulation. Noticeable is also the Game Master’s use of third person plural pronouns (Game Master: “then they’re saying that...”) in order to refer to the personnel at the blood-central, indicating that she is not speaking for herself or as somebody else but instead referring to what a third party is saying. Nurse 2 on the other hand takes the Game Master to be that personnel through using second person plural pronouns when talking to her (Nurse 2: “you gotta be kidding”), ignoring the Game Master’s intention to “mediate” information. The Game Master picks up on this and in her next and further utterances the Game Master refrains from using personal pronouns altogether. When talking about the tube-mail she designs her utterance as if she herself was there to check if something has arrived (“nothing’s come there”). In CA, this is an example of recipient design (cf. Sacks & Schegloff, 1979). The Game Master is at first demonstrating reluctance to “play along” in the simulated telephone conversation, but falls in behind Nurse 2 when she uses this type of (familiar) language game, and designs her utterances to “fit” with what Nurse 2 is saying. She is still, however, one of the first to issue sanctions towards Nurse 2 when the breach is further developed.

Nurse 2 is observably trying to uphold their activity as “as real as possible”, through doing interactional work in order to keep the simulation from “glitching”. She could speak directly to the Game Master, but chooses to use the phone and to stick to a language game familiar to this institution. She does not direct her attention directly towards the Game Master, but wanders
about in the room. These are all methods for upholding a certain level of fidelity in the simulation. Similarly, for the Game Master to change her footing\textsuperscript{55} at this time is a way for her to collaborate in this effort.

The breach of “preferred” and “proper” work in the simulation is established immediately through the various overhearers reacting in much the same way, i.e. laughing or smiling. Nurse 2’s utterance (“you gotta be kidding”) has yet to constitute a “full breach”, as the other participants hide (like the Pilot) or stop smiling when Nurse 2 continues talking to the Game Master/blood-central. In the two turns that follow, the Game Master still asserts that no blood samples have been sent, and Nurse 2 is observably displaying irritation, even though she is trying to hide this (keeping professional) as she suppresses a curse (the Swedish word “fan” is transformed into “fjanke”, which means, roughly, ”damn it”). The laughing and smiling establishes the conversation as “laughable”, but the audience and the rest of the participants hesitate in following through with this, as they await further developments of the topic.

This part of the conversation is not expected, seen in how the pilot and audience smile toward each other. In this something of the interactional order of the simulation is visible. The all-out laughter comes from the audience, who are not active participants in the handling of the mannequin. As their role is to monitor their co-workers and taking notes, they cannot be held liable for doing any medical procedure wrong or, crucially, for the level of fidelity of the simulation. In that they are accomplishing the all out laughter they are establishing themselves as “not-being-part-of-the-medical-practice-in-the-simulation”. This can be contrasted with Auxiliary Nurse 1’s more hesitant (in temporality as well as in amplitude) smiling, demonstrating her attitude towards the situation as more cautious, as she could be held liable for the actions that take place in the simulation. Also, she is quicker to finish her smiling, and even though she is not participating in any other medical procedure, she shows herself as not participating in the joking any more.

This is further emphasized when Nurse 2 tells the blood-central to be quick about it (Nurse 2: “Mm then I’ll send new ones and it better be quick”), where the Pilot suppresses a laugh and hides

\textsuperscript{55} To change footing is yet another of Goffman’s terms relating to “[…] occasions when participants’ alignment, or set, or stance, or posture, or projected self is somewhat at issue. A change of footing implies a change in the alignment we take up to ourselves and to the others present as expressed in the way we manage the production and reception of an utterance” (Goffman, 1981, p. 128).
behind the screen. At this time it is noticeable how the Pilot considers the episode “laughable”, but also that this is something that might in itself constitute further breach of the “proper” work in the simulation, and that she therefore tries to keep this from being noticed. The pilot’s actions formulate in so many words (or actions) her comprehension of the interaction preceding them.

Up to this point it is accountably so that something out of the ordinary has occurred, but that the participants also manifest that they are not supposed to take these events as out of the ordinary. In fact, the breaching utterances by Nurse 2 are produced in a very “regular” fashion, which is in line with “doing what we usually do”: she is talking in ways that are regular institutional practice, using their familiar language game. There are two interesting aspects of this episode that are manifest when Nurse 2 hangs up the phone and exclaims “fucking idiots”. The first is that Nurse 2 is accountably “doing what we usually do”, in that it constitutes a comment about the regular institutional practices of the hospital (albeit perhaps exaggerated, over-the-top or emphasized). The second is that this is something that is not accepted as regular practice in the simulation. Thus, it is regular practice that is disallowed in the current circumstances, despite the stated instruction of “do what you usually do”.

When Nurse 2 does her exclamation, this is ostensibly a break from what she ought to do. The audience starts laughing very loudly, and Auxiliary Nurse 1 turns towards the Game Master, bending over slightly with silent laughter. Auxiliary Nurse then turns towards Nurse 1 and, in a lowered tone of voice, says “it doesn’t have to be that real”. This is an evaluating account of the events preceding it, but also heard as a normative requirement for the rest of the simulation. Auxiliary Nurse 1 is hereby commenting on the fidelity of the simulation, which has been a topic both prior to the onset of the session and during it.

Overacting, and thereby saying things “disallowed”, is clearly a “laughable matter”, and is a visible interruption in the flow of the simulation. For a few turns, the topic change from medicine in the simulation to laughs and comments about the simulation itself, and this is something that should be avoided. The participants, through marking this episode as transgressional, establish some local order of the simulation. Even though Nurse 2 reacts in a way that is perfectly viable in her regular practice, doing this in the simulation is accountably “improper”. The simulation cannot therefore claim a level of fidelity established once and for all, a level dependent on the maxim of “do as we usually do”. In this case, it is doing that very thing that is deemed “out of order”. Nurse 2 is not just acting her part: she is overacting her part. Reflexively, this shapes the rest of this episode into one of commenting on this and trying to get
the conversation back to serious intensive care medicine in the simulation. In this case, doing “what we usually do” does not include making comments about the functioning of the rest of the hospital. Maintaining a “proper” simulation does not just entail trying to maintain a high coherence between behavior in the simulation and behavior in regular practice (the level of fidelity). It also entails to cut out certain aspects of the regular practice in the simulation. Formulating the (in) appropriateness of a certain action is, as always in this thesis, done locally and with those semiotic resources at hand.

At the same time, Auxiliary Nurse 1’s posture and body-position when saying “it doesn’t have to be that real” to Nurse 2, as well as her lower tone-of-voice, informs the conversationalists that this utterance has something of a “confidential” character, not intended for public comment, criticism and the like. Auxiliary Nurse 1 is showing a change from utterances being publicly available, as these normally are done without a specific closing of distance and change in tone of voice. A majority of times, utterances produced in this setting are clearly intended as comments on the progress of medical procedures, queries for the status of the patient, orders to do one or another thing etc. All these utterances, being stated “loud and clear” are usable for other participants as resources in their further work. As her claim that “it doesn’t have to be that real” entails a possible criticism, producing this utterance in a more “intimate” mode serves to mitigate the possibly face-threatening that Auxiliary Nurse 1 is doing.

Just as Auxiliary Nurse 1 is formulating (thereby imposing sanctions on) Nurse 2’s utterance, someone else in the room can be heard saying “it’s true though”. This comment is heard as a formulation that what Nurse 2 did is indeed a proper, regular and real way of reacting to these things. This comment, together with Auxiliary Nurse 1’s, as well as the laughter and commotion that Nurse 1 sets off, are all formulations of Nurse 2’s telephone conversation and following reactions. They are demonstrating “in so many words” how they perceive the prior event.

Nurse 2, who is established as the person responsible for this breach of the order of the simulation, answers Auxiliary Nurse 1 affirmingly by saying “oh: yea”. She then looks up, and says, in a “sighing” voice, “that was drama”. Through Nurse 2 uttering “that was drama” the topic of commenting the simulation (not just doing the medicine of the simulation) is ending. It is a final assessing formulation of the previous activity, and demands the furtherance of “the normal business of doing intensive care medicine”. This assessment clearly formulates the previous interaction as theatrical and as something that was not completely genuine. The topic switch is not managed through “running out” of things to say on that topic (Goodwin & Goodwin, 1992).
Instead, Nurse 2’s final utterance clearly displays active participation in the conversation on that topic, but also that this is the final word on this subject.

This closing of the current topic is continued when Nurse 1 removes the stethoscope and says: “now we’re saying the doctor shouldn’t we tube him”, turning to the Pilot with the laryngoscope in hand. This in itself is a transgressional action: Nurse 1 has apparently misunderstood one of the premises of the simulation (that a real doctor will show up) and tries to initiate procedures that normally only the doctor would be allowed to do (intubation). Nurse 1’s attempt to reintroduce medicine as the next topic thereby fails, as it is not medicine that adheres to the institutional order of their regular practice (and therefore, in this case, the order of the simulation) and it becomes a pressing matter for the participants to convince Nurse 1 that a real doctor will show up eventually.

Summarizing: This excerpt constituted an episode of overplay in the simulation. Participants orient to the fact that this episode is a breach from what they are supposed to do. This is done in and through that some utterances are immediately laughed at or otherwise marked as deviant from what is expected in this situation. The breach is induced through Nurse 2 talking in ways (language games) that are non-problematic (or at least not laughable) in the participants’ normal work, but are inappropriate in the simulated work. Auxiliary Nurse 1 comment (“it’s true ‘do”) asserts the “regularity” of what Nurse 2’s is saying, and the Game Master formulates the inappropriateness of it with “it doesn’t have to be that real”. Returning back to a “proper” topic is initiated with Nurse 2’s formulation of the events (“that was drama”), which also concludes the topic as “overplay” and then through Nurse 1 commencing talk on a medical subject. This breach is thereby a transgression of the order of the simulation not through it revealing some aspect of it as “not authentic enough”. Instead, it becomes a breach when Nurse 2 (through her utterances) makes the simulation too authentic. There are both upper and lower limits to how much or little fidelity is supposed to be achieved in the simulation. This is something that might be useful in discussing the simulation order. Fidelity is not always something to be revered: there are cases when this is seen as “over the top” and “overplay”. What the participants are there to do is accountably not doing the simulation as authentic as possible in every instant. This might instead be more correctly formulated as “doing the simulation with the correct level of authenticity at every instant”.

100
Establishing an ending of the simulation

The team has just finished the roll maneuver where the spine board has been removed and the patient’s back has been examined. This is accomplished with someone saying “so:::” and someone else calling for more pain-relief. The Game Master, who is standing beside the mannequin’s head manipulating some the tubes attached there, says: “Then they’re saying from OR that you’re welcome in”56. This is acknowledged by Nurse 1 and 2 saying “ad” and “mm”, followed by Nurse 1, standing bent over the mannequin’s head, saying “Let’s get the transport cart then an”, looking up at the rest of the team all standing beside the bed (pic. 1). She is interrupted by Auxiliary Nurse 2, who looks back at her saying “It’s done () Emma’s taken () care of it” as she is folding one of the patient’s blankets, preparing him for transport. After a short pause the Game Master (not visible) says: “Let’s end it there guys () good work”, immediately acknowledged by unidentified speakers. Nurse 2 turns towards the preparation table (pic. 2) starts smiling and says “It’s a bit hard when you don’t really know how you work” as she turns back

56 OR = operating room
again looking at the Game Master. Her comment is followed by Auxiliary Nurse 1 saying “you don’t get really serious in a way”, looking first at Nurse 2 and then at the Game Master. Nurse 2 looks at the Game Master, putting her face in her hands (pic. 3).

In the first part of the analysis (page 67) of the simulations, it was demonstrated how the simulation needed an opening in order for the participants to treat it as “started”, and how closing the briefing together with the opening sequence of the team’s work afforded the “proper” topic of doing intensive care medicine in the simulation. Closing the preceding activities and initiating the activity of the team doing the simulation was done with various techniques, and it could be seen how the team took up their proper places in the room, making sure that they were attentive to the initiation of the simulation (Nurse 1: “are you with me...”) and continuing with the proper topic and procedures of medicine that they all came to do, i.e. making the start of the simulation an accountable fact of the activity.

In the same way, closing the simulation means establishing as an accountable fact that the session is over. In the case transcribed above, as in all other sessions examined in this study, it is the Game Master who calls it off and says something along the lines of “let’s end it here (.) good work”. This completion of the simulation is however not random, private, sudden or surprising. The team “works up” to a point where they cannot do more, and so the Game Master must call it off. Because the scenario is designed so that it makes extensive surgery of the patient necessary (the ruptured spleen, pneumothorax and neck-injuries), it is clear that after a certain point the patient has to be transported to the operating theatre. The closing of the simulation is projected and expected through the activities that precede it.

57 Compare this with Sacks, Schegloff and Jefferson’s discussion of projections of transition relevant points in turn taking in conversation (Sacks et al., 1974).
Continuously, the team is in contact with other parts of the hospital, such as a surgeon and other personnel at the operating theatre, making sure that their diagnosis of the patient is communicated to other places that need to know this. In all cases, apart from the summoning of the intensive care doctor on the phone, communication with the rest of the hospital is done through the Game Master playing various roles. These include handing over results from ex-rays, telling laboratory results, and saying: “Then they’re saying from OR that you’re welcome in”.

In the beginning of this excerpt, the Game Master is doing an action recognized as a “rounding of” (pre-closing) of the simulation, in that she says that “Then they’re saying from OR that you’re welcome in”. This calls for the preparation of a transport cart, which apparently has already been taken care of. Organizing the transportation of the patient to the OR is the last thing that it is the team’s responsibility to do, and in making sure that this has been taken care of the team might project the closing of the simulation. If everything has been adequately prepared for transportation, the Game Master can do the proper closing at this point, saying that “let’s end it here guys (.) good work”. This is accountably closing the simulation in a number of ways:

- It’s sequential placement after all recognizably proper transport procedures have been established as taken care of, i.e. that the team has done all that they can at this point.
- The call to “end it” (“bryta där”) is apparently a call to stop the simulation.
- “Good work” is an assessment (Goodwin & Goodwin 1992), formulating the previous activity and evaluating it, projecting a change of topic in the conversation.

That the simulation is ending is of course shown in that the team stops simulating. But how do they, as well as an analyst, see this? For one thing, they are recognizably not doing “medical work in the simulator” anymore. Instead, after closing-assertive “mms!” and “hmms!” (by non-identified speakers) Nurse 2 says “it’s a bit hard when you don’t really know how you work”, in a laughing voice. This is intertwined with Auxiliary Nurse 1 saying “you don’t get really serious in a way”. These two utterances are both recognizable as something other than medical talk, but as comments and formulations regarding their conduct in the simulation. They are specifically not heard as contributions to the simulation. Auxiliary Nurse 1’s comment about “not being serious” is heard (in its specific place after the Game Master’s and Nurse 2’s utterances) as a continuation of Nurse
2’s criticism of their work in the simulator.

Just as when initiating the simulation, participants make it observable in gestures and movements that a new activity has begun. Some of these gestures are those of tiredness and relaxation, such as Auxiliary Nurse 1 putting her hand to her face. These gestures and positioning, together with the rest of the various accounts made by participants, reflexively make up what they are doing from here on as evaluation and ending of the simulation. They are not seen as interactional moves in the simulation, but rather as moves about the simulation.

The assessing of the fidelity of the simulation (the simulator and the actions taken in it) is frequently done immediately after its endpoint, and often accomplished in concert with the audience who would usually applaud immediately after the Game Master calls for the break of the simulation. For example, in one of the sessions (not transcribed), after applauds from the audience, some laughter, sighs of relief and patting on the back, Auxiliary Nurse 1 says “but it’s so different, it’s like nothing that’s like ehh” with others in the team acknowledging this with “mmm” and “hhmmm”. The observed congruence between the simulation and the practice that it simulated is a pressing issue for the participants, and they frequently assessed their differences immediately at the first chance they got after the proper closing of the simulation.

Such formulations of the fidelity of the simulation can in other cases, as shown previously (e.g. excerpts on pages 88 and 94) disturb the local order of the situation, i.e. revealing glitches in the simulation. Talking about their work while laughing, saying that it is difficult and that it is hard to be completely serious is, at this time, not heard as revealing any glitch in the simulation: it is non-transgressive. It is not noticed as “out of order” or “improper”. In fact, in one session (with the participants from the excerpt on page 66), continuing with the simulation after its accountable endpoint is a sanctionable matter. There, Nurse 1 continues with specific medical work after the simulation is called off, and he is told, in various ways, to stop doing this, i.e. not stopping at the proper point is a sanctionable matter.

Also, in a separate session, trying to initiate further medical procedures after it has been made obvious that the simulation is about to stop (the Game Master saying that the OR is ready for the patient) is handled in two ways: either the rest of the team establish these medical procedures as something that can be done in the OR (i.e. outside the range of the simulation) or are simply ignored.
1. **Doctor**: Let’s go in then

2. **Nurse 1**: He seems [to be in pain, can we give [him more morphine]

3. **Nurse 2**: [mm then it’s not noted]=

4. **Doctor**: [Yeah that’s okay]

5. **Nurse 2**: =an arterial canulla on him (.) now

6. **Doctor**: We can do an arterial canulla if we’re not-

7. **Nurse 2**: In there maybe?

8. **Doctor**: Yea:, maybe we’re on our way in now

9. **Nurse 2**: Yeah, it seemed so

10. **Nurse 1**: We could give him more morphine he’s in a lot of pain

11. **Nurse 2**: Is [he?]

12. **GM**: [Really] good work everyone (. ) let’s break it here

((starts applauding))

((everyone moves away from the bed or turns around))

Even though the Doctor states that it is alright to give more morphine, he together with Nurse 2 right away establish that the procedure of inserting an artery canulla can be done in the OR and that they are one their way their now, i.e. that this procedure is out of the simulation’s range right now. An artery canulla *could* be inserted into the doll, and Nurse 2 clearly indicates that this is the normal thing to do (lines 3 and 5). Instead the doctor’s hesitancy (end of line 6) as well as his and Nurse 2’s joint abstaining from doing the procedure (lines 5 – 9) is heard in the sequential conversational context of the establishment of a projected ending of the simulation (line 1, as well as the Game Master saying that the OR is ready).

That this conversational context is a relevant issue for the participants is also heard in Nurse 2’s questioning of Nurse 1’s suggestion (line 10 -11). The projected ending of the simulation *should* be a matter oriented to by participants. In both the previous establishment of a medical procedure as
“out of bounds” in the simulation at this time and in Nurse 2’s questioning of Nurse 1’s
diagnostics the team refrains from carrying out medical action in the simulation, and thereby show
that the simulation is about to end.

The next action carried out is the “official” ending of the simulation when the Game Master
assesses their work, calls for a break and starts applauding. Noticeable at this point is the marked
change in positioning of the participants, as they all start moving away from the bed to some
degree (turning around or walking away). Compare this with what could be seen in changes in the
participants’ positions in the room at the initiation of the simulation (page 66) How the
participants position themselves in relation to the central artifact of the simulator (the mannequin)
is a reflexive feature of the situation. In and as participants are visibly not in the vicinity of the
mannequin after the establishment of a projected ending, the simulation can be stopped and an
activity of assessment and debriefing can commence.

Summarizing: ending the simulation involves using various interactional resources for closing the
activity of medical work and beginning the activity of evaluating that work. It is the Game Master
who initiates this, but the completion of the closing is a collective activity. The pre-closing is done
by the Game Master (saying that the OR is ready) but is followed by the procedures that are
needed for finishing the medical work (transporting the patient to the OR). It is through its
placement after these procedures that the Game Master’s utterance calling for a halt and
assessment of the simulation can be heard as accountably ending the simulation. In the first
excerpt (page 102 - 103) after this point Nurse 2 and Auxiliary Nurse 1’s utterances are heard as
assessments and comments about their previous work. These comments are made without running
the risk of disturbing (revealing glitches in) the work of intensive care in the simulator. Their
utterances are observably no longer said in the simulation, but are done outside of it and are
therefore heard as “safe” and “non-threatening” comments about the simulation. In the second
excerpt (pages 106), as soon as all relevant medical procedures are jointly established as non-
necessary at this point of the simulation (the non-necessity of them determined with reference to
the known-in-common soon-to-come ending of the simulation) the Game Master can call the
simulation off and assessments and debriefings can begin. In the same fashion as when initiating a
simulation, the ending the simulation requires collaborative work in establishing the simulation as
different from the activities that surrounds it.
Discussion

So what can be made out of all this? A long exposé of the fundamentals of ethnomethodology, followed by in-depth analysis of some sessions of simulated intensive care. There is a sense in which this study could be over by now. But still, a little more clarification is called for in order to bring this thesis to a close.

Doing an ethnomethodology of intensive care simulation has revealed details of this practice that up to this point has been overlooked and missed, except by for example Rystedt (2002) and Johnson (2004). These are details of the participants’ local and situated comprehension of their own activities in medical simulations. These details of their reflexive and accountable understanding can in turn be related to some of the themes of previous research into simulations that was discussed in the introduction to this thesis.

This study will use the important concepts in simulator studies as thematic headings, using these concepts as starting points in the discussion. The underlying aim is to further the understanding of both simulations and the concepts used to talk about them. For example, this section will not talk about pros and cons of simulation training in health care education, nor discuss the level of fidelity of the simulation as such. Instead, this discussion will talk about how for example “fidelity” is done by the participants in the simulation, and thereby discuss how this concept is put to work in practice.

There are three thematic headings in this discussion. They are dealing with fidelity in the simulations, understanding the simulation as an activity in its own right and some pedagogical aspects of the simulations respectively, each dealing with potential implications that the findings of this study might have for understanding simulations more generally, as well as potential criticisms of these findings.

**Fidelity in the wild: doing realness**

As we have seen, fidelity is regularly understood (in a theoretical fashion) as the degree of congruence between simulans and simulandum. These concepts features prominently in both development of simulators as well as in their use, be it in educational, scientific or evaluative activities. Something that this study tries to show is that fidelity is also an important aspect of the participants’ interactions in the simulator.
It is evident from these excerpts that the fidelity of the simulator is not a ready-made property of the technology that sits at the center of the simulation. Neither is it feasible to call it a property of the activity of simulation itself. Even though the Laerdahl SimMan that is used in these sessions can be said to comply with all the standards for a high fidelity simulation (such as, like Thiagarajan (1998) would say, mapping a large number of elements and interactions onto the machine, as well as allowing the participants to use the same techniques and hardware as they usually do) this in itself does not make these simulations more real or authentic. Technologically, these simulations are performed with state of the art technology; both the simulator and the rest of the equipment are designed to allow the maximum amount of immersion and presencing of the participants. Yet, as seen, on multiple occasions in every session, the fidelity of these artifacts, as well as the simulation as a whole, is called into question.

This study takes on an ethnomethodological attitude to studying interaction. This means that it takes as one of its premises that interaction in the simulation can be coherently studied as indexical and reflexive of the context in which they occur, and that it can be studied on a sequential, turn-by-turn basis. What can this premise, in conjunction with the data presented previously, say about fidelity in the simulations? Those events that are important to aspects of fidelity are those where the “realness” of the simulator is formulated in some way as divergent from “what we usually do”. The evaluations made by the participants are done in the form of various types of sequential accounts, where the fidelity of some action will be made interactionally available as something problematic. The fidelity of an action is often judged right there, at the very next possible turn. The action of evaluating the fidelity of some aspect of the simulation, as it is done in situ, can be used as a proof procedure (Sacks et al., 1974) for how the “authenticity” of a preceding action is understood by the participants. It is by the next turn’s action that the interactional relevance of the preceding turn is revealed to the analyst, as well as made available for further conversation to the interlocutants.

As an initial example, the three transcribed events “making sure the team is doing ‘what we are here to do’” (page 74), minimizing topic switches in face of glitches (page 81) and “a failed attempt at minimizing topic switches in face of glitches” (page 87) reveal that the fidelity is challenged or called into question not solely on the ground that some part of the simulation is not real enough. The participants are not just pointing out to each other what actions and utterances are deviant, or calling for the immediate return to doing medical work. Challenging the fidelity of events in the simulation is done in a whole range of ways, for various reasons and with different outcomes. The reader should not be fooled into thinking that there is one common factor to all these events. They
do however, in Wittgenstein’s terms (1953, §67), all bear some family resemblance to each other.

In excerpt “a failed attempt to minimize topic switches in face of glitches” (on page 88) the accountable formulation of the situation (what the participants are saying in so many words) is that talking back at the doll in English, especially pronouncing his Swedish name in anglicized Swedish, is a laughable matter at this time, and that publicly displaying the amusement of this joke is a proper behavior (even though it is not proper for an indefinite time, as interactional measures are summoned in order to bring the activity back on its proper course). In the excerpt “making sure the team is doing ‘what we are here to do’” (on page 74) the same participants are once again doing transgressional work, but this time for other reasons. By Nurse 1 implying that Nurse 2 is doing something outside protocol (“you’re just circulation”), this warrants a rebuttal from Nurse 2 (“but I’ve talked to him...”), making the adequate fidelity of the simulation the topic of that part of the conversation. At this time, there is also focus on the congruence between simulans and simulandum, but within a completely different sequential context and with different conversational implications. In the first example, bringing about an exposure of a lack of fit between the simulation and the practice simulated becomes something of a “comic relief”, one where the regularly serious face of their medical practice in the simulator can be transformed into something amusing and joyous. The second example is also one where to fidelity of the simulation becomes the topic of the conversation, but one where the adequate fidelity of the simulation is used as an argument for demonstrating that correct medical procedures and protocol has been followed.

On both these occasions, some other simulation-analyst might conclude that the fidelity of the simulation is inadequate, and perhaps propose remedies for these faults in the design of the simulator (having the mannequin speak in Swedish instead of English) or the simulation (making sure that the participants are adequately informed on what medical procedures can and cannot be performed). Perhaps these situations would not occur if a different simulation-design was used, and using data such as the present to improve on simulations would be a good thing to do. But claiming that there are ways of improving simulations fails to recognize these events for what they accountably are in these cases: substantial conversational moves that reflexively formulate the situational context of the simulation as a simulation. Both these occasions focus the participants’ interactions on this aspect of their current activity: that it is not precisely what they usually do. Looking at these conversational moves will reveal some of the ways in which the participants demonstrate “doing proper intensive care work in the simulation” and “doing improper work in the simulation”. There are ways of making sure that transgressional activities happen less frequently (simulations can improve), but here I have dealt with these situations as they occurred.
this time. My way of construing the participants’ interaction does not disvalidate the claim that improvements could be made on these sessions: it is just not my purpose with this study.

It should be noted how the fidelity of the simulation is negotiated turn-by-turn by the participants. The sense of the simulation as “not real enough” is not established once and for all, but ongoing through the turns-of-talk. We see in both these examples that the participants return within a few turns’ talk to doing regular medical work. In the excerpt “a failed attempt to minimize topic switches in face of glitches (on page 87), it is only when the doctor initiates proper medical work, engaging in the language game that involves administering a possibly painful procedure whilst keeping the patient informed and comfortable about this that the rest of the team returns to participating in the medical activity of this simulation.

It is also dangerous to place the fidelity of the simulation in the situation itself. This would be a reification of the ongoing activities that should be kept well clear of. How well the simulandum and simulans fit is not best described as a function (in any scientifically viable way anyway) of the actions and interactions between participants and artifacts. This would be a theorization of what the simulation-work looks like, a formal analytical formulation of the members’ work. Explaining the interaction between human and machine just by incorporating factors of “context” into the equation will not suffice if we want to look at the reflexive accounts of participants there-and-then. Authenticity is not best studied as an outcome of the participants’ activities. Such a view would result in a postscript of the simulations, and in the process loose much of the details in how the situation is seen as authentic or not right there, at that specific time. Understanding how the participants achieve the fidelity of their simulation cannot be achieved by erecting a model of the simulation-session: rather, it is how the participants themselves make such models of the simulations relation to their regular work practice relevant that is relevant for this study. It is necessary to scrutinize the details of the participants’ accounts in various situations for their methods of understanding and displaying understanding of the simulation.

The first thing found is that participants’ accounts of their situation vary over time. This was the starting point of this study, as explained in the very first paragraph of the text, but by now, with the analysis in hand, it is possible to understand the sequential workings of some of the situations where the participants are accountably not doing what they are supposed to do.

Fidelity should perhaps, from the participants’ perspective then, not be understood as a property of the technology or of the simulation itself. Following the analysis in this study, a viable way of understanding this concept should take into account the practicalities of doing fidelity (how
participants are saying in “so many words” that this or that action, artifact or utterance is as real or less so than the situation at hand requires).

For the participants the goings-on of the simulation are not what they are used to. Objects, utterances and actions are on many occasions understood as objects, utterances and actions in a simulation, and can therefore not always be understood and treated as they regularly would be. The participants are, visibly and accountably, in all the transcribed sessions, at one time or the other showing that “whatever we are doing, it is not what we usually do”. The title of this thesis can be shown to be one of the participants’ concerns in relating the simulation to their regular work practice.

**A criticism of circular definitions of terms**

An obvious critique of this discussion of fidelity of the simulation is that it is merely a redefinition of the term fidelity. Distancing itself from a view of fidelity as a property of congruence between simulans and simulandum inherent in the technology, this study does an ethnomethodological respecification of the concept into an account of how participants (users) of the technology make it an interactionally relevant fact that some action is not as real as it ought to be (or, for that matter, that it is adequately authentic). According to this line of reasoning the study will have fallen prey to the temptation of circular arguments, where the premises of the study are claimed as results in the concluding parts of the thesis. This cannot generate any new insights into what goes on in these simulations, but merely come up with new definitions of terms.

But one way of understanding fidelity might not exclude the other. The aim of this study is not to make simulator-developers abandon all their practices of determining fidelity and verifying the models of the simulation. Those practices are in all probability good and well, and the present thesis has no way of objecting to them. What this study shows is rather an alternative view of fidelity, and possibly one that is more tightly bound to the practicalities of doing simulation. Such an alternative view is less bound to technological and theoretical (formal analytical) definitions of a simulator. Examining simulations from this perspective, this study might contribute to the furthering of the understanding of what simulations can look like. These observations might then, of course, be utilized by simulator-developers, but the function that it might play there is beyond the scope of this thesis to answer.
The idea of the interactive illusion revisited

Following the data of this study, it can hardly be said that the simulation constitutes an interactive illusion, despite what the advertisements on the manufacturers’ homepages claim. But yet, there is a sense of the interactive illusion that looms over the interactions in the simulations anyway. As has been displayed, there are ongoing negotiations over what shall count as proper work in the simulation and what shall not. That which is deemed to not be part of “what we are here to do” (i.e. those events that require interactional remedies in one or the other form) is generally those events where the simulation is interactionally available as a simulation. Those instances where the participants formulate the sense of the situation as “different from regular intensive care medical practice” is either made into the starting point of some sort of joke, ridicule etc; quick and efficient repair (such as the example shown on page 37) or more prolonged negotiations.

The sense of the interactive illusion is something that the participants themselves are trying to uphold. The authenticity of the simulation is their own concern, and they show orientation to the fact that what they are supposed to do is to conduct the simulation in a fashion as similar to their regular work practice as possible. In a scientific and technical sense, it is not hard to point to the ways in which these simulations are not fulfilling the specifications for the interactive illusion (as given by Linderoth, 2004). But in a more important way, this study has shown that trying to uphold the simulation as “real for all practical purposes” is something that the participants regularly engage in. All the excerpts analyzed here show this phenomenon. Achieving and managing the borders of the simulation is, for the participants, to try to make this simulation as real as possible (and, perhaps in the long run, as good as possible)58.

The achievement and upholding if these borders, through transgressing and returning to the work that the team is there to do, is, as shown, done from within the practice of doing medical work in the simulator. Transgressing the regular simulator-work happens in the direct sequential context of that work (cf. Lynch, 1993, p. 279, footnote)

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58 A complementary way of understanding this is that the transgressive activities in the simulation function as “face work” for the participants. To make glitches in the simulation relevant might be a way for the participants to demonstrate that they are not “caught up in” the simulation, that they are still able to maintain a healthy distance between themselves and the simulation. “Overimmersing” is not necessarily a good thing for the participants, as is shown in the chapter on “overplay as breach of the simulation” (page 95).
In the excerpt “a failed attempt to minimize topic switches in face of glitches” (on page 88) Nurse 2 and the Doctor are also actively interacting and conversing in medical and institutional ways in order to not transgress the simulation work. Nurse 2 delivers her revelation of a glitch in the simulation in a way that utilizes the semiotic resources that their medical activity allows for. Their interactions show an orientation to the view that the team should not break the illusion of the simulation if it is not absolutely necessary (although “necessary” is contingent upon each situation). The breach (or avoidance of it) is done in and through a medical language game.

As we have seen, however, this can also lead to “overplay”. Even though the institutional relations of the participants’ regular practices are being referenced, this in itself might constitute a transgressional move in the simulation. In the excerpt “overplay as breach in the simulation” (on page 95) Nurse 2’s exclamation that the blood central are “fuckin’ idiots” is accountably taken as “over the top” or “not called for” and therefore something that is threatening the illusion of the simulation. This does not mean that Nurse 2’s remark is completely out of place. The specific circumstances of its production allow it to be understood as a joking comment about the institutional context of the simulation, seen in how a general laughter erupts in the participants and the audience. The return to the medical practices of the simulation, i.e. the return to the topic of proper intensive care medicine is something that accountably “overrides” the joking and laughter that erupts as a result of Nurse 2’s comments. The idea of the simulation as an interactive illusion that the participants should strive to uphold acts as a kind of “beacon” in that the participants orient toward it in their interactions. It functions as a normative requirement of the simulation, and any breach of this requirement can be duly sanctioned. As a premise for this study, it was stated that the participants themselves manage their local accountable order. This management entails to keep the simulation as “authentic as possible, while at the same time keeping it a serious and educational setting”.

**Understanding these simulations as activities in and for themselves: achieving the borders of the simulation**

Looking at prior simulation research (e.g. Feinstein & Cannon, 2001), a common premise to most of them is that they consider the link between the simulation and that that is being simulated as *a priori*. This allows analysts to claim that some aspects of simulation are not “proper medical work”.

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They fail to recognize that simulation can be understood as an activity in and for itself\textsuperscript{59}. Looking at for example Feinstein & Cannon, (Ibid) or Liu et al. (2003) it can be seen that simulations are always related \textit{theoretically} to the activity that they are a simulation of. But relating the simulans to the simulandum does not solely have to be a theoretically induced project of the research. This leaves the participants’ own understandings of their situation out of the equation. Sure enough, as has been demonstrated on multiple occasions in this text, participants do relate actions in the simulation to what they are regularly doing in their everyday practicing of medicine. But this relation between simulans and simulandum can also be studied as \textit{a relating} by the participants of specific events to other specific properties of their normal work, and not a \textit{theoretical relation} between one practice and the other\textsuperscript{60}. What the previous empirical sections demonstrate is the simulation as a local accountable order, concertedly attended to and reflexively worked out. This order is a real and witnessable fact of the simulation, which the participants are accountable to during the simulation’s runtime.

**Negotiating the borders of the simulation**

The ongoing conversation in the simulation of course serves many purposes, but the one relevant for this study is that it is the primary arena for achieving the borders of the simulation. Many kinds of activities take place in these simulations, but it is apparent that some of these activities are not what the participants are supposed to be doing. It is in the negotiations of what actions are proper and what are not that the borders of the simulation are achieved, in the sense that they are made up as accountable facts of the simulation-session. The reader is advised to not reify the concept of “border” or “limit” of the simulation. It should be seen as a handy abstraction of the participants’ ongoing negotiation of the meaning of their situation, and how they interactionally achieve the idea that they normally should be doing medical work in the simulation.

Neither should these borders be thought of as permanent structures of the participants’ interactions. It is not given once and for all what actions should be deemed proper, as these borders are \textit{ongoing, ad hoc} achievements. Imposing sanctions on a certain action is done turn-by-turn, and an action might be proper in one turn and sanctioned in the next. In the excerpt “overplay as breach in the simulation” (on page 95) the glitch in the simulation revealed by Nurse

\textsuperscript{59} What would be called a \textit{primary frame} in Goffman’s, 1986, pp. 21 - 39, terms.

\textsuperscript{60} Even though models of such theoretical relations might be used by the participants in understanding their situation.
2’s “overplay” is used as a way of commenting on the regular workings of the hospital, and forcefully accepted by one of her colleagues (“it's true though”). It is, however, through Nurse 2 uttering “that was drama” also accounted for as overplay and hence not part of what they are supposed to do in the simulation. For short periods of time, these glitches are accepted and even endorsed (such as the whole team laughing in the excerpt “a failed attempt to minimize topic switches in face of glitches”, on page 88), but eventually some interactional device will be used to put the interaction back on the proper track once again. In the present case, the collaborative work of Nurse 2’s uttering “that was drama” and Nurse 1 talking about medical procedures sets this as the next topic.

It would then be hard to argue that such exposure of the difference between regular intensive care practice and intensive care practice in the simulation is something that hinders a “correct” simulation. As has been demonstrated, these events provide opportunities for the members to explain (and learn) what is to be called the “correct” and “proper” way of doing this simulation. In the excerpt “minimizing topic switches in face of glitches” (on page 81), Nurse 2 and the Doctor’s interaction are at once an exposure of a breach between the present and the regular practice as well as an attempt to keep that glitch to a minimum and return the simulation to its proper track. It is also evident from the Doctor’s gestures that the need to invent an excuse to explain his lack of information is a glitch in itself, something that is a disruption of the proper unfolding of the simulation-session, and therefore something that stands in need of excuse or explanation (specifically, the doctor turning around, smiling and shrugging his shoulders as if being caught with a lie, see page 84).

**Formulating temporal and spatial borders of the simulation**

Temporally there are, as we have seen, starting and ending-points to the simulation. The interactional availability of these markers for the onset and finish of the simulation gives prudence to the idea of interactionally managed borders of the simulation. Marking in clear ways the start and end of the simulation also allows the participants to see the simulation as a distinct activity separate from doing other types of work. Importantly, the excerpts “initiating the simulation on the proper topic” (on page 66) and “establishing an ending of the simulation” (on page 101) show that setting up these temporal borders is a concern for the participants, and something that is an achievement in the sense that it requires work on the part of the interactants. The sense of these borders is an oriented-to fact of the simulation, and this is quite evident from the excerpts. In both instances the participants accountably act in different ways post and prior to these points.
Utterances and actions that are accounted for as transgressive while doing the simulation are not after the demonstrated ending of the simulation-session.

It is shown in the excerpts how the start and ending of the session is a collaborative, step-by-step affair. Participants orient to that it is not just themselves that have to attend to the start or finish of the session, but also that this has to be communicated to the rest of the team and demonstrated for the crew and audience. In the excerpts this study has shown has this is accomplished through various interactional-semiotic devices. These include placement and movement in the room, bodily orientation and talk. All this is performed in “so many words”: even though formal markers of ending, such as “that’s good everyone” are uttered, in order for these to become interactionally significant conversational moves they need to be reciprocally attended to (something that in sequential turn needs to be communicated). That is, even though an ending-marker has been issued; if the participants do not stop doing the medical work that they were doing previously the simulation has in fact not ended. That someone has not acknowledged the ending of the simulation is instead taken as an interaction problem to be solved by further negotiations, as is exemplified in the excerpt on page 105.

Spatial borders are also a concern for the participants. This includes not only the issue of confining the simulation to the present room, but also in negotiating what should be counted as “inside” and “outside” the simulation. A prevalent example is that of how to attend to the fact that there are 4-8 people in an audience to the simulation, including the crew of the simulator, the rest of the team’s study-group colleagues, myself and sometimes other onlookers as well.

As seen, it is an attended-to concern of the participants to keep the simulation as real as possible. Keeping in line with this, they try to stay clear of directly addressing the audience. The audience, however, does not always keep this in mind, but instead comments more or less freely the goings-on in the simulation (either whispering to each other but also as outspoken suggestions for diagnosis or procedures to the team).

As the team generally tries to keep up the fidelity of the simulation, thus often ruling out direct addresses, utterances from team-members do sometimes occasion further interactions between team and audience. One such example is from the excerpt “overplay as breach in the simulation” (page 94), where the comment “fucking idiots” made by nurse 2 causes a general outburst of laughter in the audience, exchanging glances between team-members (such as Auxiliary Nurse 1) and members of the audience, as well as between the crew and audience.
Likewise, in the excerpt “minimizing topic switches in face of glitches” (on page 81), it is the
dialogue between Nurse 2 and the Doctor that occasions his quick swivel to face the audience,
smiling and briefly laughing, before turning back towards Nurse 2, continuing his excuse. It is
through Nurse 2 breaching the frame of the simulation by exposing the doctor’s lack of knowledge
as less-than-regular that the doctor finds the opportunity to demonstrate to the audience that this
is not a concern purely for the acting team, but that this break of frame is something available to
the audience as well as an obvious glitch of the simulation. At this time, it is taken as something
funny and a laughable matter, and also something in need of some sort of mitigating “excuse”.

It is at these junctures in the simulation that the participants reformulate the scope of interactions
available to them, and thus the borders of the simulation itself. Doing the “regular medical practice
in the simulation” does not include attending in any prolonged way to the audience, something
that lies outside of this activity. An action or utterance that breaks this frame in some way
reflexively changes this activity into one where the team-members allow themselves to act in ways
that previous to this point could be taken as frame-breaking in themselves, and therefore
something that the team at most times tries to stay clear of. Once the break has been mutually
achieved and the glitch concertedly attended to, it is no longer necessary to “keep up the
appearance” of the simulation as “real for all practical purposes”. A frame-breaking utterance
contributes towards (as a first interactional step) the temporary reformulation of the borders of the
simulation as to include elements that prior to this should be left outside of them. The interactive
illusion of the simulation is momentarily suspended.

**Pedagogical aspects of simulator studies**

If the simulations’ relation to the simulated practice is reflexively established in and as momentary,
sequential accounts, this also reformulates some of the things that can be said of the pedagogical
aspects of these simulations. Because the participants on occasion accountably treat the simulation
as an activity separate from their professional practice, and that they treat the simulation as a
situation that should be kept as authentic as possible, something can be stated as to how they learn
how to uphold the simulation as “real for all practical purposes”. This discussion will leave aside
what the team is learning about medical practices, but instead say something about how they learn
to do simulations.

It is apparent from looking at the simulation-sessions (which with almost no exception is a first
time try in a high-fidelity intensive care simulator for the nurses and assistant nurses present) that
proper work in this simulation is something that is not predetermined prior to the onset of the
session. Rather, the introduction to the simulation that the team partake in before the onset of the session does not make them prepared for every incongruence between this activity and their regular work practice that come in their way. Looking at how they react to events in the simulation from an ethnomethodological and conversation analytical perspective, it can be understood that the “sense” of every utterance (if it is a proper thing to say in the simulation; if it could be said in regular practice; if it is said “inside” or “outside” the frame of the situation etc.) is determined by a proximal sequential action. Determining the fidelity of some action can, following the line of reasoning regarding proof-procedure in conversation analysis (Sacks et al., 1974), be done through examining its sequential and interactional import to the conversation.

If some event, like Nurse 1 and the rest of the team making fun of the patient’s English speech (in the excerpt “a failed attempt to minimize topic switches in face of glitches, on page 88) in the end is determined to be outside of “what we are here to do” it can be seen that the participants have made this a relevant fact of the conversation, that this topic has been added to all the preceding topics-of-the-conversation-so-far and (crucially) that this fact can be used as a means for criticism in later occurrences of the same sort of event (sameness naturally determined in situ by the participants themselves).

Doing “just as we normally do”, is something that is an ongoing negotiation, and something that can be used to different effects, and to fulfill different ends. When the rest of the team calls for Nurse 1 to do “as you usually do” (in the example on page 25) this is something that makes relevant the objective aspects of their work. Doing something as it is usually done is not, in this case, something that is open to negotiation and not something that should be unfamiliar to a competent nurse. Saying that Nurse 1 should do “as you normally do” is done in order to make her understand actions and utterances in the same way as she would in her regular work practice. This then places certain normative constraints upon the situation, that events should be understood in this and not that way.

In the case of the non-appearing doctor (example on page 86) it is made apparent that the team is in fact doing “just as we normally do”, but that it is the workings of the simulation that are faulted. When, in one case (page 25), the doctor’s failure to appear was shown to still be within accepted time limits, and that the team therefore should continue doing “what they usually do” (in that not doing so would constitute a breach of the simulation), the second case (page 86) shows that keeping in line with regular procedures (including displaying anxiety and worry over the situation) is preferred over some team member taking matters into his or her own hands. The doctor’s
delayed arrival is instead worked up into being a breach blamable on the configuration of the simulation, as shown in that the Game Master tries to resolve the situation through checking the phone, making calls etc. That Nurse 1 can place the responsibility of the medically dangerous situation on the simulation at the same time makes it an accountable fact that she cannot be blamed for it.

Trying to understand simulating as an activity in its own right, that is not dependent on some other activity for its intelligibility, it is a discovery of this study that the members have refined methods for understanding and learning how to cope with this situation in itself. If the nurses are discussing what procedures can and cannot be performed on the mannequin (in what ways it is different from a real patient, as in the excerpt “making sure the team is doing ‘what we are here to do’”, on page 74) this should not necessarily be taken as a bad thing for the simulation. Instead, through one nurse making it an accountable fact that for this purpose the mannequin is “as real as is required” this becomes an opportunity for the members to acquire new methods for understanding their situation.

Through participants’ making the problems that arise in the simulation the topic of their conversation, members learn how to deal with these problems in new ways. This study does not have the means (nor the interest) in saying something about the efficiency of this pedagogy of conducting proper medical work in the simulation, but explicating these immanent pedagogies of work is an important point for ethnomethodology and for a concrete, non-theoretical understanding of the workings of this, and perhaps similar, situations.

There is an underlying notion in the discussion in fidelity simulations (such as Dieckmann et al., 2003, as well as in the marketing for the simulators) that a “break of frame” or a transgression of the line of proper actions in the simulation is necessarily a bad thing to be avoided at all (or at least high) costs. This, however, also fails to recognize the various methods the participants have for making it an accountable and unavoidable fact of the situation that they are doing transgressional activities, and that these activities are in fact something that they are not supposed to do (something that differs from “what-we-came-here-to-do”).

On the issue of the pedagogy of doing a “proper” simulation, it can be seen that participants continuously display, as proximal sequential actions, that someone has or has not understood the “rules” of conducting a proper simulation (such as in the excerpt “making sure the team is doing ‘what we are here to do’”, on page 74). These rules are far from clear-cut, and vary enormously according to the contingencies of the actual situations. In each case, the participants use local
accounting practices for making some aspect of the simulation an oriented-to fact. Displaying that someone has misunderstood the premises of the simulation is something that at the same time can constitute a frame-breaking activity, in need of remedies and repairs. It is through these transgressional events that the participants reflexively negotiate the borders and rules of the simulations, and therefore gives them opportunity to change their future behavior accordingly. Negotiating and achieving the borders of the simulation is displaying an immanent pedagogy of conducting this simulation in a proper way. Whatever else they might be learning of procedural, conceptual and CRM-skills, they are also learning how to do a proper simulation. They are learning that the authenticity of the simulation is a local and accountable fact of doing that simulation.

**A final word**

It is time to summarize this thesis. If it has been read in the intended way, the reader should leave with an enlightened view of what might constitute a medical, full scale, hi fidelity simulation. It is one thing to trust vendors, purchasers and journalists when they claim that all is well in simulator-land, and that the benefits of simulators quickly pay for their hefty prices. To some extent they may be right, and high fidelity medical simulations does provide intriguing pedagogical possibilities.

It is one thing to take the various scientific accounts of what goes on in simulations, of level of fidelity, immersion and presence at face value. It is another thing, however, to take a closer look on the details, the “what more” of specific simulations and try to understand them in the way that those participating in them accountably understand them. What this study shows is that these simulations were a lot more messy and chaotic than what a glossy brochure would have you believe, but also that they provide for their own sort of immanent stability. The social order of these simulations is a very complicated affair from an analytical point of view, but the participants can also be seen to be carefully negotiating the meaning of their situation. This study should have shown that simulations might be understood on their own terms, and instead of relying on a congruence model of the relation between simulans and simulandum, the understanding of simulation practice can be furthered through taking the participants view on things. If this study has shown that what a simulation constitutes is not at all times best understood as a permanent fixture that can be examined through traditional scientific methods, but something that can be seen as immanent in, and reflexive of, the behavior of those participating in it, something original has been achieved.
References


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**Elektronic References**


## Appendix I: Transcription

Example of “tabulature” transcription. Bold text denotes an utterance.

<table>
<thead>
<tr>
<th>Deltagare / tid</th>
<th>1146</th>
<th>1147</th>
<th>1148</th>
<th>1149</th>
<th>1150</th>
<th>1151</th>
<th>1152</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSK1</td>
<td>Tittar ner mot dockan, stäcker sig över den</td>
<td>Tittar mot USK1</td>
<td>Tittar ner</td>
<td>Vänder sig bakåt mot USK1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SSK2</td>
<td>Tittar ner</td>
<td>Tittar upp</td>
<td>Leelandes mot USK1</td>
<td>Tittar ner</td>
<td>Sibarle</td>
<td>Tittar upp på USK1, sammanslutet</td>
<td></td>
</tr>
<tr>
<td>USK1</td>
<td>Går bort från singen, leelandes</td>
<td>Hade inte tid om mot singen,</td>
<td>Vänder tillbaka mot singen,</td>
<td>Tittar mot SSK1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doktor</td>
<td>Böjd mot singen, leelandes</td>
<td>Nu ställa sig</td>
<td>Sätter i ventilenet,</td>
<td>Tungt att ut spreja</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Docka</td>
<td>You gotta help</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Appendix II: Translated transcription

Example of translated “tabulature” transcription. Bold text denotes an utterance.

<table>
<thead>
<tr>
<th>Participant</th>
<th>1146</th>
<th>1147</th>
<th>1148</th>
<th>1149</th>
<th>1150</th>
<th>1151</th>
<th>1152</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurse 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>You guys I think we-I think we’re gonna do a catheter here</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Looks down on the mannequin, leans over it</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nurse 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Looks down smiling</td>
<td>Looks up</td>
<td>Stares towards Aux. Nurse 1</td>
<td>Looks down</td>
<td>Stop smiling</td>
<td>Looks up at Nurse 1, stern look</td>
<td></td>
</tr>
<tr>
<td>Aux. Nurse 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Moves away from the bed, smiling</td>
<td>Turns halfway around towards the bed, picks something up from the table</td>
<td>Turns back towards the bed, on the other side of Nurse 1</td>
<td>Looks at Nurse 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doctor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Leaning over the bed, smiling</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mannequin</td>
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<td>You gotta help</td>
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Appendix III: Letter to participants

Hej!

Det här är ett informationsbrev angående ett forskningsprojekt som jag hoppas kunna genomföra på Sjukhuset i Staden..

Jag heter Björn Sjöblom, och studerar kognitionsvetenskap och kommunikationsvetenskap på Linköpings Universitet. Det här projektet kommer att utgöra min magisteruppsats i kognitionsvetenskap, och det här brevet är till för att ni ska vara informerade om mitt uppsatsarbete och kunna ta ställning till er egen medverkan i det.

Det jag vill göra är att studera lärandesituationen kring en medicinsk simulator. Den metod som jag kommer att använda för detta är att använda de videoupptagningar som görs av simuleringarna, samt att videofilma den debriefing som sker efteråt. Dessa videoupptagningar kommer sedan att transkriberas, d.v.s. det som sägs och görs kommer att skivas ner på en ganska detaljerad nivå. I ett andra steg kommer dessa transkriptioner att analyseras för att undersöka hur deltagarna i simuleringen organiserar sitt arbete, och hur man under debriefingen diskuterar vad man lärt sig och det arbete som man utfört.

Min egen roll under simuleringarna kommer endast att vara som observatör för att bättre förstå vad som händer, och för att sköta inspelningsutrustningen, dels de kameror som ingår i simuleringssituationen och dels en extern videokamera och mikrofon. Det material som jag samlar in kommer att behandlas med diskretion. Detta betyder att ni som deltar inte kommer att förekomma med namn i uppsatsen. Materialet kommer endast att visas i akademiska sammanhang, d.v.s. visas för mina handledare och så som del av min uppsats. Mina handledare är Hans Rystedt (vårdhögskolan i Trollhättan och Göteborgs universitet) och Oskar Lindwall (Göteborgs Universitet).

Den forskning som jag kommer att utföra är inte på något sätt utvärderande. Detta innebär att jag inte kommer att se på det som händer i simuleringssituationen och under debriefingen som bra eller dåligt. För det första så ligger detta inte inom mitt eget forskningsintresse, och för det andra så har jag ingen medicinsk utbildning som skulle kunna låta mig se på det som händer som bättre eller sämre. Mått fokus ligger helt och hållet på hur lärandet och simuleringarna organiseras av de som deltar i dem.


Med vänliga hälsningar

Björn Sjöblom
Sammanfattning

Simulators provide great promises of pedagogical utility in a wide array of practices. This study focuses on the use of a full-scale mannequin simulator in training of personnel at an intensive care unit at a Swedish hospital. In medicine, simulators are a means of doing realistic training without risks for the patient. Simulators for use in intensive care medicine are built to resemble as closely as possible the human physiology. In the studied sessions the simulator (a Laerdal SimMan) is set up to be an as-authentic-as-possible replication of the nurses regular, day-to-day practice.

In examining the training-sessions, it was found that the participants often did other things than “proper” simulation, such as joking or making comments about the simulation. These “transgressional activities” were studied from a perspective of ethnomethodology, using video-recordings of the session. These were transcribed and analyzed in detail using ethnomethodologically informed interaction analysis.

Several themes were developed from the recordings and transcripts. These have in common that they demonstrate the participants’ own achievement and maintenance of the simulation as a distinct activity. The analysis provides an account of how the local order of the simulation is upheld, how it is breached and how the participants find their way back into doing “proper” simulation. It is an overview of the interactional methods that participants utilize to accomplish the simulation as a simulation.

This study concludes with a discussion of how this study can provide a more nuanced view of simulations, in particular the relation between simulated and “real” practices. Notions of realism, authenticity and fidelity in simulations can all be seen to be the participants’ own concern, which informs their activities in the simulation.

Nyckelord
Ethnomethodology, Conversation analysis, Interaction analysis, Simulation, Intensive care, Fidelity, Immersion