Finding one's way by the drawing of patterned relationships

Erik Boström

???Affiliation???

Abstract

This study employs Harold Garfinkel's and Karl Deutsch's notion that information is used in and as patterned relationships between events as a guide for following how students and teachers work out their emerging focus over nine months of doing school science projects in an upper secondary school. Excerpts are taken from seminar and tutoring talks, and sequentially related to their writing up of texts to be used in their upcoming reports. The students fill in constitutive blanks with more information through inferences from the teachers' partial instructions, methodically present as questions for the purpose of enabling the students to go on. These patterned relationships between events, things the students are supposed to do in a specific order, in trying to locate these things within what Garfinkel calls a system of expectations, both organize and produce their work of making and describing the coherence of these 'ordinary things to do' in a figurational contexture. In trying to work out the sense of the teachers' reproducible descriptions in their own instructed actions, the students use patterning between events as a resource for achieving common understanding. It can be heard by the students that the teacher's descriptions involve their attention to certain aspects in order to fill in detail for the description provided, as may be necessary for the practical purposes, for which an understanding of the description may be attempted. At the same time, there is a reflexive elaboration of the meaning of the teacher's original descriptors, as a result of the contextual filling in now effected. This kind of reflexive redetermination of meaning, done through the interplay of patterned relationships and anticipatory properties that define possible events, as inferred and used by the students is information in Garfinkel's sociological approach, or rather, what information as reflexive re-ordering of the sequential coherence of their events is made by and used for. Gradually, the relations and meanings dawns upon them and the students achieve a responsive understanding of an interactionally shared local gestalt contexture, which finally gets objectivised together with the teacher as 'it is falling into place'. This paper depicts the terms in which students assemble their work into a coherent whole by developing familiarity with details.

INTRODUCTION

''How should I do this project work?' was a question I was confronted with almost every day when I was working as a librarian in an upper secondary school. It took some time to develop a useful answer. We were often talking about an aspect of the fuzziness of an emergent project, a transitional formation to which our production and understanding of talk orientated. I noticed a tension, from my position somewhere in-between, that the students and the teachers did not seem to be talking about the same thing, although working on the same formal course. It always amazed me that the students were able to get it together in the end.

How do they assemble their work? The students repeatedly asked me how they should do it. The teachers often asked me if I thought the students got it, especially if I attended some instructions and discussion. I couldn't tell. A standard answer was in terms of 'let's see about that next time', as if their work was of a certain reflexive kind, needed to accomplish whatever they got out of the partial instructions they found in the answers to their questions. I started to wonder how they over time came to a reciprocal understanding, through a dialogue based on assumptions about each other, what they as students and teachers could possibly mean, and how they thereby made sense of it through doing their work. The pattern wasn't that clear to me, but over several occasions, although most of what is said and done is forgotten, some of the relationships in the students' work became more intensified and concrete, and in the end, as a part of a coherent whole, the relationships became transparent, or only came to the fore when made practically relevant. I wanted to describe how the interplay of these questions and answers, assumptions and anticipations in use, are worked out over their course to establish some relationships, which seemed to be more generally expected to be there, to make their work describable and recognisable, and in turn, seemed to be used for putting it all together. Certain recurrent, generic, systemic parts needed to be done in a certain order, for the students to be able to get to their own point – what the figure in their work is.

Someone the students turn to for guidance – their supervisor, another teacher or a librarian – often perceives their questions as being typical and partly recognisable, as being of a more general kind associated with this kind of school work. In this way, the teacher or librarian also refer to aspects expected or presupposed to be known by doing this sort of school science projects. In turn, the students have to guess at what kind of general, typical patterns and standards they now are being held to, while nonetheless being held responsible for meeting those standards.

As their objects and those standards are carried out and realised through interaction, my search started to appear abstract: To reveal how such interactional structures reflexively are turned into relationships between events, which the participants use as information on what is going on; or, if you do know these patterns, standards and their relationships, then you are informed. But isn't that obvious? Everybody knows how to do this kind of school work?! The point is, apparently not everybody knows this, and the participants in this study particularly put a lot of communicative effort into checking if

they are on the same page. This only appears obvious at some distance to someone who already knows these standards and therefore makes assumptions that everybody else also knows this. To the students, that is rather trying to ascertain two sides. They both need to get some kind of investigation done, and at the same time, through it, find out which aspects dawning through talking and, by writing about their developing school science projects, discover which of these aspects they will have to relate to in a report. The teachers' methodical ways of giving instructions, often as partial questions with anticipatory references, to this or these next 'things' they will now have to do, provides a mutually constitutive organisation of their activities.

Although not theoretically conceived, this study was not performed in a void. It is close to Lilja's (2012) ethnographic study of the use of inquiry in a Swedish upper secondary school, and to Åberg's (2015) study of how school projects organised around problems that do not have a straightforward solution are practically and interactionally accomplished. Within the area of information studies, it is close to Watson and Carlin's (2012) claim that information studies has to work with examples and focus on the organisation of information into communicative interactions along with its particularisation procedures. Finally, this study is also close to Ikeya's (2020) argument that information studies and studies of work will have to deal with any relevant topic as they emerge in the setting and the researcher does not narrow down the analytical focus for methodological reasons.

The intellectual backdrop of Watson and Carlin's, and Ikeya's, arguments is a sociological tradition where epistemic objects and social actors are seen as the result of their practices. There, I find Garfinkel's (2008) use of Karl Deutsch's notion that information is done in and as *patterned relationships between events* to be a suitable guide for following how the participants work out their emerging focus over the course of the study. The normality of their events is a function of their presuppositions that define possible events (Garfinkel 1963:198), and to perceive their emerging objects, they have to locate them within their developing system of expectations (Garfinkel 2008, 141), where a background assumption is generated by the activity of accounting for an action when the premise of the action is called into question. These presuppositions and expectations are related to Gurwitsch's (1964) field coherence approach, that anticipations pervading and permeating their interactional work are not to be construed as 'empty' expectancies, as expectancies of anything whatsoever, but rather as expectancies of something which, however indefinite, fits into a certain pattern and conforms to certain conditions of style, type, and organisation (Gurwitsch 1964, 274). So, how they make and reflexively use such presupposed patterned relationships between their events, things the students have to do in a specific order, is the focus of this study.

HOW QUESTIONS FIND ANSWERS

Macbeth (2001) argues that the reflexivity of educational and other everyday settings is an endogenous relativism: It is heard in a first whose second is called for, and every

present turn instructs what it calls for next. These occasioned sequences instruct what happens. Garfinkel's argument is that there are socially patterned relationships between these events. Although being socially graspable, an 'outsider', as a researcher, cannot by herself make privileged observations or reflections (Lynch 2000a).

Students, teachers and eventual researchers are as engaged participants alike in being caught up in their ongoing practical analysis of what is coming up next, afterwards found in their ordinary talk and practical writing. Researchers often describe how they got access to a phenomenon. From an inside-out perspective, you rather do stuff first, and then come upon trying to catch or describe phenomena. These are more often found by students' and teachers' comments, questions, or other reflections, than by starting off with any that clear initial focus. The language teacher in this study and I both had an interest in how collaborative writing in tools like Google Docs may be used as a part of students doing projects. A coordinator of a network of practitioners recognised this interest and paired us together. The teacher generously invited me to study how they do projects at her school. I thought that if we record what we are saying and sequentially add the related writing from the log function of the documents over the 9 months their school science projects went on, then we could see or learn something from within how we do this.

Doing this kind of ethnography is like the second part of Wieder's book on the convict code: There are certain ways of saying and relating which make up social relationships instructing actions or interaction, and these go together in and as practical relevancies and significances in a gestalt contexture. It is in the analysis of this referential contexture that the reflexive character of accounts can be seen. Our perception or analysis that members are acting in patterned and motivationally coherent ways is dependent on an instructed seeing of those ways of behaving. The 'instruction' is accomplished from within a setting for an observer who attends to the ways that members talk about their affairs. The mutual dependencies and determination of the parts of a gestalt contexture are apparent in the ways that attending to someone's talk as 'instruction' is itself dependent on seeing, in actual perception, the referential objects of their talk for that talk to be identified as a 'course of instruction' and identified for its specific sense (Wieder 1974, 189).

This study follows some teachers' questions by which students are to use a kind of abductive 'best guess' reasoning to come up with how they are to do patterned relationships between events – specific things to do in a certain order, doings they in ordinary talk assemble under headings like question, hypothesis, method, problem, analysis, etc. Reflexively they use these relationships to reason with and account for what they are doing, to be able to go on recognising and identifying which the next relations and activities are, which one as a competent participant is supposed to do.

Macbeth (2011:441) asks a simple question: "How do classroom questions find answers?", and relates this to Garfinkel's observation, that common understanding is an operation rather than a common intersection of overlapping sets (1967, 30). Following how questions find their answers is to study the organizational resources used by participants, in Garfinkel's and Macbeth's sense of them doing that as operations for

assembling the sense of related events. So, I take it, with his expression 'patterned relationships between events', Garfinkel seems to mean that we have and use social patterns for how related events may lead to, or fail to lead to, common understandings. Macbeth's exhibits focus on the routine grounds of classroom instruction, the social production of the lesson's object; e.g. sequence organises the novice's tasks of understanding within sequential-organisational fields that can be seen and grasped in ways that permit the novice to 'go on'; making them go beyond what they know, by what they by ordinary resources as questions can be made to do (2011, 446).

The greatest difference between Macbeth's (2011) exhibits and those in this study is the difference in time span between the asking of a question and the time students need doing something competently in line with and circumscribed by the teachers' questions. Macbeth follows how this is done at a turn by turn, utterance-level in lessons with younger students. In this study, the students often both need to do work in their own investigations, 'out there' as they say, and write about how it went, or do some other kind of reflections on their work, maybe discuss related aspects over several tutoring sessions, before being near anything close to an 'answer' to a question asked by a teacher weeks ago. But what is important is that at the primordial social level, it works in similar ways, as in Macbeth's exhibits; e.g. a delayed reply by the teacher is heard by the students as they are failing in the social production of orienting to the 'same' object.

The time or pace of students working out their inferences, from the management of anomalies in interaction, which in Garfinkel's approach indicates higher information content is a different perspective than the usual in interactions studies, but it is adequate to the local organisation of how they do these school science projects. The noticing or saliency making the participants attuned to their socially shared objects is, as Gurwitsch says, both a rudimentary and a self-organizing feature of experience; a rough, transient, and primitive organization emerging from an otherwise inarticulate field. Still, it is a form of organization not bestowed upon, but exhibited by, experience (Gurwitsch 2010, 29). What initially caught my interest, the everyday observation from a position in-between, that teachers and students didn't seem to be talking about the same 'things' when doing these kind of projects, turned out to depend on the students trying to work out inferences that might be found in teachers' instructions, methodically posed as question to make them go on.

Discussions runs smoothly if the presupposed order of doing these 'things' is heard by the teacher as turning out as expected, but when not heard that way, there are more specific questions or other communicative efforts to settle things again. This does not mean that the teacher, or I as participant librarian/researcher, have a clear idea about what the students are up to or heading. We also search for and try to identify what and how they are doing in the accounts they give during seminars and tutoring sessions. This runs over several occasions and is partly done by students trying to write drafts of parts to be used in the students' upcoming reports, and the teachers write remarks on all this too. How these 'parts' are to be turned into instructed actions is searched for by the students in the teachers' reproducible descriptions.

Sometimes, our searching gets in our way and we are not able to recognise and identify the 'same' figurationally organised objects and their relations. This usually makes the teachers do questions and descriptions on some thematic relations the students can go on and work on, and hopefully by doing that, get what it is we are doing and talking about here; i.e. the meaning of 'problem' or 'purpose' is found out afterwards by students following teachers' partial, reproducible descriptions. The excerpts chosen are examples of when our searching is getting in our way in trying to coordinate what next to orient to, if what the students are saying can be heard by the teacher as reflexive accounts with good continuations. According to Garfinkel's (2008) approach, an increase in unexpectedness or anomaly indicates higher information content. Working from Gurwitsch's (2010) gestalt coherence field approach, Garfinkel (2008) argued that anomalies can only appear against a background of patterned order; without a background of order, there is only noise – no anomaly, and no information. You do not need to conduct a breaching experiment to show that there is a system of expectations; it happens ordinarily, as Garfinkel suggested in his article on trust, in the teaching of novices. This system of expectations is not 'about learning a scientific genre or literacy', it is the ongoing pattering of social events with no time out which underwrites and makes possible to go on doing this kind of school projects in the first place.

What the students do with the teachers' instructions is a kind of inferences like abduction. Schurz (2008:204) argue that the essential function of abductions is their role as search strategies which tell us which explanatory conjecture we should set out first to further inquiry. This is in line with participants sequential organisation of information, so, when I in this study write about their searching, it is in the sense of them looking out for 'the next next', trying to infer which objects and relations they are now to orient towards. Observed facts do not in themselves contain any practical knowledge but needs to be related into a local gestalt contexture (Gurwitsch 2010, Wieder 1974, Watson 2009a&b). These patterned relationships, as inferred and used, is information in Garfinkel's sociological approach.

Any inference which involves contextual judgements of relevance and significance has an abductive element. Peirce argued, in relation to his work onw abductions, that logic is concerned with the informational productivity of inferences, that is, whether or not they contribute new ideas, exceeding the information which is implied by the premises (Svennevig 2001). A sociological notion of information as patterned relationships between events is specific and vague enough to allow for this kind of change, opening for the possible informational productivity of something new. In this sense, Garfinkel tries to adequately describe the way affairs are open to participants, much like Moerman's (1987, 180) 'the events that pass or fail to pass as understanding'. In this study, that the teachers only give partial instructions, mostly by questions, is a practice for making the students infer patterned relationships through a sequential contexture of events, until an achieved familiarity of detail (Garfinkel 2002, 216) is heard by the teacher, and she then lets them finish their projects by themselves.

SETTING

The students and teachers call what they are doing 'project work', a short version of the formal name of the course, but what is going on in these discussions may in the simplest sense be characterised as supervision of an upper secondary school science project conducted over nine months. This focus was worked out through pilot studies with one of the teachers, and students from a grade earlier than those in this study. They advised me to focus on longer projects, rather than the shorter ones I could participate in then, because there it is more practically relevant for them to assess and give reasons for how students do their work. The point is not that you get a more adequate description just by carrying out a longer ethnographic study, but what they meant was that these supervision talks were some of the few occasions where I could get continual, repeated access to how they themselves actually formulate, make relevant, and assemble parts into their work. Any experienced supervisor could recognise similar occasions, like those in the excerpts, also happening over a course of a few weeks, if the students are working full time on a project.

In this study, their work and talk are spread out over two terms, meeting for supervision on average every second or third week, with their supervisions lasting up to 45 minutes. I followed two groups, age 17-18, one with two males and a female, and another group with three female students. In the first excerpt on posing questions and delineating the issue, there is a natural science teacher leading a half-class discussion, and in the following excerpts there is a language teacher supervising the two groups separately.

Most of their work is carried out using practical texts (Watson 2009a), such as checklists, logbooks or diaries, outlined parts for their reports, etc. They have to orient to relations between actual events and the prospective use of selected aspects of reported events, especially what sense there is to be made in relation to these events and how to provide 'objective' accounts (cf. Meehan 1997). This makes them often read and comment on their texts, and thereby recreate the organisation of their work, both in a retrospective sense – how they view and may express their findings or, what they talk about as 'insights' – and in a prospective sense – how the students' work somehow always is preformed within a framework of sense that is presupposed to already be at least partly known or possible to infer from what is happening, but as will be shown in the excerpts, not always a sense shared by all participants.

The main part of this study is simplified excerpts of teachers and students, showing how they create patterned relationships between presupposed parts that basically are events, some 'things' of a more general character in a specific order that they are supposed to do. As these are worked out, in terms of how these parts may be combined or assembled through their activities, this ultimately makes the students 'see' what their goal object consisted of; what the point and figure in their work is.

Although their lived personal experience is needed to do their work in detail, the focus here, in line with Garfinkel's (2008) approach to information, is on situated actors and relationships between their events, and not primarily on their individual interests or

intentions. It is rather shown how their interests become socialised through this practice in situ. What the students initially want to achieve, 'out there' as they say, is for both groups along the theme of creating more engaging educational practices. One group is designing an environmental game for younger children, and the other group use film clips as found on YouTube to help younger pupils to achieve pass in elementary mathematics.

A NOTE ON TRANSCRIPTION

The excerpts are in simplified transcription (Linell 2011, 156) and translated from Swedish.

(.) is a shorter pause, (…) a longer pause, [indicates when two persons speak at the same time, [ ] indicates when something is to be heard in a specific way – e.g. [reads] or [lower to someone else].

POSING QUESTIONS AND DELINEATING THE ISSUE

This first excerpt comes from an early September seminar where the students are 'framing their questions', right at the beginning of their science project. They express that it is unclear to them, as participants, quite how they are to do it. Lack of clarity is also repeatedly expressed regarding precisely what their discussions are heading towards. Therefore, it is hard for them to achieve a shared directional sense of a practical purpose for understanding what is going on. This way of starting to formulate their questions seems also to be a way to create the movement to get their questions related to in the right order, how they are to pattern the relationships between events of this practice. It is hard to follow, as it is something done in and through this practice, and not done as something reflected on as 'of or about this practice', except when the teacher gives the students more general descriptions, such as questions with partial instructions.

The discussion revolves largely around the Swedish word *frågeställning*, which is often understood as being a set of questions, but it can also be heard as coming from *att ställa en fråga* 'to pose a question'. The whole activity appears as posing and relating questions to what is found to be a vague or absent set of questions. Lack of clarity is recurrently articulated and often gets related to next steps, in terms of how to go on. Even though a set of questions is built up of interrelated objects, an everyday word use is often in the singular, as the formulation of a question *(frågeställningen)*. It may be understood as, not exactly but very similar to, the English word 'issue', and I choose to translate their activity as delineating the issue. Here Nina is trying to start the discussion by picking an outlined issue from another group:

```
Nina:    should we take that one (.) hm (...) the last one Mona's
         Dinha's and Ann's [reads] how much can the small changes in
         the brochure have an influence on the environment? (...)
```

should I start asking a question? I do not quite get it, how it is done?

Teacher: we are going to discuss how the issue is formulated (.) if it is good (.) could one change it (.) is something wrong and suchlike (...)

Nina: okay (.) should I start (.) my first thought (.) just if you read the issue (.) it was how are you to see or how do you measure the differences?

Mona: should we answer now?

Teacher: yes (.) that is (.) it is free discussion in a civilised manner

Mona: we had thought (.) what had we thought to do? like take a certain number of people and like and like follow them (.) if they get a brochure and see (.) yes (.) I do not know

Ann: though we have changed now (...)

Mona: yes we have changed now (.) that is what

Teacher: that we do not care about now (.) it is not such a big change

Initially, the participants have to talk through some expected procedurals, and at the same time make an explorative description of what they need to do, in order to be able to go on posing their questions and delineating the issue. Nina explicitly asks 'how it is done?'. The teacher answers that they should take some kind of evaluative stance towards the group's formulation of their issue. Nina confirms with an okay, and makes clear by 'should I start' that what follows is a comment on the formulation of their issue. In the next turn, Mona makes another explicit procedural question 'should we answer now?'. The teacher's response, 'it is a free discussion in a civilised manner', makes clear that there are certain expectations.

Nina's first thought – how are you to see or how do you measure the differences? – points out that certain school science practices for objectivation come before what exactly their investigation is about. What these practices are supposed to result in is already stated in an objectivated form as the differences. Objectivation is a theme organising their work through the interplay of accounts and a search for something emerging with a certain kind of sense already presupposed to be there. Their version of doing school science makes them presuppose that their objects are made in a certain way: e.g. through this practice, at the constitutive level, to be recognisable as a school science project, the students need to measure and show some differences, while at the level of optimum preferences used for grading, it could for instance come down to how clear the students' reasoning is in terms of relating to a created baseline, but in turn, a reasoning based on them actually managing to organise any measurements in the first place, as asked for and reflected in Nina's 'first thought', or question.

Mona starts recapitulating what they had thought, and then switches to question their own thoughts, ending with 'I do not know', which Ann clarifies by saying that they have

changed now. Mona confirms that 'that is what', but the teacher interrupts them and suggests that they are not to care about that now. The students' outwardly projected self-critique begins an attunement, whereby the students need to take a stance, give accounts of their own thinking, and relate it to a presupposed order embodied through the teacher's instructional work.

An implicit tension here which develops through their discussion is that while the students are trying to make clear *what* their evaluative stance is orienting to, the teacher is trying to orient the students to *how* they are supposed to go about relating different parts, which are talked about as events or instructed actions in a certain order. The teacher's abrupt ending of what the students' change is about is an example of how she orients them to focus on how they are to do it. The teacher's instruction to disregard *what* the change is about makes Henrik and Pontus comment on *how* the other group's formulation of their issue would not work as the title of their project or as a description of what they have done in a brochure:

```
Henrik:  if your issue should be the title of your project work you
         would not get a picture of what you are to do (.) cause there
         is no one who knows (.) what kind of brochure it is or what
         kind of differences there are or anything actually (.) so it
         is very fuzzy (.) [so how you mean
Pontus:  [I say the same (.) cause as I read it I read how much the
         small differences in the BROCHURE can  influence the
         environment and I do not know what you have changed in the
         brochure sort of
Mona:    but (...) it was pretty hard for us to find an issue and
         therefore is it good for us that you can help us now
```

It appears hard to find a clear formulation for a rather abstract object, such as 'an issue'. The group's formulation of their issue is taken as actually lacking a specific question. What is meant by a single question in itself lacks detail and patterned relationships to make sense of it. Without these patterned relationships, it is taken as giving no information, and they cannot find their way forward in their interaction, to reach the teacher's suggested intermediate goals. The group's single question does not work as a starting point for the discussion to smoothly arrive at something more precise and specific, as intended by the teacher. In earlier discussions, when the group came up with this issue, it can be heard that they are discussing how to relate several questions; they are searching for what they call a 'röd tråd' in Swedish, a red thread – a common theme or main line of thought – connecting the questions, but only send in one question to this seminar. Unclear circumstances shine through a few turns after Mona's answer above:

```
Ann:     but (.) yes [lower to someone else in the group] what do you
         say? maybe we should say that it is not the brochure?
```

This is hard to describe with any adequate fidelity, as it is also unclear to the participants, but by using instructed patterned relationships, they also test out what this transitional formation they are talking about may be. The object of the group's questioning appears to be transforming. Through discussions the class are trying to make more evident how their question is relating to what. But the groups' change from working on a brochure to a game goes unnoticed in the class seminar talk, adhering to the teacher's earlier suggestion not to care about that now. There is also a priority given to objectivation practices, such as measuring or other ways to see and be able to show some change. How to create the object and turn it into some workable artefact comes before more precisely what it is that can become this object.

When the teacher tries to move on to the next group, a general discussion of what the question and the brochure really are about comes up, which the teacher interrupts:

```
Teacher: then I got a question (.) must this be a part of the issue?
         how one is to do it? precisely? sure (.) one can specify and
         make it more exact(.) that is really good (.) then comes the
         hypothesis and then the method
```

The teacher starts with 'then I got a question', an interruption announcing that she has noticed a need for guidance, which she methodically poses as a question. What comes next is reflexively tied to the students' prior discussion of the need to specify how someone may turn interpretations of their school science project material (a brochure or a game) into concrete actions for observation and measurement. The teacher questions whether this discussion must be part of the issue, 'how one is to do it, precisely?'. She states that one can specify and make the issue more precise, 'that is really good', but then she goes on to delineate the issue from what is to follow: then comes the hypothesis and then the method. The teacher poses a question designed for instructing the students how they are expected to go on. If they are to orient their project by working out these objects, then they will need to delineate the issue from hypothesis and method. 'Issue' is both heard as specific and vague enough to change a little through these anticipated relations, and thereby able to become more intensified and concrete.

The teacher uses the occasions to describe what they are presupposed to be relating to now in a reproducible way; i.e. how a precise and specific issue is expected to lead to a hypothesis and a method, and that all is not supposed to be stated at once within the issue. Here is a tension. The teacher is looking ahead. She is at the same time oriented to how their projects are supposed to appear in a reportable way, first in a project plan and possibly later in an actual report. The students are oriented to making the objects of their talked-about project into a more evident order by focusing on practical activities, a kind of dialogical simulation of what this is and how it would work in use. Their practical reasoning makes the issue appear as closely related to details of how they may do it, a search for a practical purpose by which an understanding of these descriptions may be attempted. The teacher's interruption of their practical reasoning and following

delineation of the issue-hypothesis-method is stated in a general way, as an instruction on how one is expected to relate different emerging textual parts. It apparently refers to an order in the prospective written report, something that does not seem to have dawned on the students yet. There is a projection of agreement. The students shall adhere to the specific presupposed order of question-hypothesis-method. In this case a confirmation comes directly from a student, who summarises what the teacher is saying by making relevant the course plan or check-list:

```
Henrik: there is a point of its own for that in project work
```

'There is a point of its own for that' relates to that this can be read as a separate point in 'project work', here short for a check-list the teachers have made on doing project work, which is a more practical version of the institutional course plan. It appears directly and functionally significant here for Henrik to relate the teacher's exposition of the project work's articulation and structure to the check-list. It is made as an objective relationship. Formulating a separate and precise issue stands out as an object wherefrom to start creating these following patterned relationships to be able to go on and do what is expected next, according to a rather abstract institutional and literate order, sketched out in the check-list.

This summarising opens up going over to another group's question, but the teacher first underlines:

```
Teacher: but this is where you are meant to get to (.) by working on a
         precise issue (.) then the thoughts are led somehow (.) as you
         have been discussing now (.) so that is quite right and that
         is how you are to think for it to become (.) for you being
         able to do any investigation later (...) now I want some other
         group to have...
```

The teacher highlights the practical relevance of working in this way: 'but this is where you're meant to get to, by working on a precise issue' makes up a practical approach, how to go about it, and turns it into socially recognisable pointers, 'how the thoughts are led somehow, as you have been discussing' ; and also points forward, 'how you are to think (.) for you being able to do any investigation later'. The teacher summarises the need to formulate a precise issue as crucial for being able to make any inquiry later, which is to be heard as reflexively tied to her earlier turns on how the dialogical working out of the issue is expected to lead to hypothesis and method. The expected way to do it is to lead the thoughts through discussions according to these steps, consisting in socially oriented to events turned into objects, which through talking and writing are established as emergent coordinates; verbal means leading further, patterning the relationships between them as events for their doing: issue – hypothesis – method.

PROBLEM?

For this November supervision talk, from which the next excerpts are drawn, the students are to have written a formulation or statement of the problem (Swedish: *problemformulering*). The teacher reflects over the students' text, creating a silence of 5 seconds, a long time compared to their ordinary flow, and then:

```
Teacher: but here there is no formulation of the problem! That
         question is not in here
Mona:    the issue then? is there none?
Teacher: no it is n (...) those are questions which help me to realise
         the purpose
John:    ah (.) but that is our issue
Teacher: yes..?
John:    or formulation of problem? or? yes (...) these are those
         problems that (...) or those we see which (...)
Mona:    problems of method
Henrik:  (...) which problems we see that we might bump into
Mona:    yes
Teacher: (...) yes (...)
Henrik:  we probably don't quite understand the meaning
```

The teacher finds that what she expected to be their question 'is not in here', in their written problem statement, and with it lacking, it does not as a whole make up a formulation of their problem. Mona asks if the whole issue is lacking. The teacher starts a negation, stops herself, and switches to a description, explaining that questions are connected to a formulation of the problem, and those are held together by helping them to realise their purpose. How she formulates this in Swedish is hard to translate. Her explanation is built on dialogically putting herself in their position, 'those are questions which help me', and then she goes on to say in a more direct but maybe not idiomatically working translation, 'to realise the purpose'. What that is and how their questioning is different from their purpose is left unsaid, until further notice, but questions can at least be heard or seen to be anticipating a purpose. We are faced with a presupposed set of patterned relationships: questions – formulation of the problem – purpose.

The coherence of their objects, or rather the events – things they have to do and the patterned relationships between them – may make anticipatory sense in a specific order. Here in this excerpt, the coherence of their project work is founded upon, and exists in, the anticipatory reference of questions, as a part of the formulation of the problem, which is supposed to help them realise their purpose. When these steps are successively actualised, they also fulfil those anticipations. A set of patterned relationships is supposed to achieve coherence, and to be able to work through several stages of their project work. What is anticipated by questions and problem, but found lacking by the teacher, and

which makes her guide the students, as can be heard in the following discussion, is a realisable purpose.

In the excerpt, John holds on to that this is their issue, or formulation of the problem, or those problems they see which; intertwined with Mona's clarification that those are problems of method; or as Henrik says, problems they anticipate bumping into, which gets confirmed by Mona – altogether relating to the practical side of how they are to conduct an investigation. Not as expected by the teacher, a clear textual statement of the problem, related to a realisable purpose, and thereby later also something concise and readable in a coming report. The teacher's hesitating '(...) yes (...)' makes Henrik make the formulation that they probably do not understand the meaning.

A relationally responsive form of understanding would consist of inferring connections, patterned relationships. It may be that the students are not heard by the teacher to be orienting to the anticipatory aspects of how to connect questions – formulation of the problem – realisable purpose. This is a failure to notice an aspect and finding it by the patterned relationships within the system of expectations. To the teacher, 'to realise the purpose' is a practical concern – will this work out? It is something the students have to turn into events, activities. As a practical concern, becoming shared by the students, the following discussion revolves around what this way of formulating the problem statement may lead to. Continuing directly after the excerpt above:

```
Teacher: hrm (...)[reads] 'why many students do not achieve pass in
         mathematics and help them in 9th grade' [Year 11 UK; Tenth
         Grade US]
John:    is it stated that badly?
Teacher: yes here it is stated like that (.) the purpose is to
         investigate why
John:    that [is to say] we shall investigate why
Teacher: and we shall help them in grade 9?
Mona:    and help them in grade 9 (.) yes
John:    (...) and help them (.) yes (.) to simply achieve pass
Teacher: yes (.) that is a huge thing!
Mona:    hm...
John:    oh well!
Teacher: that is hard (.) I can tell
```

The teacher starts over again and recapitulates what the students have stated as a problem, and heard that way, read as an account by the teacher, John wonders if it is stated that badly. The teacher then guides them through by focusing on how they have stated their purpose, 'to investigate why', and the following turns can be heard as a search for the scope of what is to be investigated. This gets repeated in another round, following directly after the excerpt above, combining a discussion of a specific fussiness in the problem statement with a clarification by the teacher of what the students are

actually asking for: 'Why do so many students not have adequate knowledge of mathematics to pass it?' She closes the discussion by remarking that it is still an enormous question. This may be implying that they are aiming for more than she requires them to do. The students are talking and writing about their current ultimate goal, helping some students in grade 9, and the teacher is reading and talking about what may be a realisable purpose for both their investigation and a readable report.

END PRODUCT AND THAT WHICH IS THE THING ITSELF

In two February tutoring talks, the teacher tries to align her and the students' interactional ordering into a practical purpose for their school science projects, by asking what they think their end product will be. An utterance involving an expression like 'end product' (Swedish *slutprodukt)* is typical of the culture of talk, within a setting of institutional expectations and a preference for written accounts, but what it refers to is also designed as something up for discussion. The student group interested in mathematics:

```
Teacher: what would you say is the end product?
Henrik:  of our project?
John:    that would we probably say is out there (.)
Henrik:  yes (.) that which we achieve out in X (.) in X-school(.) that
         is to say (.) that is what we want to accomplish (.) that is
         what the end product will be (.) hopefully positive results
         out there
Teacher: yes (.) quite (.) positive results for the pupils in
         mathematics (.) that is the end product
John:    yes (.) that is what is the thing itself (.) that we are to
         make them better (.) hopefully (.) better in mathematics
Teacher: and then we get into this with methods and measuring then (.)
         then you shall measure this result
```

To the students, their end product is something they accomplish 'out there', as worthwhile in itself – it can be heard in their sense to end there, 'that is what is the thing itself'. But by asking the students to define their end product, the teacher also suggests that what they will be doing next must aim at an end product. The teacher handles the students' purpose in terms of lived achievement, helping some younger pupils passelementary mathematics out in x-school, by making a move, from her formulation of the students' conception of their end product – 'positive results for the pupils in mathematics (.) that is the end product'; confirmed by John, 'yes' – starting to make clear expectations of how results in an end product are related to and become structured, 'and then we get into this with methods and measuring then'. Certain objectivations have to be worked out.

A similar kind of search comes up at the same time with the other group, making an environmental game for children:

Teacher: what would you say is the end product (...) of your project work?
Nina: yes (.) that was a good question (.) what is (...) is it not the game or is it the report?
Teacher: you will have to find out about that in relation to the formulation of the problem
Nina: what does end product imply? (.) isn't it (.) is it the analysis in itself then? about how it has been done?
Teacher: yes (.) that is my question to you (.) you need to think about that (.) what is the end product?

Nina tries to establish what the words 'end product' imply in this context; is it the game, the report, or the analysis? The teacher expects the students to find out by thinking together by themselves about that in relation to their formulation of the problem. This is a way of posing questions to make the students go on independently in a certain direction: Find out about what 'end product' implies in relation to your formulation of the problem. To reach an 'end product', it needs to be related to the formulation of the problem; the problem formulation may be stated and used as a device to reach an expected end product.

THAT WHICH HAS DIFFERED – A COMMON GOAL

In a late tutoring talk, John and Henrik start to do a kind of summary account about what it is that has differed:

John: then one thing I also feel (.) we have not quite gotten what you want out of this (.) it feels like your idea or part in this is bigger than what we ourselves (...) like we do not know what you want to see almost (.) it feels like (.) we have received good feedback (.) that is to say that is that which (...)
Teacher: now I don't really get it
Henrik: as we have perceived it (.) you want such a big report on this (.) we focused more on doing it out there (.) and did such a small report
Teacher: you may very well make such a small report (.) but what is stated in there (.) it should be crystal clear (.) it should be stringent and it should be reflective (.) then (.) cause I want you to pass with distinction (.) that is my goal

```
All:     that is ours too
```

There is no use of a question by the teacher when it comes to her clarification of the real goal. Rather, the students find themselves in a situation where they come upon the actuality of being supposed to be doing certain kinds of objectivations in a certain style, which are more according to optimum norms for grading, than on the constitutive level. Here, John starts to describe a feeling of discrepancy between the teacher's expectations and what they themselves have tried to do. But it is still hard for them to get at what this bigger 'thing' is that the teacher seems to ask for. John says that they find it hard to see the aspect the teacher is asking for, 'like we do not know what you want to see almost'. Then he expresses his feeling again, and makes a concession that also says something about good feedback, 'that is that which (...)', which, however, is somehow related to their problems of reaching interactional coherence. The teacher interrupts John before he has been able to express his concerns, and she likewise communicates she 'does not really get it', suggesting that getting feedback in a supervision situation is what makes sense to her in a taken-for-granted way. Henrik describes that the discrepancy is between the teacher's wish for such a big report, and their own focus on writing a short report. Here, Henrik express what might have been dormant before, what their difficulties to reach a mutual understanding might have consisted of. The nature of the problem is dawning upon him. The teacher now takes control and gives them a motivational account, pointing to what kind of work is expected to have been done, if they are to be recognised as students passing with distinction: 'what is stated in there (.) it should be crystal clear (.) it should be stringent and it should be reflective (.) then (.) cause I want you to pass with distinction (.) that is my goal'. Institutionalised expectations here structure recognisable identities for the students as situated actors. The teacher expects only one option for the students, 'cause I want you to pass with distinction', out of a narrow set of categories regulating what a student needs to be doing to get a certain grading. The students answer that they share this goal with the teacher, 'that is ours too'; continuing directly after the excerpt above:

```
Henrik:  that is what we perceive as the biggest (.) we have focused
         out there more (.) that we have succeeded while you (...) we
         have probably not realised (.) or something in that case (.)
         that it demands so much more in the report (.) than what we
         have done
Teacher: you have accomplished this now (.) and that is like one part
John:    that is our project
```

Henrik describes what they perceive as the biggest difference in focus, that they have focused more on actually succeeding in helping the younger pupils to pass elementary mathematics. His start of a description of what the teacher seems to be asking for is followed by a pause, and Henrik then switches to the point that they have probably not

realised, or something like that, in that case, that it demands so much more in the report, than what they have done.

This retrospective way of answering is tied to the teacher's account of what they are expected to do, which is produced retrospectively when the patterned relationships of their actions to the teacher seem to be failing to achieve the presupposed order of their school science project, making it 'crystal clear, stringent, and reflective' in a report. What Garfinkel calls a system of expectations (2008, 141) consists in such reflexive social interaction, where a background assumption is generated by the activity of accounting for an action when the premise of the action is called into question. That is, in this case, the system of expectations is part of the practice that is made available through the teacher's methodical ways of asking the students to account for what they are doing. What is expected to be shared background assumptions is in this way something that is finally achieved through their interaction, and then just enough for current practical purposes.

To the teacher, the students' focus on succeeding 'out there' is something they have accomplished now, which she describes as being one part. Their investigations and work with maths-help for younger pupils is treated like a foundation, upon which a shape may be seen to be forming, or as a ground through which a figure may be seen emerging, as a transitional formation. But John is still committed to actually helping these younger children to pass elementary mathematics and still maintains, 'that is our project'. The continuation directly after the excerpt above goes as follows:

```
Teacher: but then you will have to be able to think about it also (.)
         that is where you feel that I am right there (.) poking around
         and being picky (.) I think
John:    precisely (.) that is what we have got help with now (.) so
         that we can do that also
Henrik:  that was what I was thinking about just before when I said
         that your [and our goal (...)
Teacher: [yes]
John:    that is that which has differed a bit I believe (.) we have
         not had a common goal
```

Henrik starts formulating the point about different goals, which gets anticipated and confirmed by the teacher, and finished by John. Thus, the formulation is dialogically constructed about what has characterised their project work so far. To achieve this presupposed order, represented as 'crystal clear, stringent, and reflective' in the report, the students need to be able to display being finished thinking about their results according to a highly literate standard of optimum norms used for grading. When saying this, the students and the teacher have been discussing an array of motivational accounts, in collaborative writing and tutoring sessions, on the themes: how to display and deepen the analysis by discussion and reflection, by developing the experiences and views of others, by achieving concreteness through specific examples, by justifying choices, and by

substantiating arguments with reasons. The students' practical purposes now start to align with the expectations embodied through the teacher's instructional work on how they are to assemble their actions and objects into a goal object.

IT IS STARTING TO FALL INTO PLACE

Finally, an extract from the last supervision sessions, from the 'game group':

```
Nina:    we feel that it is starting to fall into place (.) how we
         should write
Teacher: yes (.) that is great!
Dinha:   and then the end product (.) it will not be this new game that
         we are going to make but it becomes (...)
Nina:    (...) but the evaluation of the game
Dinha:   that that is our product
Ann:     yes (.) that that is the end product
Nina:    in the end it became that
Teacher: yes
```

A feeling of coherence is expressed by Nina, as they feel that how they should write is starting to fall into place. The teacher's confirmation is thereby tied to how this whole is constituted. They found a relevant solution to their project, which makes them see what their problem was, and it gives them a practical working purpose of what to do next. They are then left by the teacher to write their report by themselves. In the extract above, the students express their experience of a shift, from orienting to making a game for younger children, to writing an evaluation of how the game worked out for the children; 'that that is our product/end product'. Nina concludes by expressing this as a temporally shifting process, 'in the end it became that', which is confirmed by the teacher.

DISCUSSION

Themes explored in the excerpts will now be discussed in light of how they assemble their work on the overall level – how do they get it all together? – by applying Garfinkel's (2008) idea of an interplay of information as patterned relationships between events, and the interactional location of objects within a system of expectations. The teachers try to focus the students on how they are supposed to do things, and not get hung up on exactly what it will be, by instructing them to do their work by putting certain events, 'things' they have to do together in a specific order. This instructed reduction work by the teachers making the students aware of what to disregard, and how to create focus through establishing connections of patterned relationships between events, these 'things' they are presupposed to do in their work: Question (issue) – hypothesis – method – problem statement – realisable purpose – 'end product' – a transitional formation, which finally

is interactionally turned into a coherent goal object; what the point and figure is in their project.

Right from the start, the teachers orient the students by presupposing that their goal object, 'end product' they call it, while a transitional formation in their discussions, will be their written report. An open horizon of co-subjects is thereby gradually broadening through the students' creation and by the teachers' expectations of a textually possible audience. The students' considerations of how to determine what information constitutes 'facts' and 'reasonableness' help to determine their audience – 'this should be possible to read by anyone, anyone in another city' – that, in turn, shapes the students' approach.

How the students as situated actors are presupposed to assemble relationships between events is sequentially related to how they are to achieve coherence of their overall work, where the students first orient to the order of how they are to carry out their investigations, and then through the teachers' methodical work are made to pick out some aspects from their investigations and relate them to a presupposed order of writing a report. In this way, the order for creating the students' sense and gist of their science project is realised afterwards. The understanding of 'end product', their assembling of their actions and objects into a goal object, what they are to do with their 'insight', comes about only at the end, common sense for anyone in education, but also a conclusion less trivial than it may seem to be. Their goal object, that their 'end product' will be an evaluation, is achieved through their interactional coherence of a shared practical purpose. Working out these patterned relationships and finding their solution, within this system of expectations, finally makes them see what their problem consisted in, and thereby, how it is to be resolved. Just what it sequentially became, 'in the end it became that', they state, and then they move on.

In one of Åberg's (2015) studies, investigating similar themes among students three years younger, they were asked to practice being critical of the information they found and contribute with their own analysis and reflection. There the teachers used questions, which were open in the sense that there was no predetermined way to solve them. In this study, the teachers instead use questions with partial instructions and anticipatory references, which are predetermined in the sense that the teachers orient the students to see patterned relationships between events, most often that there is always a next 'thing' they will have to do. These anticipatory properties run on presuppositions that define them as the possible events of their practice. To perceive their 'end product', the students have to reflexively locate it within this system of expectations.

On each occasion of their work in the excerpts, selection is attempted by the teachers, instructing the students to bracket those aspects which are currently not indexed by their descriptions. This presumably involves some kind of practical purpose, not always that clear, but it can be heard by the students that the teacher's description involves their attention to a certain aspect in order to fill in detail for the description provided, as may be necessary for the practical purposes of attempting an understanding of the description. At the same time, however, there is a reflexive redetermination of the meaning of the original descriptor, as a result of the contextual filling in now effected (Heritage

1978,83). This is how students achieve familiarity of details. This kind of reflexive redetermination of meaning, achieved through the interplay of patterned relationships and anticipatory properties that define possible events, as inferred and used by the students is what information consist of, or rather, what information as reflexive ordering of the sequential coherence of their events is made by and used for. Put a bit more simply, information is made by and used for social ordering of events.

In this study I have chosen to focus on his Garfinkel's (2008) use of Deutsch's notion of information as patterned relationships between events, as I find that related to Garfinkel's most continuous focus on trust conditions and phenomenal field properties. What Garfinkel (1996, 2002), following Gurwitsch (2010), calls the phenomenal field properties of work sites and their practices points to relations of mutually constitutive details, through which actions and objects take on their specific, practical significance. The patterned relationships between events consist in endogenous relations of reflexive interaction structures and results in an achieved familiarity of detail through instructions and instructed actions (Garfinkel 2002, chap. 6).

What the figure is in the students' work incrementally emerges over months of writing, seminars and tutoring talks, deriving from the complementary correspondence of the teachers' instructions and the students' instructed actions through the patterning of relationships between their events, which is specific and vague enough to allow for this change over time. This creates a change into *Prägnanz* – 'a good figure in its simplicity', or rather in a sequential perspective; what is said by the students now can be heard by the teacher, both as a whole and in its details, to have good continuations. This gradual achievement of coherence and achieved familiarity of detail is what make rather complex Gestalt objects and contextures possible in an intermediary world; that the teacher and the students in the end have synthesised what all the details of their work consist in and as a whole. By then they swiftly orient to what from the beginning had to be handled as separate but related parts, and the details have an achieved familiarity in and as their local contexture of practical relevancies and significances. This reflexively achieved coherence – 'that it has fallen into place, how we shall write' – is tied to them finding their object for analysis – 'how the game worked out for the children'.

For Garfinkel (2008), the actors and the structure of their object world are simultaneously constituted; together they form a unified field. There is no object world independent of actors about which the actors can make presuppositions or have expectations:

> The absolutely new is inconceivable. Strangeness exists only with familiarity; novelty only by the standard of the ordinary. To perceive an object means to locate it within a system of expectations. The perception is a fulfilment of the expectation and may in turn furnish the foundation for new expectations. Anticipations and continuance, the before and the hereafter, do not belong to separate acts in the succession of experience. They are ingredients of the one act under consideration, and compose the temporal horizon of the intended object. The temporal "horizon" is not to be conceived of like a railroad track extending off to right and left with experiences stuck onto it like stations. Rather each

> experience has its own relevant past and future attached to it as an articulated set of actualized and future possibilities all experienced as a gestalt in the momentary Now (Garfinkel 2008, 141).

So, when Garfinkel says that to identify an object means to locate it within a system of expectations, then information is the socially patterned relationships between its events, found in how they are constituted as a coherent unity of meaning. This is something fluid, something done and often made as communicative efforts, trying to participate in and at the same time create what he (2006) calls a vivid presence – that we experience this together. Competent participation in this interaction overrides whatever it is 'about'. Whether a constituted object is seen as objective and real has to do with practices making it recognizable, intelligible, legitimate, etc. and the pattering of relationships between these events – the inferred logic of the practice, its informational productivity as social ordering – is information in Garfinkel's sociological approach. In identifying an object, placing it within its system of expectations, the students search for and use socially patterned relationships as a method and resource for common understanding.

Often the students are supposed to have written something that later is to work as a part of a report. To the teachers then, there is often something more missing – there is always a next 'thing'. This way, the teachers partly instruct the students by questioning them: What will this lead to next, or, how is this related to this other 'thing'? In trying to locate these 'things' as objects, the students use the teachers' questions with partial instructions to see what kind of instructed actions (Garfinkel 2002: chap 6) they may consist in; e.g., the event of working out a question here have socially patterned relationships to that they are also expected to separate that from how they work out a hypothesis, and then a method.

These patterned relationships make up a system of expectations, which are on the level of a competent reciprocal engagement – 'everybody is supposed to know how a school science project is done and what it consists in'. Watson (2009b) argues, in his article on Garfinkel's trust argument, that you cannot have information in the first place without trust, and that seems to hold true through these excerpts: "So-called 'information' oriented to by participants is setting-specific (and practice-specific), relating to the distinguishing particularities of the evolving gestalt contextures in terms of which these local orders are constituted. The term 'information' is often held to imply an interchangeability of such details; this is most certainly not what is meant here" (Watson 2009b, 493). In turn, this points to that the relative and flexible meaning of ordinary words, as 'question', 'problem', 'purpose' are used by the students as an incremental gestalt exercise to find out their specific, detailed meaning within their school science projects. The socially patterned relationships the students search for and use are circumscribed by the practical purpose of doing a school science project – how they are to use these terms in tutoring sessions and in writing their report. This is close to Garfinkel's later writing on following instructions as the achievable familiarity of detail: In and as of achieved coherence of doing just that in detail, that we can do it again; not just me, but

us; and instructably so; putting together what detail could possibly be in its ties to structure; just how in the workplaces is that tie being made so that detail and generality, embodied action, craft, findings, and results in their relevance for each other are hopelessly tied together as local achievements (Garfinkel 2002, 216-18). These ties are the patterned relationships between events; what Garfinkel initially called information.

A focus on information as patterned relationships between events seems to bring to the background an important part, both in the students' work and in Garfinkel's attempts to describe information: How is it socially ordered for us to have the possibilities to come up with and create something new? Patterned relationships work by being both specific and vague enough for change to occur, there's a possibility of some things new, and inferences done and used by the students has an informational productivity, but more exactly where that comes about is not directly seen in these excerpts. In a preliminary way, I would suggest that the creative instances happened elsewhere, in student's dyadic everyday relations, as writing in parallel in a chat while working on the report, or in reflection while outside of the dual being of dialogue, as opposed to the more objective sociation in the triadic relationships when they are talking with the teacher, and then often relating to third parties as potential readers of the their reports. Here in the objective sociation of triads, the intersubjective order is achieved relentlessly at the surface of communicative actions (Lynch 2000b, 529); with the result that events tend to organise themselves, by the methods members pick up and instructably use, in practice teach each other, for organising their local affairs (Liberman 2016). The notion of information as patterned relationships points to what is developingly objective and developingly accountable which, Garfinkel argues, in any actual case is unavailable to situationally disengaged analytically reasoned reflection (Garfinkel 2002, 189), but what about members' own practical reflections over its course, what the students calls their 'insight', when there is a certain new awareness worked out, firstly by a shift in how they see 'the same things' in a different way? Here is another aspect in need of explication: How is this what is new in information worked out? What is it in the patterning of our relationships which makes us see things in a different light? Which are the noticings or saliencies, primordial shifts, which may lead to and in common interaction get established as a kind of gestalt shifts?

CONCLUSION

Patterned relationships between social, interactional events, and the participants trying to achieve coherence through communicative efforts, come to constitute which aspects and which properties can possibly become information within the practice investigated here. In parallel, there is a rather active 'disregarding work' done by the teachers, fixing what is going on now, and indicating which relationships to focus on between events, thereby creating constitutive gaps, 'things' the students have to do, to be recognisably committed to the practice of doing a school science project. Information, not as a theory or a model, but as relationship between events makes up sequential orders. Participants' attunement to these orders seem to supersede any formal or normative goals and

objectives as motivation in their ongoing interaction. Information as social ordering of events come to define what is possible to recognise and describe as normal work. In short, the students assemble their work by sequential fields of patterned relationships between some presupposed events, first talked about as different parts, but over the course of working them out, these achieve familiarity, both in details and as a coherent whole. This inferred logic of their practice, its informational productivity in and as social ordering, is information in Garfinkel's sociological approach.

The sociological notion of information as patterned relationships between events seems to be in line with, or closely related to, Garfinkel's trust argument (1963). Without trust there can be no information in the first place (cf. Watson 2009b). Without trust, the referential objects of their talk, for that talk to be identified as a 'course of instruction' and identified for its specific sense (Wieder 1974), will instead lead to a search for premises by further questions. This is what Garfinkel means when he says that we locate objects within a system of expectations, or as in the trust argument, that the normality of events is a function of their presuppositions that define possible events (Garfinkel 1963,198). Without adequate relations to these presupposed events, emerging things the students will have to do, their accounts of their school science projects will not be heard by the teacher as recognisable and intelligible for anyone, but rather as missing some relevant or significant 'next thing' they need to do to be able to go on.

Garfinkel's sociological approach to information leaves usual models, as the knowledge transmission model of teachers and students, and opens up information as an organisational field approach where the pattering of relationships is worked out by combining Durkheim's 'unstated terms of contract' with Gurwitsch's gestalt contexture (cf. Watson 2009b). In this perspective, information is an interactional activity of searching for the most ordinary 'things' in and as the pattering of relationships between events that reflexively make sense, where the inferences made and used has an informational productivity and open up for a familiarity in details. The 'events' are the interactive instructed actions of coming upon 'things' – patterned relationships, information – reflexively turned into a sequentially organised field of sense. 'Event' needs to be read in terms of time as social ordering, from within them working out sequences identifying any order of expectations which may instruct which sense may be interactionally achieved. This is something done as operations for common understanding in the attunement of interactions. At the same time, information as patterned relationships between events is specific and vague enough for change to occur over its course, over time. This open an interplay between specific details and emergent objects, seen in the always emergent character of events, where teachers in partial instructions as questions make possible for the students to work out these presupposed relationships, through the students making and reflexively using inferences. The pattering finally consists in the students achieving familiarity of details. As I hope the excerpts make clear, this is not interpretation or hermeneutic circles carried out somewhere inside their heads, but just continuous ordinary schoolwork, first done and then reflexively made sense of by talking and writing.

REFERENCES

Åberg, Mikaela. 2015. 'Doing Project Work: The Interactional Organization of Tasks, Resources, and Instructions'. Göteborg Studies in Educational Sciences, 380. Göteborg: Acta universitatis Gothoburgensis.

Garfinkel, Harold. 1963 'A Conception of, and Experiments with, "Trust" as a Condition of Stable Concerted Actions'. In *Motivation and social interaction: cognitive approaches*, edited by O. J. Harvey, 187–238. New York: Ronald Press..

Garfinkel, Harold. 1967. *Studies in Ethnomethodology*. Englewood Cliffs, N.J.: Prentice–Hall.

Garfinkel, Harold & Rawls, Anne. 2002. *Ethnomethodology's Program: Working out Durkheim's Aphorism*. Lanham, MA. Rowman & Littlefield Publishers

Garfinkel, Harold & Rawls, Anne.2006. *Seeing Sociologically: The Routine Grounds for Social Action*. Boulder, CO.: Paradigm.

Garfinkel, Harold & Rawls, Anne. 2008. *Toward A Sociological Theory of Information*. Boulder, CO.: Paradigm.

Gurwitsch, Aron. 2010. *The Collected Works of Aron Gurwitsch (1901–1973): Volume III: The Field of Consciousness: Theme, Thematic Field, and Margin*. New York: Springer.

Heritage, John. 1978. 'Aspects of the Flexibilities of Natural Language Use: A Reply to Phillips'. *Sociology*, vol. 12, no. 1, 79–103.

Ikeya, Nozomi. 2020. 'Hybridity of Hybrid Studies of Work: Examination of Informing Practitioners in Practice'. *Ethnographic Studies*, no.17, pp. 22–40.

Liberman, Kenneth. 2016. 'Studying Objectivation Practices'. Quaderni del Dipartimento di Sociologia e Ricerca Sociale, Università degli Studi di Trento, at https://dl1.cuni.cz/pluginfile.php/501480/mod_resource/content/1/Liberman_2016--Studying_Objectivation_Practices.pdf.

Liberman, Kenneth. 2018. 'Objectivation Practices'. *Social Interaction: Video-Based Studies of Human Sociality*, vol. 1, no. 2. https://doi.org/10.7146/si.v1i2.110037

Liberman, Kenneth. 2021, in press) 'Tasting Coffee. An inquiry into Objectivity'.

Lilja, Patrik. 2012. 'Contextualizing Inquiry Negotiations of Tasks, Tools and Actions in an Upper Secondary Classroom'. *Gothenburg Studies in Educational Sciences*, 327. Göteborg: Acta universitatis Gothoburgensis.

Linell, Per. 2011. 'Samtalskulturer: Kommunikativa verksamhetstyper i samhället'. Vol. 1 (*Studies in language and culture*, 18). Linköping: Institutionen för kultur och kommunikation, Linköpings universitet. [Cultures of talk: Communicative activity types in society]

Lynch, Michael. 2000a. 'Against Reflexivity as an Academic Virtue and Source of Privileged Knowledge.' *Theory, Culture & Society*, vol. 17, no. 3, 26–54.

Lynch, Michael. 2000b. 'The Ethnomethodological Foundations of Conversation Analysis'. *Text*, vol. 20, no. 4, 517–532.

Macbeth, Douglas. 2001. 'On "Reflexivity" in Qualitative Research: Two Readings, and a Third.' *Qualitative Inquiry*, vol. 7, no. 1, 35–68.

Macbeth, Douglas. 2011. 'Understanding Understanding as an Instructional Matter: Understanding Understanding in Action'. *Journal of Pragmatics*, vol. 43, no. 2, 438–51.

Meehan, Albert J. 1997. 'Record-keeping practices in the policing of juveniles'. In *Law in Action: Ethnomethodological and Conversation Analytic Approaches to Law*, edited by Max Travers and John F. Manzo, 183–208. Aldershot, Dartmouth Publishing.

Moerman, Michael. 1988. *Talking Culture: Ethnography and Conversation Analysis*. Philadelphia: University of Pennsylvania Press.

Schurz, Gerhard. 2008. 'Patterns of Abduction'. *Synthese*, vol. 164, no. 2, 201–234.

Svennevig, Jan. 2001. 'Abduction as a methodological approach to the study of spoken Interaction'. http://home.bi.no/a0210593/Abduction%20as%20a%20methodological%20.pdf

Watson, Rodney. 2009a. *Analysing Practical and Professional Texts: A Naturalistic Approach*. Farnham: Ashgate.

Watson, Rodney. 2009b. 'Constitutive Practices and Garfinkel's Notion of Trust: Revisited'. *Journal of Classical Sociology*, vol. 9, no. 4, 475–499.

Watson, Rod, and Andrew P. Carlin. 2012. '"Information": Praxeological Considerations'. *Human Studies*, vol. 35, no. 2, 327–345.