DISTURBANCES AND CONTRADICTIONS AS TOOLS FOR UNDERSTANDING WORK IN THE NEWSROOM

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Abstract

Understanding what really happens in workplaces has become a central issue for the emerging cooperative methods of designing information systems. It is not enough to rely on the descriptive observations (Jordan, 1993) or on normative accounts of work (Button & Harper 1996). It is necessary to find out how the work gets done and what the work practices are in the lived, everyday life of the workplace.

For that purpose, drawing from the field of activity theory and developmental work research, the author describes how the work of journalists was studied in a Finnish national daily newspaper, after the implementation of a new pagination system. The tools developed for analyzing and reflecting on work include a systemic analysis of the disturbances in the work practice.

The analysis of disturbances suggests that only a part of the work of the newsroom complies with the notion of traditional journalism: an individual reporter writing news stories. The article looks at journalism as a part of an activity system, as a collaborative work process and a contested field of negotiations between different actors, owners, managers, journalists, systems and production departments, printing plants as well as advertisers and readers.

Disturbances indicate the existence of contradictions, persistent tensions in the activity. Tensions appear in connection with deciding what the content of the newspaper should consist of, how the

work of the newsroom should be organized and the flow of the production process controlled.

Keywords:

Activity theory, computing, cooperative design, journalism, newspapers, pagination

INTRODUCTION

Work practices as a focus of analysis

Schmidt and Bannon (1992) argue that if Computer Supported Cooperative Work is to be taken seriously, it needs a deeper understanding of the cooperation taking place in the workplace. New methods are being applied, as workplace research has branched out to incorporate many disciplines and methods. Older approaches, such as symbolic interactionism and ethnomethodology are being rediscovered. (Raeithl 1996, Star 1996) and work practices are increasingly seen as situated and collaborative, characterized with concepts such as situated learning (Suchman 1987), communities of practice (Lave 1995, Lave 1997, Lave & Wenger 1991, Wenger 1998), distributed cognition (Hutchins 1995), situated cognition (Kirshner & Whitson 1997), organizational sense making (Weick 1995) and activity systems (Engeström 1987, Kuutti 1996, Engeström & Middleton 1996, Engeström, Miettinen, & Punamäki 1999).

The new interest is also visible in research on systems design. Participatory Design (Greenbaum 1991, Kyng 1998, Suchman 1998 and Computer Supported Cooperative Work (Schmidt & Bannon 1992, Bodker 1996, Koschman, Kuutti, & Hickman 1998) [1], emphasize the situated and collaborative aspects of work.

Jean Lave has described the emerging new wave of research as follows:

" ... what we call cognition is in fact a complex social phenomenon. The point is not so much that the arrangements of knowledge in the head correspond in a complicated way to the social outside the head, but that they are socially organized in such a fashion as to be invisible. "Cognition" observed in everyday practice is distributed - stretched over, not divided among - mind, body, activity and culturally organized settings, which include other actors." (Lave 1988,1)

What is journalism?

The interpretations of what is journalism – and consequently what kind of information systems to design for the newsroom – vary depending on whether one takes an individualistic or a collaborative view on news production.

Journalism has been traditionally seen to consist of finding facts and transmitting objective and important news to the audience (White 1950, Breed 1955, Gieber 1964). Research has focused on how individual journalists work or more specifically on the reporters and their sources. (Gans 1980, Sigal 1973, Ericson & Chan 1989, Sabato 1991, Kurtz 1993, Berkowitz 1997, Kurtz 1996).

Another prominent trend of research has been the influence power elites have on the content of journalism (Schiller 1969, Hall 1978, Schiller 1981, 1989, Chomsky 1989). There are also studies that focus on the everyday practices of newswork. They are based on participatory observation of the newsroom or the reporters working their beats (Tuchman 1978, Fishman 1980, Tuchman 1980,

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Ettema & Whitney 1982, Gans 1980, Ericson et al. 1987, 1989, 1991, Nohrstedt 1994). Television news production has more recently been the focus of research in the newsroom (Berkowitz 1992, Underwood 1993, McManus 1994). Underwood and McManus have argued that newswork is being corrupted by commercial interests of both the owners and advertisers, and the work in the newsroom is described with the old metaphor of news factory (Bantz 1980).

The so-called textual turn has meant a turn away from the actual work done by newsworkers, and this has been openly criticized by Bonnie Brennen (1999) and Hanno Hardt (Hardt & Brennen 1995). Michael Schudson (1989, 1995) points out that even though news is constructed in the daily work of the newsroom, the actual work done by journalists has not been adequately studied. Barbara Zelitzer (1993, 1995) has also emphasized the need to understand and study journalists in practice, as a journalistic culture.

To summarize the criticism of research on journalism and the newsroom: news stories written by individual reporters are only part of the process of producing a daily newspaper. Relations between sources, owners and journalists vary and should not be oversimplified or considered predetermined.

Producing a daily newspaper requires coordination of many activities. Ad-production, newsroom, printing and delivery form a complex work process, with a tight daily timetable. The possibilities of misunderstandings and errors are numerous

Changes in the competition for audience have forced newspapers to re-evaluate their concepts of news, and subsequently the content of the newspaper. Computerization of the newsrooms has affected the division of labor between the typographers and journalists. Changes in the technology, such as the invention of the telegraph (Carey 1969, 1989, Schudson 1997) the typewriter (Altheide 1985) the telephone and the computer (Im 1997, Underwood 1988) have changed the work of journalists. But there is still little empirical research on what has actually changed in the newsrooms and what role technology has played in the changes

SETTING AND DATA

The new pagination system in the Daily News

This paper deals with changes in journalism and the work processes in connection with the implementation of a new computerized pagination and database system in a large Finnish daily newspaper, which for the purposes of this study is called the Daily News.

The Daily News started using the new computerized pagination system in March1996 to layout the news pages. Several problematic issues began to surface and the newspaper's editor-in-chief invited researches [2] to conduct a developmental intervention into the organization and work practices of the national news departments. The intervention started in August 1996 and lasted until the end of November 1996.

The pagination system chosen by the Daily News was designed for large newspapers and magazines. For the newsroom and journalists it was a tool for designing and composing the pages on the computer screens. It was also used to keep track of ads and deadlines and to transmit the layouted pages to the printing plants.

The pagination system had at its roots a conception of the newspaper's work process as a linear

flow of materials from three separated production lines – ads, texts and images. The flow was to be controlled mainly by central editors in the newsroom and the production manager. It was based on the old way of working in newspapers, where the ad department, newsroom, composing room and printing plants worked separately and used different computer programs and platforms.

Figure 1. Daily production process at the Daily News as described in the pagination system specifications.

Production process of the Daily News
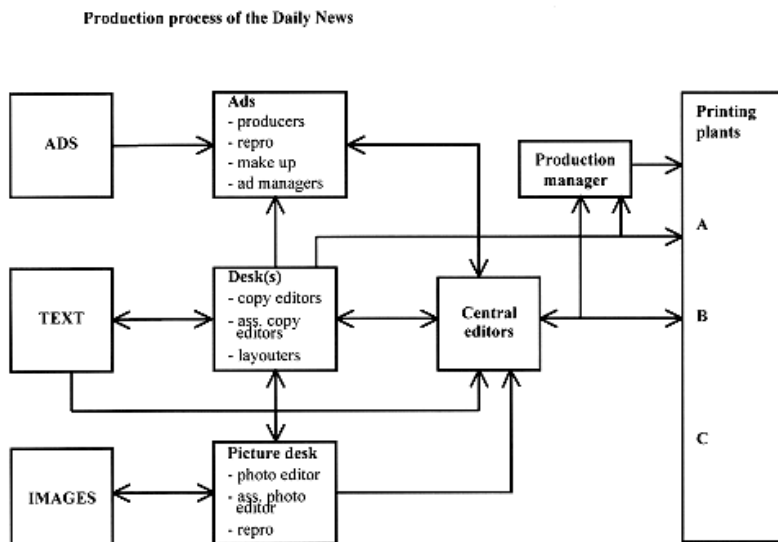
However, the actual work was done somewhat differently. Instead of a centrally controlled production process, there were several centers of coordination (Suchman, 1997). Instead of the central editors, the five layout desks for different news departments became the critical points in the production flow. The flow of ads, news texts and pictures/graphics was controlled in the layout desks, and they also had the responsibility of keeping the deadlines and sending the pages to the printing plants.

There were several incompatible computer systems for each of these tasks. The text system had been purchased already in 1984 from the United States. It ran on dumb-terminals connected to Tandem computers. There were two separate ad systems – one for the text based ads and another for scanning or receiving picture-based ads.

The pagination system was purchased from Denmark, and it run on Unix. The system that was needed for planning the daily newspaper's size, print runs and timetable was purchased from a Finnish vendor and it runs on PCs. In the newsroom it was accessible only to the central (night) editors.

The picture system was based on Finnish software running on Macs. The printing plant had its own computer system for keeping track of the arriving pages and the printing process.

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The variety of computer systems and their mutual incompatibility resulted in several disturbances in the newsroom, for example the layout desks could keep track of the deadlines only manually, and there were several problems related to the other incompatibility issues. After sending the pages to the printing plants, the newsroom could not keep track of whether the pages had reached the three printing plants or whether all the elements were still on the pages. This resulted in several disturbances, described in the daily evening reports written by the journalists.

Evening report May 5 96

"In the last phase two pages missed the deadline … In a part of the second edition the text and the headlines apparently overlapped. We also forgot to send one page to the printing plant, as we were busy fine-tuning the stories."

Evening report December 7 1996

"… the technicians came and wondered why the picture was missing from the front page in the printing plant…"

All these diverse systems were accessible only to the primary users. The new computerized pagination system was supposed to form a bridge connecting the databases of the newsroom, advertising department, and printing plants, to make the whole process easily controllable and visible to all the participants. The integration is still not completed and it seems that it has to wait for the purchase of the next generation of newsroom, advertising and production computer systems.

The new pagination system changed the way of working in the newsroom in many ways. First of all, it meant the death of the old composing room, where typographers had cut and pasted the stories on the pages. However, none of the typographers were laid off, as new work was found in the production of advertisements and in the newsroom layout desks.

The new layout system also meant changes in the spatial arrangements, division of labor and boundaries between the news departments. The pagination was to be done at centralized layout desks, where layouters from different news departments worked together. Layouters of the national news moved to work in the same desk with politics and economics. The aim for these arrangements was two-fold: to share knowledge between people by making it easier to ask for help on how to use the new system. The other aim was to make it easier for the editors to control and coordinate the daily news production.

Producing the Daily News consists of several organizationally separate, but closely interrelated work processes. The combined number of advertisements and news stories determines how many pages the newspaper will have, and the print-runs allocate the placement of the colors. Ads share the space with news stories, and the space left for news is called the newshole. Color placements for ads have to be coordinated with newsroom demands for color pictures and graphics and the restricted possibilities for color offered by the old printing presses. The number of the pages of the newspaper determines the overall deadlines, which are allotted to the news departments page by page. A page must be sent to the printing plants every four minutes, counting backwards from

the first deadline at 10 PM. The first news pages must be ready around 6.30 PM.

The journalistic content of the newspaper – texts, pictures and graphics – needs editing in the newsroom. The editing was done by the copy editors who work in the evening shifts. The design of the pages was done in the newsroom by the paginators, who were mostly journalists.

The layout desks were a central clearinghouse for all the elements on the pages of the newspaper. The news stories were edited there, paginated and sent to the printing plants by the paginators. The responsibility for keeping the deadlines also became a new important task for the journalists.

The Anglo-Saxon strict division between the reporters and the copy editors and layouters was overcome somewhat in the Daily News, because the same people worked in the different tasks in rotating shifts. Before the new pagination system was introduced, the majority of the 24 national news reporters rotated in copy editing and planning the layout. After several discussions in the national newsroom, it was decided already in 1995, that only five journalists and two typographers would be trained to use the new pagination system. The paginating journalists also worked as reporters some days of the week.

Putting together all of the elements that form a newspaper - the journalistic texts, the illustrations, the ads and the timetable - was the responsibility of the newsworkers (journalists and typographers) working the evening shifts in the five layout desks in the Daily News.

The evening shifts and the layout desks were chosen as units of observation of the research, because all the materials for the newspaper were combined and checked there. The layout desks form centers of coordination (Suchman 1997).

"Centers of coordination are characterizable in terms of participant's ongoing orientation to problems of space and time, involving the deployment of people and equipment across distance, according to a canonical timetable or the emergent requirement of rapid response to a time-critical situation." (Suchman, 1997, 2)

To be able to make sense of the work of the newsroom, one task of the evening shift in the layout desks is taken up for closer analysis in the following chapters. It is the evening report, where the journalists wrote down their accounts of what had happened in the evening shift and what disturbances were encountered.

Evening reports and their design

The intervention method chosen for the national news is called the Change Laboratory. It is based on activity theory and developmental work research (Engeström, 1987).The intervention was part of longitunal study of changes in journalism conducted in the Daily News by the author between 1995-1997 (Virkkunen, Engeström, Helle, Pihlaja, & Poikela 1997, Helle & Virkkunen 1997).

As mentioned earlier, developmental work research is interested in disturbances as a window into work and its development. In this paper, the data about disturbances consists of the analysis of the evening reports written by the evening teams of the national news. The journalists wrote the free-form evening reports into the text-system every evening.

The first set of data of this article consists of the evening reports from November 1996 to January 1997. The second set starts November 1 1997 and ends at the end of January 1998.

The idea of evening reports came up in the Change Laboratory (see section 4). The purpose was to provide feedback from the evening shift. The evening report was an ongoing story in the editorial text system. Every evening around 10 o'clock, the evening team discussed briefly what they would want to convey to the morning shift. The idea was to inform and also to observe whether there were any recurring problems that could be remedied. One journalist described the idea in the Change Laboratory meeting.

Excerpt 1. Journalist 10, Change Laboratory meeting December 9 1996.

"It might seem crazy to write down every time the pictures are missing, but if we have said it seventy times, so at least we have some evidence, when we go and ask for something to be done, so writing down the problems has a value of its own."

The evening reports varied in length and content. Some of the evening reports were very short, and merely informed that things went as planned. The following two examples are complete evening reports.

Evening report December 12 1997.

"Pleasant night; enough work, enough space, enough stories, pages were sent to the printing plant before the deadlines."

An opposite situation occurred when everything seemed to go wrong:

Evening report January 28 1996.

"What a Monday. The system went down after 9 P.M. and we did the pages on paper and tried -in vain to use the layout system. We happily cut and glued the paper together. The stuff we shoveled on the pages was not necessarily the high point of either Finnish journalism or Daily News journalism."

The first evening report follows an ideal script (Gutierrez, Rymes, & Larson, 1995) of how things should work out. But the second report points to disturbances in the expected flow and quality of material. These disturbances will be analyzed in more details in sections 4 and 5 with the help of the concepts provided by activity theory.

WHY FOCUS ON DISTURBANCES AND CONTRADICTIONS?

Activity theory and a network of activity systems

Developmental work research and activity theory (Engeström, 1987, Engeström & Middleton 1996, Chaiklin, et. al. 1999, Engeström et al. 1999) regard work as a network of multivoiced, contradictory, historically changing and artifact – mediated activity systems.

Activity theory, and especially developmental work research, analyses disturbances as a way to find deeper structural and historical contradictions in work practices. Disturbances appear as errors, problems, breakdowns, ruptures of communication, obstacles and so on. In short, distur-

bances interrupt the fluent flow of work.

In this paper the concept of disturbance is used as a general concept, that covers different kinds of disruptions in work and communication. 'Problem' is used to define a situation, where the participants have become aware of the disturbances and try to solve them.

Disturbances have been looked upon differently from the viewpoints of different research traditions. The cognitive approach focuses on individual actions and problem solving. Practical engineering and safety research emphasize the economic losses and safety-risks caused by errors (Norros 1996). Often they are treated as isolated incidents. Little thought is given to the possible consequences caused further in the organization or the work process. Norros and Toikka (1996) argue that disturbances should be thought of as essential features of the system, not just as something to be eliminated. So there are two ways to look at disturbances: as (1) a threat to the system; or (2) as opportunities for learning and development.

A difficulty in dealing with disturbances is their situated nature. A disturbance emerges as a problem only when an individual experiences it as a troublesome issue. It may be forgotten immediately and then surface again. Each individual has his or her own perception of what is a problem, and these perceptions are not necessarily commonly shared. (Toikka et al. 1993).

The developmental practices in Japanese organizations emphasize solving problems in a systematic way, linked closely to the strategic goals of the whole organization. Thus the status of problems changes as tools, processes and products are viewed from a systemic perspective. Since they impact the collective, they must be defined collectively. Finding the right solutions involves people from all levels of the organization. Problems are no longer solved randomly, but according to their importance in relation to the strategic goals of the organization (Ohno 1988, Adler & Cole 1993, Cole 1993, Toikka et al. 1993, Nonaka & Takeuchi, 1995, Cole 1998, Nonaka & Konno, 1998).

Hewett (1991) has pointed to the importance of failure analysis for human-computer interface design. He notes that very few papers on design refer to errors, maybe because it is difficult to admit failure. He emphasizes that human-computer design must not be compared with engineering design, because the interactive computing system design "involves an extension of functionality beyond what is already known". According to Hewett the designer does not often know how the product is used. He describes how bridge engineering has advanced in design because of design failures, from which it has been able to learn. In fact, Hewett suggests that if one is not making mistakes, one may be not creating anything new.

For activity theory the analysis of the disturbances in the workplace provides a method for uncovering deep, underlying tensions – contradictions – within the activity system and between a network of activity systems. The analysis of disturbances and contradictions is crucial as it points to the possibilities for change, to the zone of proximal development. (Vygotsky 1978). Thus the focus on disturbances and contradictions is crucial in understanding work practices. Contradictions are not just inevitable features of activity but central features:

"..any concrete, developing system includes contradictions as the principle of its self-movement and as the form in which the development is cast." (Ilyenkov 1977, 330)

A theoretical model of an activity system is used in the following chapters to analyze human activity. The activity system is depicted as a triangle, showing the subject of the activity, the object and the mediating tools. The model illuminates also the socially distributed nature of activity. The community, the rules of the activity and the division of labor describe the way work is organized towards the common object and its outcome – what is produced by the activity system.

Figure 2. Activity system (Engeström 1987)
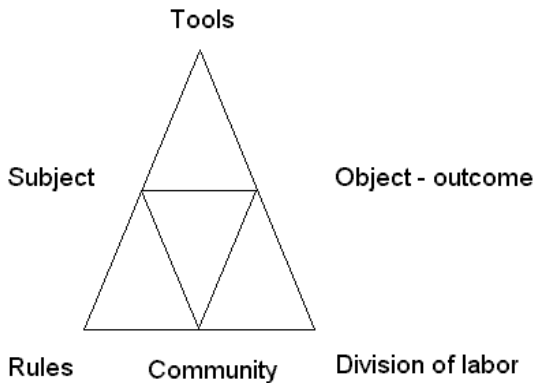
The activity triangle is not static, because change in any corner of the activity system results in changes in other parts of the triangle. For example a new tool, the pagination system at the Daily News, demanded new expertise from the subjects, it changed the division of labor between the newsroom and the typographers. It also results in changes in the outcome of the work, for example the outlook of the newspaper.

In the Daily News a new division of labor emerged, as some of the typographers were moved into the newsroom, and responsibilities for the control of whole pre-press production process were transferred to the newsroom. This in turn caused problems in the expertise and qualifications of the journalists. They had to learn to use a new complicated computer system for paginating the newspaper. New tasks took time away from reporting tasks, and the need to re-organize the work processes emerged as one of the central concerns in the Change Laboratory.

Activity systems do not exists in isolation. They are connected to neighboring activity systems, first of all, through the corners of the activity triangle. Taking the example of the Daily News, there are several activity systems participating in different ways in the production of the newspaper. They have different perspectives and interests on the object.

The object refers to the entirety of tasks and outcomes at which the activity is directed. It can be understood as the horizon of possible actions, which functions as the motive-force that drives the activity forward (Leontjev 1978).

Activity theory has been used to analyze how various groups of workers, management and clients bring their own perspectives into the multi-voiced construction of an object (Holland & Reeves 1996). Activity theory does not rely on notions of a commonly shared organizational culture or an unanimous goal, but instead regards work as a network of local, historically formed and

artifact-mediated activity systems. This means that the object of activity is regarded as evolving, heterogeneous and internally contradictory.

Taking as an example, the production of the Daily News Figure 3 describes the different activity systems and their main perspectives in the production of the Daily News.

Figure 3. A network of activity systems and their perspectives on the Daily News
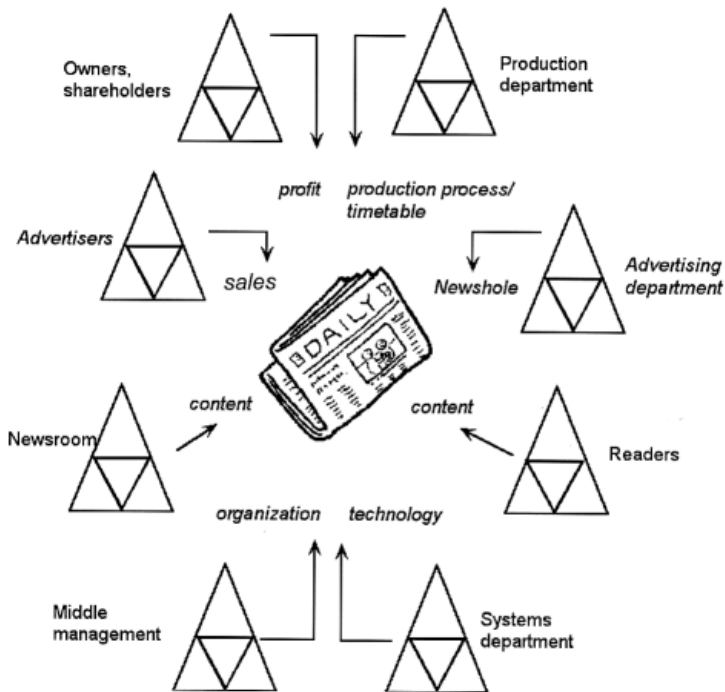
Charles and Marjorie Goodwin emphasize that what is involved in the activity is not simply a division of labor, but a division of perception (Goodwin & Goodwin, 1996). Attention is not on any single participant's perspective, but on multiple perspectives, which constitute alternative views on the systematic products of the organization

Leigh Star has commented on the fundamental plurality of organizations and their goals. It is the cause of disturbances, conflict and arguments, that affect the daily work.

"There is a fundamental pluralism in workplaces, including multiple trajectories of work, which give rise to incompatible viewpoints about what should be done in a situation." (Star, 1991, 84)

For Star there is no absolute right view; the workplace is full of ongoing negotiations.

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Disturbances and contradictions

Developmental work research makes an analytically important difference between disturbances and the underlying contradictions. Disturbances can be characterized as deviations from the normal flow of work and they can be tied to underlying developmental contradictions of the activity systems involved.

Engeström and Mazocco (Engeström & Mazzocco 1994) defined disturbances as

"...deviations from the normal scripted course of events in the work process, normal being defined by plans, explicit rules and algorithms, or tacitly assumed traditions. ...A disturbance may occur between people and their instruments or between two or more people. They appear in the form of an obstacle, difficulty, failure, disagreement or conflict. Identification of types of disturbances and ways of managing or containing them opens up a new layer of work for analysis -layer of constant negotiation and problem solving from below. "

Disturbances are inevitable and constitute the driving force behind change, writes Ilyenkov (Ilyenkov 1982). Individual deviations from the previously codified and accepted norms may be taken up by others and become a new norm. Thus the innovative potentiality is always present in disturbances.

"In reality it always happens that a phenomenon which later becomes universal originally emerges as an individual, particular phenomenon, as an exception from the rule. It cannot actually emerge in any another way. Otherwise history would have a rather mysterious for." (Iljenkov 1982, 83).

Contradictions are internal tensions inside an activity system. They are long-term, fairly stable tensions that can be made visible by analyzing disturbances.

Internal contradictions find their outward expression in external ones on four levels (Engeström 1987). The primary contradiction is between the use and exchange values between each corner of the triangular activity. For example a permanent topic of the journalist's discussions at the Daily News was the lack of graphics artists and the quality of the newspaper and, on the other hand, the pressure from the management to cut down the number of employees. Or as McManus (1995) puts it: a conflict between business values and news values.

Secondary contradictions appear between the corners of the activity system. In the Daily News the old division of labor between the paginators and the copy editors did not match the demands of increased cooperation, set by the new tool, the pagination system.

The next section describes how the concepts of disturbances and contradictions were used in the intervention called the Change Laboratory, to makes sense of the newswork.

Disturbances and contradictions as tools in the Change Laboratory.

The Change Laboratory was a new method for developing work practices by the practitioners themselves. Its aim is to combine both the systemic and individual aspects of work.
It is based on cultural-historical activity theory and comprises a method whereby disturbances are used as a tool for mapping the contradictions and, consequently, the possible directions of solving them. [3]

The Change Laboratory is a room or space on the shop floor furnished with a set of instruments for analyzing problems and bottlenecks of the work practice. A natural work unit or team uses the laboratory, initially with the help of an interventionist. The interventionist plays an important role, especially when intensive qualitative changes in work practice are needed.

According to Engeström's (1987) theory, the first phase in the cycle of expansive learning is questioning the present practice and problematizing some of its aspects. It is not only an intellectual process. To problematize the present practices the workers may also have to confront some problems emotionally in their activity.

The Change Laboratory at the Daily News consisted of ten two hour-meetings that were held starting August 1996 through October 1996. Experimental solutions such as layout teams, tools for planning and reflection were tried out in November. After the trial period, the new solutions were adopted on a permanent basis in December 1996.

In the Change Laboratory the focus was from the beginning on the systematic analysis of the disturbances and modeling the contradictions behind them. The first session began with listing disturbances and suggestions for their solutions on the whiteboards.

In the second meeting, every disturbance listed on the board was analyzed and transferred to the triangular model of activity by the participants of the Change Laboratory. The major clusters of disturbances to emerge were division labor, problems between artifacts and subjects (both technical and mental) and their relation to the object of the activity – what kind of stories the national news department should have on its pages.

The observations of four night shifts in August-September 1996 had also revealed that the division of labor was a major cause of disturbances. There were several breakdowns in the communication from the morning shift to the evening team. It was unclear who was responsible for keeping track of pictures and graphics. The problematic rules of the newswork, the relationships with other departments, and the problems with the new technology were also major sources of disturbances.

There were dozens of disturbances, and the solutions were almost without exception temporary and individual. The following excerpt is from our field notes from September 4 1996 and gives a picture of the type of problem solving.

...the error observation form worked well, we collected many ruptures and disturbances. The usual solution was a quick fix with the help of a super user or after a short discussion. The individual way of working and a short time span can be clearly observed in the problem solving. There are no messages left for the next day, neither are the causes of the disturbances dealt with. Many of the disturbances or problems could be solved really easily with a new shift meeting, clear rules about when work starts in the layout desk, clear division of labor in editing etc.

In the third meeting, the history of the news department was analyzed and, increasingly, the focus turned away from the technology towards the changing content and the quality of journalism as a reason behind many of the disturbances. The changes were discussed and modeled with the journalists.

Journalism at the national news department of the Daily News had been changing in the 80s from reporting the news events to giving background information for the daily news and providing "service journalism" for the readers (where to go, what to eat etc). In the 90s, the trend towards analyzing the effects of politics and economics on the daily lives of the citizens was becoming more prevalent in the content of the national news.

The historical layers of multi-voiced perspectives on journalism were made visible in the Figure 4, which was first drawn by the researchers as a preliminary hypothesis for discussion in the Change Laboratory. It was accepted by the journalist as a fairly accurate description of the changes in journalism. The discussion brought into surface the multiple conceptions people had about the object of their work. The different ideas of what is good journalism in the national newsroom brought into open an underlying contradiction that concerned the object of work. The major contradiction was found to be the tertiary contradiction between the old and the new conceptions of what is good journalism. The new object, depicted in the following figure, had also a new component – the responsibility of the pre-production process, which had been imposed on the newsroom after the purchase the new pagination system.

Figure 4. Changing object of journalism at the Daily News.
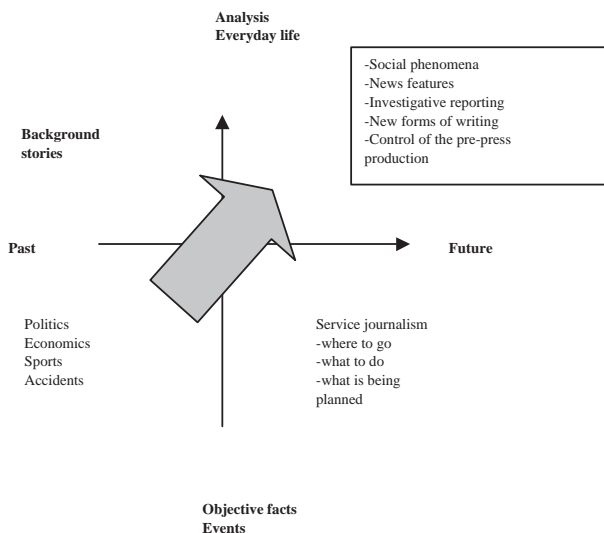
In the Change Laboratory discussions it became apparent that the main causes for disturbances were not the malfunctioning technology or some individual journalists. The main issue to emerge was the change in the object of the newsroom resulting in the unclear division of labor, ambiguous rules and unclear responsibility for the production of the news pages and the need for better planning. This directed attention to the systemic, collaborative aspects of the work in the newsroom.

The new pagination system was based on an idea of separate departments, groups or individuals working and producing the different elements needed on the pages –texts, pictures, graphics and the control of the deadlines (see figure 1). No attention was paid to how the texts, ads and pictures emerged before they were layouted on the pages. It is still not possible to follow the flow of elements of the newspaper on one computer screen. The picture system runs on Macs, the pagination system runs on Solaris and the text processor runs on dumb terminals connected to Tandem 80m central computers. The page planner needed to determine the number of pages and the placements of ads and the colors for the press run was based on PCs. Their incompatibility seemed to cause many of the disturbances mentioned in the evening reports.

PICTURE OF JOURNALISM IN FOUR EVENING RE-PORTS

The data of the disturbances for analysis consists of two sets of evening reports. Both cover a three-month period from the beginning of November to the end of February. The first three months of evening reports started on November 1, 1996 and the second set started on November 1, 1997.

The first two days of the evening reports coincided with the first two days of implementing the new evening teams designed in the Change Laboratory. The very first report paints a picture of a day shift that has done its part of the work: the stories were well written and there were good enough news stories. The division of labor between different news departments came up in the comment that political news took over the story of a pending strike of air traffic controllers.

First evening report, November 4, 1996.

"A genial evening, no panic at all, even though one copy editor started writing a story for the front-page. The situation was made easier because we had a third copy editor -a trainee."

"We did not find much to do in editing. The topics for the front-page came up almost by themselves, they were the only ones possible. If one does not take into account the threat of stopping the air traffic. As it belonged to the political department, we put it on the inside pages."

"We kept the timetable quite well; all pages were ready before the deadline."

"For the next day we left at least some more digging to be done on the medals of Pajari: How will Sotheby's react to the problems that emerged in Finland, and will they have any effect. P.Y from London promised to try to find out."

The first evening report described a disturbance in the division of labor and rules in the new team concept. Members of the evening team were not supposed to write their own stories during the evening shift, as they had done before. They should have concentrated on editing the stories and keeping an eye on the breaking news stories. If someone had to write news stories in the evening, they should have gotten another copy editor. The reason for the change in the rules was that there were now two people less in the evening team than before the team experiment.

Interestingly enough, the responsibility for keeping the deadlines was also mentioned as a topic, even though it was not listed as a disturbance that day. In the last paragraph, the morning shift was reminded also to follow up on the news, and information was passed on about what should be done the next day. This transcended the notion of a journalist being responsible only for one's own story and one day at a time.

Several topics emerged in the evening report above. The topics mentioned are editing (paragraphs 1 and 2), rules (1), content (2), timetable (3) coordinating (2) and planning for the next day (3).

The second evening report describes a more hectic newsday than the first report. The evening reports show how the days in the newsroom can differ from one another.

Second evening report, November 5 1996.

"Fitting the departmental front page was pretty hard: we polished, we shuffled things around, and we deliberated, and invented awkward solutions. Even the selection of the stories for the pages presented problems. We made decisions in a panic. "

"The work floundered at all levels when building the opening page for national news: we shortened, lengthened, commissioned strange maps and pictures to fill the page. Some of the stories came late, normally they are finished when the evening team starts around four or five o'clock."

It seems that something had been gone wrong in the planning of the news stories, as there were no proper stories for the front page, and they were the wrong size for the department's opening page. Stories arrived unusually late, without any reason given. Neither is there any indication that there may have been sudden news events that caused the delay.

The first paragraph shows several disturbances. Daytime planning for the national news front page had been problematic and decisions had to be made in a panic by the evening shift. The stories were not up to their standards and a lot of editing had to be done, also because the news stories did not fit into the national front page properly. Lack of planning and coordination was evident with the graphics and pictures, which had to be hastily commissioned by the evening team. The deadline problems were caused by an unexpectedly late arrival of the stories. The problematic themes appear to be layout, planning, story length vs. newshole, pictures/graphics, editing, deadline and the quality of the content.

The first two evening reports reveal the collaborative and complex nature of the work of journalists. The focus is not only on individual stories, but also on the whole production process of a daily newspaper.

These two excerpts from the evening reports show that the work in the newsroom consists of more than individual journalists working on their stories. Fitting the news stories into the newshole left by the ads, keeping the deadlines, sending pages to the printing plants, choosing the main stories for the front page, editing stories and continuing them the next day and planning the newswork are all part of the work of the journalists in the newsroom. Collaboration between the different actors is needed to perform all the tasks assigned to the newsroom.

The need of looking further ahead for more than the next 24 hours featured strongly in the Change Laboratory discussions. Many of the disturbances discussed in the Change Laboratory were interpreted as caused by the lack of long term planning by the editors of the national news, but it was agreed that they occurred also because the individual journalists were not used to taking responsibility for the planning of the newswork.

The necessity for more collaboration is shown in the disturbances that result from bad planning and breakdowns in the communication of the newsroom. If the advance planning of the content had been inadequate, the outcome is what the evening report of 5.11.96 describes.

The last two evening reports of the data deal with same kinds of disturbances as the first ones.
Evening report of January 31 1998

"The evening pulsed with a normal beat. We dismounted a block of short news from the opening page as the managing editor wanted to put the new manager of the company X (name deleted by author) prominently on the opening page. Police calls were uneventful, one fire alarm to an apartment building at 1.15. A.M, and again we were stuck with waiting for information about it. I left at 1.45 am, the fire was under control -so no story."

The excerpt above brings forward a new actor. The managing editor had made a decision late in the evening about placing a news story more prominently than the national newsroom had done. It meant dismounting stories from the opening page and inserting a new story.

The reference to the police beat points to a division of labor between the national news and the metropolitan news. Calls to police stations after midnight were the responsibility of the national news, as the national news had one reporter and one layouter available until 1.30 A.M. Before midnight the handling of the crimes and the accidents had to be coordinated between the national and the metropolitan newsrooms, because it was not always clear which stories belonged to which department.

Disturbances in planning the news stories and pictures were described in the following evening report that paints a picture of a busy news day with many breaking news.
Evening report, January 30 1998.

"A really busy evening and full of work. A lot of work was caused by the winter season's traffic accidents, which had not been handled properly. At 8.20 p.m. we had to call about the accidents that had happened already at noon, e.g. a traffic accident at Vehkalahti involving 13 cars, about which we had the first information from TV-news. Neither had the storm in Ahvenanmaa been taken dealt with, even though they were in big trouble there."

"The gas-truck made it to the front-page, even though it was mentioned as an unimportant thing in the afternoon. We sent J. (photographer) in the evening to track whether it would blow up or not."

A closer reading of the evening report shows that the hurry was caused by the erratic work of the dayshift. Dissatisfaction with the bad planning was clearly expressed in the sentence that ends " … accidents, which had not been handled properly". Also misinterpretation of the news value of

the truck accident caused extra problems for the evening team.

In the next section it is argued that the evening reports are important data for finding out disturbances and the underlying contradictions in newswork. However, though a lively picture emerges from the evening reports, analyzing the problematic situations in the error reports alone is not enough for getting sufficient understanding of news work. Thorough ethnography is also needed to help make sense of the facts behind the evening reports. For example, the truck incident caused problems in the newsroom, owing to the reduced number of staff in the local offices. There was no permanent correspondent available in the area but, in an innovative way, a freelance photographer was alerted and assigned to cover the incident.

SIX MAIN THEMES OF DISTURBANCES

The issues of coordination and planning emerged as important topics already in the first two evening reports. Other topics in the evening reports included disturbances with pictures and graphics, the quality of the news stories, poor planning, computer problems and so on. In analyzing the evening reports, 27 different categories of topics were established. They were compressed in the final analysis into six major themes, which correspond to the activity systems and different perspectives involved presented in Figure 3: profit, content, newshole organizing/planning, process/ timetable and technology. These categories correspond to the different perspectives of the different activity systems.

Looking at the activity of publishing the Daily News from the viewpoint of the national newsroom, as described in the evening reports, two perspectives were missing: the audience and the advertisers sales perspective. The latter is however embedded in the negotiations of the newshole, the division of space between ads and news stories. The concern for the quality of the news stories could reflect concern for the audience, but it could also reproduce taken-for-granted professional and in-house norms about what is good journalism. However, the word audience or readers was not mentioned in the evening reports. In other research data it emerged sporadically, for example the weekly meetings addressed the issue of keeping the readers interested with shorter stories and clear layout.

Profit emerged as a theme only a few times. Complaints about the lack of people or resources were put into this category in the analysis of the disturbances.

Issues of profit represent the contradiction between use value and exchange value and are dormant in all the corners of an activity system. The financial situation of the Daily News was quite secure, and the issue of economics was not a major topic, more like a nuisance sometimes to the newsroom.

Content was about the substance of journalism and included topics usually associated with journalism: the quality of the news stories and features, editing the stories, pictures, graphics, layout, style of writing and competition with other media.

Ads and the newshole emerged as a constant source of disturbances. The restricted space, called the newshole, between ads and news stories, derives also from the profit and sales motives. The number of ads had been increasing and the space for news stories shrinking. The disturbances revealed a need for a more modular way of thinking about news stories. Timeless shorter stories would have been needed often to fill the news hole. To solve the problem of the variable

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newshole, the national news developed non-daily, non-news stories, for example "We have read" reviews about non-fiction books or reports.

Technology theme consisted of technical problems with the text and pagination systems, sending the pages to the printing plants, and problems with coding the texts.

Planning and organizing as a category was developed during the data analysis. Descriptions of forgetting to order graphics or pictures, lack of news stories for the front page, lack of short stories to fill the newsholes are examples of disturbances that could have been prevented if the work had been better planned and coordinated.

Timetable and production process emerged as a new task in the newsroom with the new pagination system. It included topics like delays in the deadlines, the ads arriving late to the pages, early deadline for color and the problems with the page plan of the whole newspaper.

The two sets of the evening reports from 1996-97 and 1997-98 have been analyzed and compared for themes in figure 5 below.

Figure 5. Themes of disturbances in the evening reports.

	1996-97		1997-98	
Themes of disturbances	Occurences	%	Occurrences	%
Production timetable	138	32%	52	25%
Content	102	24 %	47	22 %
Planning/organizing	91	21%	48	23 %
Newshole	45	11%	27	13%
Technology	43	10 %	33	16 %
Profit	7	2 %	3	1 %
All together	426	100	210	100

The analysis of the evening reports shows clearly that the work done in the newsroom by the journalists is not just about producing the news stories. The percentages of disturbances in the main themes remain at the same level in the two sets of evening reports from 1996-97 and 1997-98. This strengthens the suggestion that journalistic work should be analyzed and understood as a complex work process combining both the writing and illustrating of the news stories, but also the planning and organizing newswork in connections with the production process of the newspaper.

The linear model (Figure 1) of the flow of materials through the pre-press production process emerges in the evening reports as non-linear and much more complex. Layout desks emerge as the central points in the production of the newspaper. Also the materials, the three lines of the depicted in the production flow – texts, pictures and ads – are produced in collaborations and negotiations between the different activities, actors and their interests before they are handled by the layout desks. The whole process of producing news stories has to be planned and organized, not only for the daily 24-hour cycle, but also for longer-term contingencies. The collaborative aspects of work and its tensions are made clearly visible by the evening reports.

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The different perspectives of the participants involved in producing the daily newspaper have a clear effect on the work done in the newsroom, whether it is the reporters, copy editors or the paginators. The themes of profit and the newshole that emerged prominently shape the whole process of news production, from the first ideas for news stories to their placement on the pages: how many people are there to do the work, how is the work organized, what is the space left for the news stories, what kind of technology has been purchased?

Production process and timetable

Responsibility of the production process and disturbances with the planning of the news work feature prominently themes. Taking care of the production process makes up 32 percent of the disturbances in 1996-97 and 25 percent in 1997-98.

The emphasis on the production process and planning is due to the fact that the unit of analysis is the evening shift and the evening report. Another reason was the new pagination system, which had brought the responsibility for keeping the deadlines of production into the newsroom. In the daily morning and afternoon meetings of the newsroom, the topic of discussion centered mainly on the daily news stories.

In a closer analysis there were 55 disturbances (out of 183) with the deadline in the first three months of evening reports, a year later the figure was only 22. In 1996-97 the deadlines of the pages were missed 60 times, over two thirds of the days. A year later the number had diminished to 16 missed deadlines.

The new tasks of the newsroom are not necessarily only 'time taken away from journalism', as Underwood (1988) claims. For example, being able to tryout different layout plans on the computer screens, and the ability to perform the actual pagination in one place saves time in the evening. It means more work for the layouters but is also leaves more time for editing the stories and inserting breaking news stories.

At the Daily News the pagination system also gave complete control of the quality of the pages to the journalists. It was thus easier than before, to control the quality of the pages in the newsroom (Russial, 1989). The new pagination systems made it easier for the whole evening team to work together in solving problems or discussing how to highlight the most important news stories.

In the videotapes of the national news layout desk, dozens of gatherings occurred, when copy editors, paginators and reporters discussed around the pagination screen to discuss the content and headlines, how prominently the stories should be placed and what pictures to choose. To make the collaborative communication easier the architectural plan for the layout desk was revised during the Change Laboratory.

Newshole

Disturbances concerning the newshole, the space left for the news stories after the ads had been placed on the pages, was mentioned in the first dataset 45 times out of 426 disturbances, making it 11 percent. It was mentioned 27 times out of 210 disturbances a year later and the percentage was about the same – 13.

Disturbances with the length of the stories (16 and 6 occurences) are associated also with the newshole, though they are included in the planning themes. Long stories were difficult to fit in between the numerous ads filling the pages. The problem dates back to the late 80's when the

revenue from ads dropped during the recession. The space for the news was reduced, and the editor-in-chief introduced the concept of a yearly news budget. This meant that the yearly amount of newspaper pages was restricted. When the number of ads started growing again in the middle 90s, the strict page budget allowed less space for news on the pages, in other words the newshole shrank.

The figures show how the same set of disturbances occurred concurrently, that part of the disturbances experienced in the newsroom is related to the ads and their placement on the pages. To be able to reduce the number of disturbances concerning ads and the newshole, there should be better interaction at least with the news department and the ad department, also through a shared database visible to both parties.

Planning and organizing

Disturbances in planning and organizing made up a little less than a quarter of the disturbances. The number came down from 91 to 48, but the percentage of the occurrences remained almost the same - over 20 percent of all disturbances.

As discussed earlier, planning, or lack of it, was not mentioned as such in the evening reports. For example on December 26, 1996, the evening report stated "there were pictures available only for the front page". Usually the reporter, the editor of the dayshift and the picture editor discussed illustrating the news stories already when the story ideas come up and again after the stories were assigned. There should have been pictures and graphics for all the major news pages of the newspaper. In the analysis this kind of disturbance was defined as a disturbance of planning, and also as a disturbance with pictures.

Disturbances in communication – ruptures – occurred 19 times in both years. People had forgotten to tell about the plans and decisions made during the daytime. There was no way of finding out the status of the different elements intended for the news pages – page plan, ads, texts and pictures. The national newsroom had access only to the text and pagination systems.

Another source for disturbances was difficulty with the length of the stories (16 and 6 occurrences). They were either too short or too long for the variable newshole. The demands of the newshole should have been taken into account in planning and assigning the stories as there was only a certain amount of space for longer stories, and a constant need for short stories.

Content

The quality of the news stories was the main source of disturbances in the theme of content, which also comprised about one fourth of the disturbances – 24 percent and 22 percent. During the year between the evening reports the number of disturbances went down by half also in this category. Quality was mentioned 26 times in the first three months of evening reports and 14 times a year later.

Disturbances with the pictures diminished from 22 times to 8, and with the graphics from 18 occurrences to 4. One reason for the latter was the move of the graphics artist to the national newsroom from the graphics desk.

Technology

Technology, which seemed a big issue in the beginning of the Change Laboratory, was only 10 percent and 16 percent of the disturbances. Out of 43 occurrences 30 were concerned the new pagination system in the 1996-97. A year later the numbers were 25 out of 33.

One reason for the prepositional increase in the technological disturbances may be the ongoing integration of the layout with the advertising system and the printing plants as this caused several new software and hardware problems.

Profit

Complaints about too few people in the evening shift plus the graphics and picture desk are attributed to the profit motive of the owners and top management. The issues came up 7 times in the first year and 3 times a year later.

From disturbances to collaboration

During the first three months of the evening report there were 426 disturbances. A year later the number had been reduced to 210. An exact answer cannot be given to explain the phenomenon without comparing the decrease of the disturbances with videotaped data from the evenings. It is tempting to accredit the Change Laboratory for inducing the change. But change could also be due to new practices in writing the evening reports. Some disturbances can become so 'ordinary', that they are not worth mentioning anymore. However changes in some of the themes, like decreasing planning problems, could be the result of using the new planning tools devised in the Change Laboratory.

The question of causation is, however, not the main topic of this paper. Emphasis in the analysis of Figure 5 is on what the evening reports reveal about the everyday work of the newsroom.

The disturbances evident in the evening reports indicated that individual journalists were part of a materially mediated, situated system of news production. The newsroom was responsible for the whole pre-production process – whether journalists liked it or not. Also the traditional journalistic work process was rife with disturbances, hence the need for coordination and advance planning. If a story was badly written or turned up late, it caused problems for copy editing, layout and deadlines.

So the whole pre-press production process set demands for the journalists: the stories should be turned in as early as possible, in mint condition, complete with pictures and graphics. There should be enough stories to fill the pages and they should come in variable lengths to fit the daily changing newshole.

Improving journalism and the technology used in the newsroom is dependent on what is known about the work of journalists and its connection to the over all system of newspaper production. Isolated individuals can indeed be made to feel unprofessional, disempowered and nonqualified. However, defining journalism, work in the newsroom and journalistic expertise as a field of contested negotiations opens up possibilities for resistance, negotiations and change.

The content of the field of negotiations in media organizations vary historically and locally, for example the evening reports of the Daily News point to six major fields of negotiations: profit, content, newshole, organizing/planning of the news work, technology and production process and its timetable.

In the case of the Daily News, competition with other media and the declining readership were not central issues discussed in the newsroom, but in some other newspapers they surely are. The relationship with the local readers was distant, as the Daily News is a national newspaper, and has a practical monopoly in the nation's capital. In some other newspaper local advertising

and a dialogical relationship with the local readers may be more crucial for the survival of the newspaper.

The fields of negotiations and their relative importance are not universally predetermined, they are dependent on local conditions. The relationship of disturbances, fields of negotiations and contradictions in journalism is addressed in the next section. The aim is to show how understanding why and how journalism has changed and where it might be heading, is made possible by analyzing newswork as a disturbance filled activity system, where contradictions are the driving force behind the changes (Ilyenkov, 1977).

DISTURBANCES AND THE CONTESTED FIELD OF NEGOTIATIONS

It was suggested in the beginning of this paper that the contradictions and the heterogeneous object of work can be made visible by analyzing disturbances. The contested field of negotiations in the Daily News was modeled as consisting of eight major activities, each with their own perspectives on the object, which have already appeared in the preceding chapters: profit, content, sales, newshole, production timetable, organization/planning and the audience. The fields were based on the review of the research on journalism and the data from the research in the Daily News. The only activity missing in the disturbance data is the readers, as the advertisers and the sales motive is combined in the analysis of disturbances with the issues about newshole.

The activities and their different perspectives are re-presented in Figure 6. They form a contested field of negotiations on the object of their activity: owners and top level management and their main object as profit, newsroom and readers and content, advertisers and sales, advertising department and the newshole, the systems department and technology, and the middle level management in the newsroom (organizing/planning), production department (process timetable) and the audience (content as both ads and news stories).

The different actors and how their different objects emerge as themes in the evening reports are presented in Figure 6. The parties involved are in italics and their main objects are in capital letters. Below them are the major topics of disturbances to come out in the evening reports.

Figure 6. The contested field of negotiations and the topics of disturbances based on the evening reports.

Owners/top management **1. PROFIT** -number of employees -page budget	*Advertisers* **3. SALES** -ad placement -timetable	*Systems department* 5. **TECHNOLOGY** -malfunction -integration	*Production department* **7. PRODUCTION PROCESS AND TIMETABLE** -deadlines -ad producti on
Newsroom **2. CONTENT** -quality of the texts -pictures and graphics -fitting the newshole	*Advertising department* **4. NEWSHOLE** -timetable of ads -color placement	*Middle management* **6. ORGANIZING AND PLANNING** -planning -rules -coordinating -division of la bor	*Audience* **8. CONTENT JOURNALISM AND ADS** (The audience is missing from the evening reports)

1. Profit

In the first set of three months of the evening reports, the issue of too few people came up seven times, and in the second set, it emerged three times. Below some comments dealing with the issue are presented from different evening reports:

"Need more people in shifts, especially in the graphics department."

"Complete understaffing in the graphics department. This slowed down the layout of pages and caused problems with deadlines. We asked for a filler ad to cover the hole made by the unfinished graphics."

"Eight frames, horrible. Workforce was miscalculated, there were too few of us. The space was completely unsuitable: on the eight frames there were too many places that ate up one- and two-column stories, which were not available. We could not use big articles with color pictures... Taking the problems into account we did not miss the deadlines by too much."

For activity theory and developmental work research the tension between profit and content forms the basic contradiction between the exchange value and use value that is behind the turmoil in and between all corners of an activity system.

2. Content

The concern for the content and the quality of the news stories showed clearly in the evening reports. However it was not explicated why the stories were unsatisfactory.

The problems with content were two-fold. The copy editors complained that the individual stories were not good enough, so the stories had to be edited heavily, the headlines needed rewriting and so on. A recurring situation, which also occurred, was when the evening team thought the stories were not good enough for the front-page.

Complaining about the quality may also reflect the different conceptions of what is a good news story, which are presented in Figure 4. Also problems with uninteresting or completely missing pictures and graphics occurred frequently. The following citations are excerpts from longer evening reports.

"We did not publish the story about Lithunian refugees, because it contained no new information, compared to the story we already had in the paper."

"We had to scratch our heads because of the situation with the pictures for the front-page. There were only bad or worse alternatives."

" A peaceful night... the only thing missing were the right stories for page A5 (opening page of national news)."

"We were dead tired at 10 PM and we were sorry that, in the afternoon, in the daycare story, the children's opinion had not been asked, and that there is no picture for the story, neither is there a picture for the story about snow, nor about the disabled person."

3-4. Newshole and ads

Disturbances with the newshole and the ads tell how the situation varied daily, and how important this often overlooked issue also is for for the content and quality of journalism. The issues about ads are closely tied to the need to take into account the whole process of news production in the newsroom planning of news stories. Otherwise rushed decisions by the evening are the only remedy available.

Sometimes the newshole was too big, some other times it was too small. Or it could change suddenly, as can be seen from the excerpts from evening reports.

"We had too much stuff, even some daily news had to be left over, but on the other hand we had to shorten some stories quite a lot. The stories and the pages were not compatible, the stories had to be tried out on different pages."

"We lost a color page to ads and had to repaginate 'Home'-story on different page."

"We had more space than we asked for. We used a filler ad."

"The number of pages and the form of the newshole forebode trouble, and that is what happened."

5. Technology

Technical problems with the new pagination system were sometimes quite serious, and a couple of times the pagination system went down completely and the stories had to be pasted onto the pages with knives and glue. Also problems with sending the pages to the printing plants plagued the evening team. Transferring the stories from the text-system to the pagination system did not sometimes work properly.

"The machines crashed several times, we almost lost ur heads, we almost went crazy, even crazier than before, however, we missed the deadlines only by a few minutes."

"For some reason page A10 did not want to go to the printing plant."

"There were also small problems with the machines, Because the stories did not go through to CCI, we had to transfer them again and again and so on. "

6. Organizing and planning

Planning the newswork was a major source of disturbances. The daily changing size and shape of the newshole put increasing demands on the advance planning of news stories, and the need for a reserve of 'timeless' news stories of varying size and type.

"We had a colossal lack of shorter stories and pictures, especially as the space on page A6 was again a surprise"

The departmental front page, on the other hand, needed bigger stories with color pictures and graphics. The inside pages, which were filled with ads, ate up a large amount of shorter stories and were not for long stories with pictures.

Planning news in advance also came up several times in the Change Laboratory meetings and also in the weekly meetings. The whole idea of planning news in advance goes against the grain of the traditional news-driven journalism. A journalist commented in the Change Laboratory:

"I mean, it is against all reason to plan news, we are a news department, it is a crazy idea."

Lack of news stories for the front page was a problem, because national news had shifted towards more news features, and did not always have the hard news, which the managing editors and some of the journalists wanted. Another part of the planning problem had to do with the increasing visualization of the news features, the responsibility for which was unclear between the reporters and the news editors. There were also too few graphical artists.

Excerpts from evening reports described some of the problematic situations, which can be attributed to the lack of planning and coordination.

" A peaceful night... the only thing missing were the right stories for page A5 (departmental front-page)."

"The graphics for the ship-story did not arrive until the color-deadlines were past (on Monday), but the graphics were ordered, after all, as late as last Friday."

7. Production and timetable

In the evening reports, the production process and timetables (deadlines) of the pages caused most of the disturbances. Sometimes things went so well that it was worth mentioning, sometimes the evening was nearly a catastrophe.

"The deadline for the first color-page was beastly: 6.20 P.M."

"For a NEWS paper the deadlines were far too early, but luckily we did not have any news."

" Last page was late 20 minutes because we forgot to send it to the printing plant."

The flow of material consisting of the page plan and printing run, the texts, pictures, graphics, and ads is a fairly complex chain of production that includes many people and different technologies, so it is no surprise that many disturbances occurred there.

The production processes internal to the newsroom, like ordering graphics and pictures, are included in the planning category.

8. Audience was missing from the evening reports as mentioned earlier.

On the basis of the information gained from the analysis of the evening reports, a preliminary hypothesis of the central contradictions in the activity system of the national news department at the Daily News is presented in the next section.

FROM DISTURBANCES TO CONTRADICTIONS

The purpose for the analysis of disturbances at work is to find out the recurring problems and persistent tensions that point to deeper structural contradictions.

The focus in this paper is on the newsroom, so the contradictions are analyzed from the viewpoint of the newsroom. The disturbances gleaned from the evening reports point to contradictions between several corners of the activity system of the newsroom. The contradictions are presented in Figure 7.

The main focus of contradictions appears to be in the new object of the work, both new kinds of journalism and new tasks of production control. To understand the importance of the changing object a short summary is presented about what happened in the Change Laboratory intervention.

The discussions in the Change Laboratory began mainly with airing the problems caused by the new technology. The discussion was soon transformed to another level centering around the new object of the activity: what kind of news stories should the pages contain, how the pages should look like and how the work should be organized to reach the new vision. A preliminary consensus was reached in the negotiations about 'good journalism' and it was agreed that more news features about the everyday life of the citizens were needed, but so were also news stories about the long-term changes in ongoing in the society.

The multifaceted nature of news production was modeled and discussed, because the new kinds of news stories were possible only if the way of working was also organized anew. New evening teams were devised to keep the evening shift as small as possible, and to have as many people as possible writing and researching for the more analytical news stories.

To conceptualize the contradictions that point to critical areas of developmental possibilities in the activity system of the newsroom, the major contradictions are presented in Figure 7 in the activity triangle of the national news department.
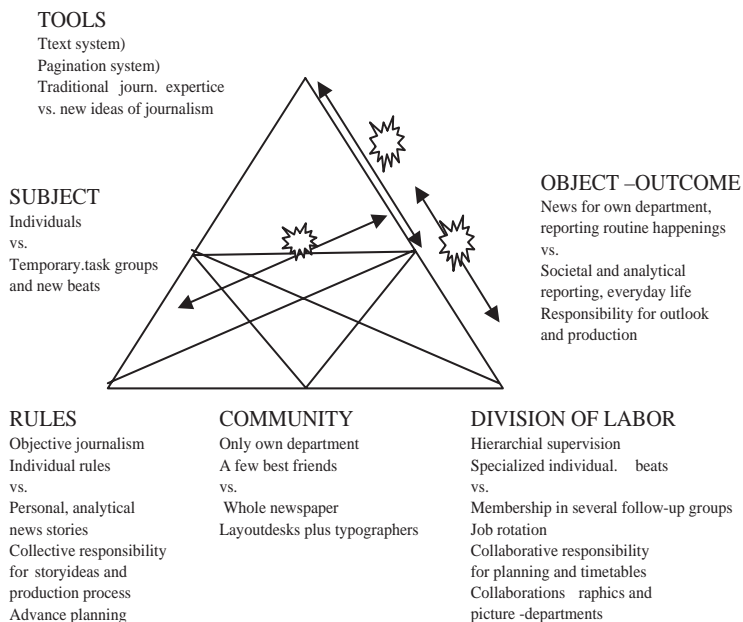
The arrows in the triangle depict the major contradictions between corners of the activity systems. The contradiction between tools and object deals both with concrete tools, like the new pagination system, and the mental concepts of what is good journalism. The three main contradictions depicted in the triangle in Figure 7 have to do with the changing object of the activity. The figure illustrates the centrality of the object of the activity: new kinds of stories and new tasks for the journalists.

The new, agreed upon object of societal reporting, clashed with the old ideas of event-based news, and the quality of the news stories was varying according to the evening reports. More analytical 'societal reporting', also meant changes in the old individual way of working. Project groups, longer daytime periods for writing and new beats were introduced to help produce the new object – societal reporting.

At the same time news tasks and responsibilities were imposed upon the newsroom with the pagination system. The arrow between the object and the rules depicts the problems encountered with the responsibility for keeping the production timetable, which was to become a common object for all the journalists because of the new pagination system. Also the new way of organizing work into evening teams with less people than before, imposed a new rule: in the evening shift people should only concentrate on copy editing and layouting. The reason for the rearrange-

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ment was the new object, more analytical news features, which in turn demanded more time for writing the stories.

Figure 7. Contradictions in the national news department

TOOLS
Ttext system)
Pagination system)
Traditional journ. expertice
vs. new ideas of journalism

SUBJECT
Individuals
vs.
Temporary.task groups
and new beats

OBJECT –OUTCOME
News for own department,
reporting routine happenings
vs.
Societal and analytical
reporting, everyday life
Responsibility for outlook
and production

RULES
Objective journalism
Individual rules
vs.
Personal, analytical
news stories
Collective responsibility
for storyideas and
production process
Advance planning

COMMUNITY
Only own department
A few best friends
vs.
 Whole newspaper
Layoutdesks plus typographers

DIVISION OF LABOR
Hierarchial supervision
Specialized individual. beats
vs.
Membership in several follow-up groups
Job rotation
Collaborative responsibility
for planning and timetables
Collaborations raphics and
picture -departments

The third arrow also points to the contradictions dealing also with the object, it is drawn between object and division of labor. Job rotation between the tasks of a reporter, copy editor, evening foreman (listman) and layouter had removed the task of the former national news evening editor. The new evening teams of journalists and typographers was responsible for the quality of the news stories and the production flow.

New kinds of stories demanded more cooperation between reporters. Instead of closely guarded individual newsbeats, people had formed new follow-up groups that did not anymore follow the functions of bureaucracy. People also belonged to several groups, so the work force was quite flexible. The new division of labor crossed the departmental boundaries and the reporters were writing for other departments also.

The division of labor between the daily news editors and the evening shift became much more problematic. Disturbances with planning the news stories and their pictures and graphics became clear in the evening reports.

The three major contradictions illuminate what journalistic work consists of in the Daily News. Besides the reporters writing news stories, one should take into account the whole work process of publishing a daily newspaper, especially what is published and why.

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CONCLUSIONS: WORK IN THE NEWSROOM

The findings from the evening reports give a broad picture – in the journalists' own words – of what journalists do, what actions are necessary in the production of a newspaper and what kind of work should the computer systems be designed to support.

The work process that the pagination system had to deal with was modeled in Figure 1 as three linear production lines. There the ads, texts and pictures arrived from somewhere into the pagination system, and the ready-made pages were sent to the printing plants by the production manager and central editors.

The picture gleaned from the evening reports is much more complex and multifaceted. Most of the disturbances confronted by the evening shifts in the layout desk were caused by what was not included in Figure 1. In the evening reports planning and coordinating news texts and pictures turned out to be problematic, as did the negotiation of space between ads and news stories. It was quite impossible to follow the production process and keep the deadlines, because the information was in different computer systems that were inaccessible to the newsroom and layout desks.

The evening report and the disturbances point to the possible zone of proximal development -new minicycles of interventions and development could include the functions of the morning shift, especially planning and organizing the news work. Also the relationships with the neighboring activity systems like the ad department and the printing plants could be explored to solve some of the recurring problems dealing with the production of the newspaper. Developing computer based support for the integration of tasks needed to produce the daily newspaper could be the next challenge for computer systems design.

The intervention that began originally with the introduction of new computer systems turned in the national newsroom into an intervention about what is good journalism and what the work of journalists consists of (see Figure 4).

The news object of work, societal reporting and pagination, caused numerous disturbances. Modeling the disturbances in the activity triangle revealed three major contradictions as sources behind the disturbances.

The work of the newsroom, ad department nor production department were not analyzed before the implementation of the new pagination system, and thus the new information technologies did not give proper support for the actual work done by the journalists in the newsroom.

Focusing on the disturbances that happened in the newsroom illuminated the formerly unarticulated aspects of the daily work in the newsroom. Careful analysis of the evening reports revealed that before the news stories reach the readers, they have to pass through a complex, intertwined system of people, material artifacts, actions and negotiations. The different participants bring their own interests and perspectives towards the object of journalism with them (Figures 3 and 6).

The new pagination technology shown in the tools corner of the activity triangle (Figure 2) caused many disturbances in the newsroom. Analysis of the contradictions from the viewpoint of the newsroom revealed in Figure 7 that the major contradictions, however, centered around the contested and changing object of the activity, what is good journalism, and the task for the production process brought by the new pagination technology. The new object necessitated different conceptual and material tools, new rules, new division of labor and new ways of organizing the newswork.

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The work activity of the newsroom was not investigated in detail in the planning phase of the pagination and database systems. This in turn caused numerous problems, which are discussed in the evening reports around the themes of planning/organizing, newshole and timetable/production process. The computer system did not offer solutions for the main disturbances.

Focus on the actual work done in the newsroom could have brought the above mentioned disturbances and contradictions into public discussion and facilitated the design of new computerized tools that would support the newsrooms in producing a daily newspaper in collaboration with whole production process involved in producing a daily newspaper.

Notes

[1] See also the special issue of Computer Supported Cooperative Work, vol. 7 (3-4).

[2] The three researchers Jaakko Virkkunen, Merja Helle and Ritva Poikela were from The Center for Activity Theory and Developmental Work Research, University of Helsinki, Finland.

[3] The following summary of the Change Laboratory method is based on the article by Virkkunen, Helle Poikela (1996). For a comparison of different laboratory methods for workplace development, see Engeström, Virkkunen, Helle, Pihlaja, Poikela 1996.

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