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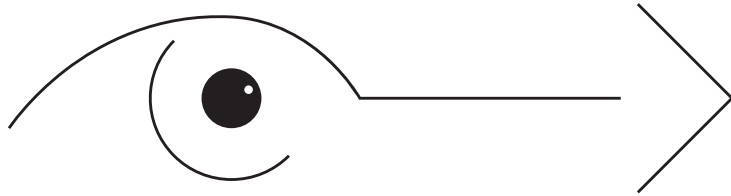
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august 2018

# Visible Language



Before there was reading there was seeing. *Visible Language* has been concerned with ideas that help define the unique role and properties of visual communication. A basic premise of the journal has been that created visual form is an autonomous system of expression that must be defined and explored on its own terms. Today more than ever people navigate the world and probe life's meaning through visual language. This journal is devoted to enhancing people's experience through the advancement of research and practice of visual communication.

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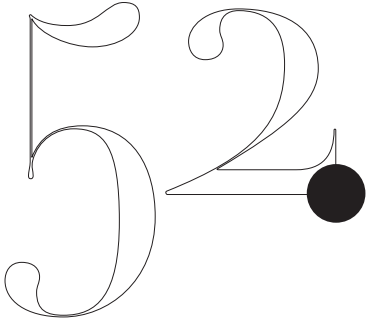
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**BOOK REVIEW:**
*Design Theory To Go by Sharon Helmer Poggenpohl*

Mike Zender

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Sometimes research creates breakthroughs that shatter paradigms. Sometimes research supports and affirms what's already known. Every journal hopes to publish a constant stream of breakthrough articles perhaps to the neglect of the necessary but less hair-raising articles that confirm, affirm, and probe what's thought to be known.

This issue presents three important articles that are closer to the latter than the former. Brian Switzer's nice study confirms the ways and means that design research contributes to complex problems in the mundane context of caring for the aging and dying. Hospice care called for help and Brian's designers brought their naive eyes and design research methods to bear and identified numerous possible interventions.

Rodrigo Ramírez's work affirms the usefulness of established comprehension testing protocols in the development of open-source icons for use in emergency situations. The nature of a crisis reinforces the need for designers to employ performance measures for supposedly "universal" icons.

Emma Fisher, Nicolette Lee, and Scott Thompson-Whiteside's study tests the assumption that design practitioners and design academics see research differently. Their conclusions confirm the original assumption in many ways while adding important nuance leading to proposals to advance collaborations between practicing designers and academic researchers.

Pino Torgu's challenge to conventional wisdom, that representational pictures of data enhance comprehension, probes Otto Neurath's Isotype and concludes that counting rows of pictograms is not as effective for reaching a total as reading an arabic number.

These studies confirm the usefulness of design research to practice and support their integration. The articles are another step away from glory in beautiful graphics alone to pleasure in the demonstrable integration of beautiful and useful work Paul Rand envisioned in his 1970 breakthrough *Thoughts on Design*.

One step, one study at a time, Design is passing from adolescence to adulthood.

Mike Zender

# research complex

## Using Design Research for a Better Understanding of Complex Problems:

*a study of two homes for the elderly*

Brian Switzer

Although the Hospice Foundation in Constance knew they had a personnel problem, they were unsure how to begin to fix it. In addition to difficulties in finding and keeping employees, the Hospice Foundation's employees were often on sick leave, adding pressure on remaining staff. Twelve communication design students in the masters program at the University of Applied Sciences in Constance (HTWG Konstanz) conducted a study aimed at identifying the causes for these problems and, more generally, understanding how the employees work and feel. Even though the methods in this study are well known, it presents an important prototype for designers and design researchers because of its success in finding useful insights. It also serves as a pre-design project briefing for both management and designers. It demonstrates the usefulness of qualitative methods in providing a deeper understanding of a complex situation and its usefulness as a strategic tool and for defining a project's focus and scope. Ideally, it also provides insights into health care for the elderly.

Keywords

*design research  
complex problems  
healthcare*

## Introduction

A common problem in design is to define the problem to be solved as precisely as possible. This is particularly the case when dealing with complex problems. Using the student project undertaken during a master's class on Design Research at the University of Applied Sciences in Constance, Germany as an example, I will show how projects similar to the one described here can be essential in understanding and defining a difficult problem. The Hospice Foundation<sup>1</sup> approached me with problems they were having with employees leaving and with finding (and keeping) new employees. The hiring of expensive temporary help had cost the foundation a substantial sum of money, and the management was under pressure to remedy this situation. They initially planned to give their personnel a questionnaire and wanted my help with preparing it. I proposed a more in-depth study of how the employees work and their day-to-day work situation to better understand what the problem(s) might be. Fortunately, they agreed to work with the university on this semester-long project. Two retirement homes in the foundation agreed to be a part of the study.

The project was conducted with twelve beginning Master's Degree communication design students, who had no training in design research methods. I have practiced this type of research in the past<sup>2</sup> because it gives students an excellent hands-on way to understand the theory behind the research. Furthermore, design research needs to be practiced to be understood and truly learned. In initial meetings with the Hospice Foundation, it became clear that many of the staff were mistrustful of outsiders. In order to help win the trust of the employees we organized introductory meetings; all employees were invited, and we (the students and myself) introduced ourselves.<sup>3</sup> We explained that the purpose of the study was to better understand the daily lives of the employees as well as their needs and problems. We also repeatedly stressed that participation was voluntary and that employees could break off at any time they wished. After an open question and answer session, we were given a tour of the facilities. This particular study presented us with a unique problem, namely, how would we deal with the patients? They were not the focus of our study, and their privacy and dignity needed to be protected at all costs, yet they were an integral part of the employees' day-to-day activities. We agreed on the following

1. in German: Spitalstiftung Konstanz

2. Two projects in particular: in 2012 for a local grade school, and in 2011 for a local shopping center had each been successful in understanding the problem and in teaching Master's Degree students in research methodology.)

3. Although this meeting was paid time, only roughly one half to one-third of the employees attended.

ground rules: patients would not be photographed (in general we avoided photographing people), as they were not the focus of our study; and we would only speak to them if they actively spoke to us in the common areas. Furthermore, we also agreed to be careful to protect the employees and their privacy and discussed various methods to achieve this goal. Parallel to this introduction process, the students were being trained in the methods and ethics surrounding a qualitative research study with human subjects.

## Methods and Scope

The study used a variety of methods to gain a greater understanding of the employees' daily lives. These included active participation methods such as shadowing, guided tours and interviews, as well as passive observation methods such as mapping activities and people to places and times, or document inventories, photographing workplaces.<sup>4</sup> Finally, general background research – such as news and basic background information on the profession – provided some context to the research focused on the specific situation. Getting students to engage with people directly was a challenge. Obviously some students are more outgoing; however, it is often the shy quiet ones that make more detailed observations, and who need special encouragement. Encouragement and feedback were organized around weekly group meetings. Here students were encouraged to share in a detailed way what happened, and particularly what was not so successful so that all could learn from it. I use Clifford Geertz's term "thick description"<sup>5</sup> to describe what is expected in terms of describing what happened and how detailed notes need to be. From week to week the students became more secure and practiced in their methods, and the observations became more interesting.

It is my observation (and the success of IDEO and their qualitative Method Cards<sup>6</sup> supports this theory) that qualitative research methods comes naturally to designers and design students. Qualitative methods are more open than quantitative methods; they start without a specific theory;

4. Shadowing is following someone around during their work day and observing what happens; guided tours are asking someone to show you around their place of work or home and explain objects or situations. In the case of this study, we used unstructured interviews, where a rough set of questions is used to guide a conversation. Behavioral mapping documents where activities happen or where people are. A document inventory collects all documents related to a particular process or profession and analyzes these. Photographing workplaces captures the work environment in a very detailed way.

5. see Clifford Geertz (1973) *The Interpretation of Cultures*, paperback edition pages 3-10.

6. See the IDEO website [www.ideo.com](http://www.ideo.com) and their publications especially: IDEO Method Cards (2003) and Kelley, Littmann (2006) *Ten faces of Innovation*.

FIGURE 1

The five topics and their relationships to each other.



rather, they develop the theory out of the observed situation (Grounded Theory, Anselm L. Strauss, *Qualitative Analysis for Social Scientists*, Cambridge, University Press, 1987.), and tend to be more problem-oriented.<sup>7</sup>

Although the Hospice Foundation runs many retirement homes, and other services, we agreed to limit our study to only two homes for the elderly. This was primarily because the managers of these homes agreed to be a part of the study, but also simply due to the limited resources available to the team. The students prearranged their visits and made observations during all three work shifts. In addition to the research specific to the homes for the elderly, we also met with the employee coach, the union, and sat in on one of the monthly management meetings.

The students collected a large amount of material: photographs, quotes, notes of observed activities and situations, documents, and notes from interviews. This material was condensed into concisely noted quotes and observations and then sorted into categories. Originally we sorted the information physically using cards and post-it notes (see figure 1) and then transferred this to a spreadsheet for practical reasons such as transport, precision and sharing. As we worked with the information categories and subtopics slowly started to emerge.

## Results

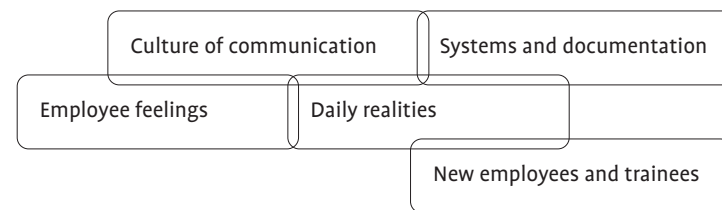
One of the first things that happened is that the students gained a great deal of respect for the employees. This solidarity with the employees was good in one sense because it allowed the students to gain many personal insights from the employees, but it also contains a risk of skewing the evidence in favor of the employees. The other difficulty the students faced was unexpected; after the initial mistrust, the students were so accepted that they had no time to take notes. Furthermore, they noticed that their presence was taking time away from the patients. We discussed different ways to deal with this problem in the weekly meetings and finally agreed on two possible tactics. First, the students could go in teams of two and take turns, one asking the questions and the other observing and taking notes. Second, the students could use their notes as an excuse for extracting themselves from a prolonged interview, saying "I just need to make some notes."

7. see Peter Atteslander (2008), on the uses of qualitative research methods, pages 71-72.)

FIGURE 2

The five topics and their relationships to each other.

## Observation clusters



"I'll be right back."

The results of this study can be grouped into five categories: culture of communication, systems and documentation, daily realities, new employees and trainees, and employee feelings. Each of these will be briefly covered in the following section. It should be noted that all of these observations are taken from the time of the study. How these different aspects (or categories) combine to influence employee well being is then addressed in the analysis section. The analysis and subsequent recommendations are based on our observations and are detailed at end of this section and in the "Proposals" section of this paper.

### 1. Culture of communication

Fundamentally the Hospice Foundation's internal communication needs work. The study also touched on the Hospice Foundation's external communications; this will be discussed in the conclusion. We focused more on the internal communication because we had access to all parties involved. Through our observation we discovered multiple barriers in internal communication each with a different root cause.

The first of these is physical separation; the two different homes for the elderly were located in different sections of the city. This is true for all of the homes in the Hospice Foundation network although the distances vary. Each of the homes is managed by a different person with a great deal of autonomy. These managers meet once a month with the managers of the Hospice Foundation, and it quickly became obvious that they cannot be forced to make changes unless these are legally binding. This could be seen, for example, with the way the employee coach was dealt with: in three homes she was a welcome support whereas in one she was not welcome at all. In general, the managers had a cautious alliance among each other, as the result of past battles with the previous Hospice Foundation director. At the employee level there is little to no exchange between homes. At the time of the study, employees moved very rarely from home to home and almost never saw or spoke to workers from other homes. This is often due to the time pressures of the job itself, and we observed no informal organization beyond the workplace. The second aspect of physical separation was within the workplace itself. Each home was organized into functional units (stations) of one story (level or floor) each. Employees were usually assigned

FIGURE 3

An overview of the different kinds of communication barriers between the employees.

Types of separation

- Physical separation 1: homes
- Physical separation 2: levels
- Hierarchical separation
- Linguistic separation
- Socio-cultural separation

to a specific station, and although some movement occurred, most of the employees were most familiar with their home station and preferred to be assigned there. However, the workload varied from unit to unit, causing an imbalance that affected the employees' workload. This imbalance was often resented. Furthermore, there was very little exchange between the employees assigned to different units.

The next type of communication barrier is the result of hierarchy. The hospice and health care system in Germany, in general, is highly stratified, and within the context of the Hospice Foundation particularly so. Not only is there a higher level of overall hospice management (which in turn answers to a board of overseers made up of local politicians), each home has its own manager, nursing director, unit manager, nurses, and various levels of caregivers, volunteers, and trainees. There was a clear barrier between management and nursing and caregiving staff, either due to physical separation or simply because their duties were so different. This barrier often caused tensions that were visible right from the start of the study.

The final barrier is a linguistic/socio-cultural barrier. This last barrier was often more subtle than the other two, which were often directly addressed by employees. The Hospice Foundation employs people from many different nations, who are often recent immigrants. Over the course of the study, we discovered that how well employees spoke German led to the formation of subgroups and isolation/problems due to a lack of understanding. For example, the management often complained that the employees didn't understand the latest memos. These memos were printed and posted in the units for all to see and read. However, the German used was often full of bureaucratic terms and complex language, making it difficult to impossible to understand for non-native speakers. This misunderstanding fueled the discord between management and nursing staff. The socio-cultural aspects were often either cultural: husbands dragging their wives away from the workplace, or social: employees that lived so close to the poverty line that they sometimes simply failed to show up. Both of these factors are more personal and were not readily addressed, because they were too private or too embarrassing, but their effects could be observed or were related to us.

2. Daily realities

The daily routines of the hospice foundation staff are influenced by four given factors; the pressure of working in shifts, division of duties, illness and

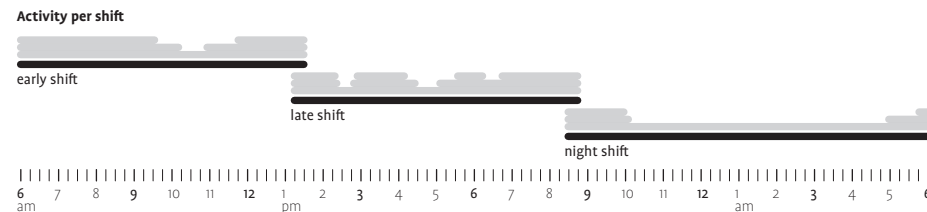


FIGURE 4

A diagram of the observed activity per shift, where more gray indicates more activity.

understaffing, mental pressure and exhaustion. Each of these factors affect how the employees feel in differing degrees at different times.

Working in shifts is the only way to guarantee that the residents of the homes have the 24 hour care that they require. These shifts are the early shift from 6:00 am until 1:35 pm, the late shift from 1:15 pm until 8:45 pm and the night shift from 8:30 pm until 6:15 am. The overlapping times (15 or 20 minutes) are used for short meetings in each unit or station to relay important information from one shift to the next. Each shift has its own challenges, whether distributing medicine, organizing meals, getting residents dressed, all of these activities have to be planned and executed for a unit of up to 24 residents. Each nurse<sup>8</sup> for elderly patients) ideally cares for 6 to 8 patients during the day shifts. Night shifts care for all units together as long as they have no more than 70 patients in total. The rhythms of these shifts and the desire and/or pressure to hand off well to the next shift is central to the job.

The German medical caregiving environment is highly stratified. There are several different levels of nurses; those with a general nursing care background, those who have three years of training in care (for the elderly), and multiple certificates that qualify one for management positions. Higher management usually requires a degree in nursing care. Below the trained nurses there are caring staff (*Pflegehilfskraft*) who need only one year of training, as well as trainees and volunteers<sup>9</sup>. There are also new additional care staff with short specialized training for the elderly. Housekeeping staff are also part of the mix. These employees and trainees are not allowed to perform the same duties as the more qualified nursing staff but can be used for many of the more menial duties in the home for the elderly. All of these activities and people need to be coordinated. Although many employees know their duties well, this coordination is complicated by the two factors: teams that are constantly changing and employees calling in sick. Improvisation and gaps in planning for either eventuality lead to the blurring of the boundaries of activities (e.g., under-qualified staff distributing medication, or nursing staff making sandwiches) or that the residents do not receive the care that they need. The study revealed that these things occur more often than they should.

Most of the employees work in this sector because they enjoy

8. I use the term nurse to refer to male and female trained caretakers (*Pflegefachkraft, Altenpfleger*)

9. The German system has many social programs that offer support in the care for the elderly, young people can volunteer for a year of social work (FSJ = *Freiwilliges Soziales Jahr*) and there is a government organization for volunteers that also support social causes (BFD = *BundesFreiwilligenDienst*)



taking care of people. Our study found that the vast majority of employees find the caring aspect of the job enjoyable. Furthermore, in the interest of the good of the residents, many employees went the extra mile to help each other, fill gaps, etc. to make sure that the residents received care. This desire to do a good job in caring for people is fundamental to many employees. This same desire also creates mental pressure especially when the job and its circumstances (not enough time or too many residents), leave many employees with a guilty conscience. This state was mentioned to us repeatedly during the study. This, combined with the time-pressure and responsibility associated with the job, as well as the long shifts caused by colleagues being sick, often leads to illness, exhaustion or low-level burnout. Employees repeatedly spoke quite frankly about this state or diagnosed it with others ("He or she is working two shifts back-to-back. Don't bother trying to talk to them now.")<sup>10</sup> It is a vicious cycle, the more the employees are under pressure, the more often they get sick. This increases the pressure on the others who have to fill in or take extra shifts, which in turn causes more illness. This situation, combined with the reluctance of both the staff and the management to move employees from unit to unit, can cause whole units and their residents to have poorer care, or force the hospice to hire outside care at a premium. The costs of these external employees ran so high that the board of overseers made it a major issue of concern, which in turn led to our study.

### 3. Systems and documentation

The care for the elderly and the medical profession in general bring a great responsibility for the patients, and it is accompanied by legal requirements that often require documentation. In Germany at the time of the study, for example, the staff were required to document any changes in the behavior or health of the residents. This is logical and helpful for diagnosing problems. It is also essential that this information be transferred from one shift to the next. Organizing the highly stratified staff in shifts also required systems and documents, not only to plan but also to document who actually worked. Our study examined the meetings at shift changing times, the use of the duty roster, the use of the computer and management software, and how information was transferred from one employee to the next.

The short (15 to 20 minute) meetings at the change of shifts are essential in running each nursing unit smoothly. However, the meetings have several problems. First, the meeting times are too short. We discovered that many employees began discussing the job prior to the shift change in the dressing rooms or simply came early to work in order to have enough time to prepare. The demands of the shift leave little to no time for document-

10. The quotes in this article are paraphrased out of German quotes taken from the students' notes.

ing things carefully, so some employees also stayed longer or documented things from the last shift from memory in the extra time they had from coming to work too early. The second problem is that there is no official or recommended way of documenting each shift. Each home, station or unit and person makes it up as they go. Without systems or even key points to cover, the different records often have gaps or fail to document key information. Also, due to the time pressure on the nursing staff, notes were often taken on small improvised notepads and either shared at the meetings or ideally typed up in the office. Finally, a particular type of employee, i.e., the so-called additional care staff,<sup>11</sup> is also required to keep (written) records of patient development, but these are no longer shared during meetings.

The duty roster<sup>12</sup> is an important document in the Hospice Foundation. Every month is planned in advance and includes elements such as vacations or time off are requested ahead of time. The roster schedules all three shifts for the available employees, and a printed copy is kept on display in each unit's office. The plan represents an ideal state. The reality of illnesses that were not planned for means that employees are often called in spontaneously to fill gaps. The employees were all familiar with the roster because it regulated their work times. However, it was also a source of trouble. For example, because days off were simply listed and it was unclear why one employee would suddenly have more than the others – for example by having accumulated overtime in the previous months – was not visible on the plan, which led to misunderstandings and jealousy. Although

FIGURE 5

A typical roster with handwritten additions.

11. In German zusätzliche Betreuungskräfte, are staff who spend time with more active residents doing activities like art, singing, games, reading or just talking to them.)

12. In German this is referred to as the Dienstplan.

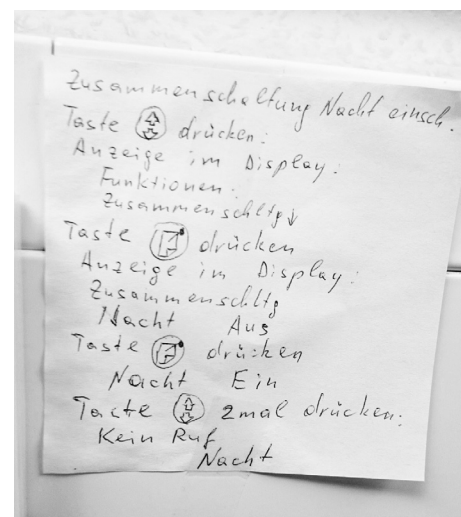
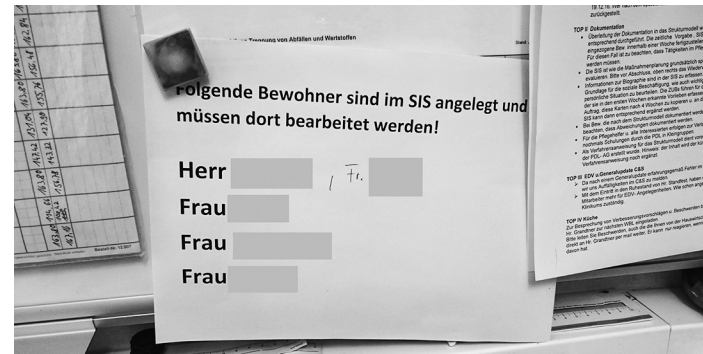
FIGURES 6/7

Examples of the office computers and corresponding instructions.



FIGURES 8/9

Examples of the office computers and corresponding instructions.



there are templates for these plans, we found them to differ from home to home. The duty rosters were often a mix of digital and hand-written forms and processes. Indeed, the plans often didn't deal well with the realities that we observed

All units had a computer in the office, but the use of these by the caregiving staff was minimal at best. In our observations and interviews, we uncovered a variety of reasons for this lack of use. Although most employees had been given a training course in the software, this course was given in lecture format and they had no hands-on experience in using the software. In a profession that is largely hands-on, this teaching strategy was totally inappropriate. All the people whom we found using the computer had been shown how it worked by another employee. Language was often a problem: many employees were from foreign countries, which made them more reluctant to work on the computer. The nursing and other staff do not interact with the residents in the office, which means that, if they made observations, they had to either write them on a notepad or run to the office and write them down there. Both of these solutions were impractical. Finally, the software was not designed to be user-friendly, as was clear from many handwritten instructions kept near the computer, and from its general lack of use (see figures 6-9).

FIGURES 10/11

Examples of notes and signs in use by staff.

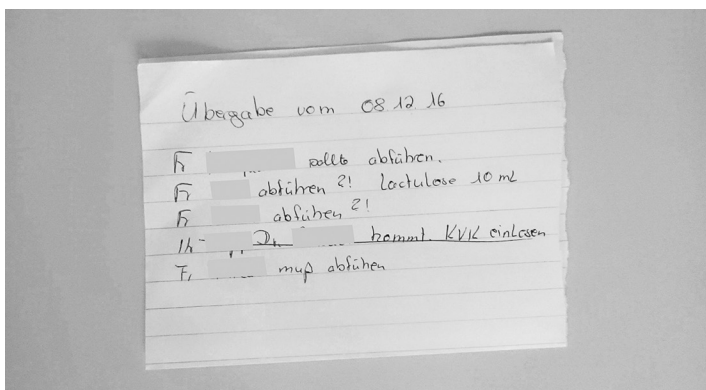
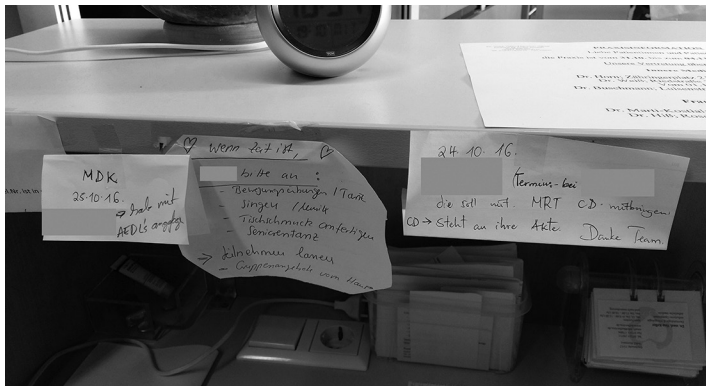


FIGURE 12

Examples of notes and signs in use by staff.



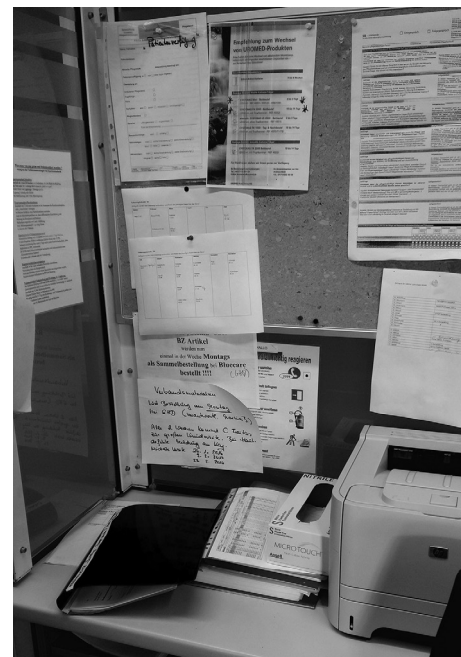
FIGURE 13

Examples of how messages were displayed.



FIGURE 14

Examples of how messages were displayed.



The time pressure and lack of systems led to a number of ad-hoc ways used by employees to transfer information among one another. By far the most common methods are the hand-written signs and notes that were found in abundance during the study (see figures 10-12).

The time pressure means that communicating to one another was primarily verbal, but for those occasions where this wasn't possible, a quick handwritten note or sign often had to suffice. Some of the signs were more finished, yet still hand-written. This led us to believe that there is often a general reluctance to use the computer. Official communication was always displayed on pin boards or display cases and was invariably computer generated. In the unit office, there was often a mix of both types, often diverse and layered (see figures 13-15).

FIGURE 15

Examples of how messages were displayed.



New signs/notes received attention; older ones less so, leading us to question how effective they really were after a few days. In addition to the ad-hoc signs, official records, regulations, and charts were kept in folders and organized by the head of the unit. Although the nursing staff knew of them and worked with these documents, most of the time they were kept in cupboards or shelves and had little bearing on day-to-day activities. ("The quality management handbooks are in the cupboard and that's where they should be." „Die [Qualitätsmanagement Handbücher] stehen im Schrank und da stehen sie gut.")

#### 4. New employees and trainees

From the very first meetings before our study began, the Hospice Foundation told us that in the last five to ten years the number of trainees and applications had dropped sharply in both number and quality. The new policy, according to the personnel department was: "We hire anyone who applies." The challenge is not only to find and recruit new employees, but also to train and improve those that do apply. Up until 2011 when the military service draft was suspended, many civil service volunteers<sup>13</sup> provided a valuable resource. This and the general demographic shift, and more and more young people pursuing higher education in Germany combine to make finding new employees difficult.<sup>14</sup>

13. in Germany it was possible to avoid military training and service, by volunteering for civil service (Zivildienst) for a longer period instead.)

14. The German school system divides the children in the fourth grade into two groups, those destined for higher education are sent to the Gymnasium, and those who will either pursue a trade or other professions are sent to the Realschule. Furthermore recently (roughly 2012 depending on the state) the formerly binding school certificate was changed to a recommendation, leaving the decision of attending Gymnasium versus Realschule up to the children and the parents.)

Our interviews with the Hospice Foundation revealed that the foundation recruits in a variety of ways. They are present during career fairs for young people; they work with schools to provide practical training; and they recently implemented an "employee recruits employees" program with rewards for recruiting friends and acquaintances. In general, the type of person who pursues a nursing or caring career has a helper mentality. This is important especially in the care for the elderly because the pay is low, and the work is demanding. There are unfortunately many misconceptions about this type of work, and many people think no training at all is needed. This leads to many young people dropping out of training programs. Furthermore, many applicants are not originally from Germany, and they often have trouble with the application or fail to fill it out properly. Additionally, cultural biases create conflicts. For example, some cultures won't accept women as superiors, which is a problem as women are often in management positions. Finally, the importance of being a team player is often underestimated or not appreciated by young people or new employees.

In one of the two homes, training is often very brief since the time veteran employees have is so short, or isn't officially planned. The lack of established systems for training new employees also created gaps in knowledge and quality. A quality handbook exists, but it is buried in folders and rarely consulted, as many found the information too complex, too long or not readily understandable. Many employees were grateful for a new coach that the foundation hired. This person had many years of experience and was very good at gently showing people more effective ways of working, even if they had already worked for a while. This helped free up the more experienced employees who otherwise needed to train new people in addition to their normal responsibilities. The second home we studied reserved four weeks for each trainee and these trainees came in coordinated batches. This time period was long but viewed as valuable by the employees. At the time of the study, the employee coach was not welcome in this home, due to the home management boycotting the concept.

Additional training for existing employees is often under-used. Employees felt no incentive to participate (although the training could lead to a better position and higher pay), and some older ones were just biding time until their retirement. Furthermore, even if the employees wanted to participate they had to get permission from their unit manager, which given the current situation of insufficient staffing made getting permission more difficult. Some employees watched YouTube training videos, which was simpler and not tied to a specific date or time. Learning new software was also viewed by the management as the employees' responsibility, saying "They [nursing staff] just need to practice during their shift." The few times that software training was offered, the employees found the groups too large, and the classes too theoretical. In general, the practicality of the offers of additional training and their usefulness need to be optimized.

## 5. Employee feelings/well-being

During the course of our study, we were also very interested in how the employees felt, what might motivate them to leave for another employer – this behavior was described to us by the personnel department – or other more subjective influences on their work. We discovered fears and uncertainty, pressure from multiple sources, support and solidarity for each other, and distrust between management and nursing staff.

A common problem for employees at the time of the study was the feeling of uselessness, apathy, and helplessness, one longtime employee said: "You always go home feeling guilty." Another told us: "I wish I had more time with the residents, that is what I miss most here." Employees want to help and do a good job, but due to the number of residents to be cared for in a short time, they are constantly running, doing only the most necessary tasks. Language problems make it difficult for foreign employees to help more or to be more effective in the team. Older employees fear changes since they are often unsure if they will be up to the new way of doing things. Also many live in fear of making mistakes because the consequences of mistakes are often severe for both resident and employee.

Hospice Foundation employees feel many different types of emotional pressure: financial worries, lack of alternatives due to limited education, illness due to overtime, cultural pressure, lack of predictable daily routine, living by the duty roster and working in shifts, responsibilities of the job, colleagues being sick, the constant deaths of residents. All of these pressures are a very real part of an employee's emotional life. We also observed external pressures, from relatives of the residents who were often very unkind or arrogant to the employees, as well as from doctors at the nearby hospital who were often very rude. Often employees needed a sounding board to unload their troubles, not only did the members of the study team serve this purpose, but an interview with the union leadership also confirmed this. Management often had trouble connecting emotionally with the nursing staff, simply because they had very different work responsibilities and realities (or were not often present).

An atmosphere of mistrust between nursing staff and management was repeatedly visible during the study. Management was impatient with immature employees who overslept or didn't come to work, or who made mistakes. Employees felt left alone by management when they presented their problems. We found that unclear communication and misunderstandings fed these feelings. For example, although our visit was communicated to the staff, we often had to explain what we were doing. Many students were asked to explain what the "real" purpose of the study was. Overall employees and management were suspicious of new things, preferring to wait and see, rather than embracing the new ideas.

We observed Hospice Foundation employees helping each other on multiple occasions. Knowing that the early shift is very stressful, night shift employees would prepare things for breakfast if they were having a slow night. Or that management would spontaneously work in units that

FIGURES 16/17

Examples of appreciation for fellow employees



FIGURE 18

Examples of appreciation for fellow employees

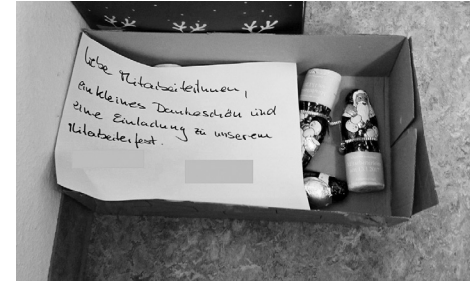
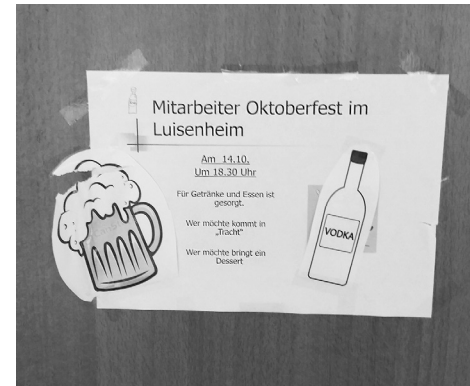


FIGURE 19

Sign promoting an upcoming employee party.



were understaffed to help them get through the shift. These things were appreciated and mentioned by the employees in interviews. We also observed many small signs of appreciation such as a chocolate Santa Claus for every employee around Christmas; birthday cakes were baked for employees to celebrate their birthday. The Hospice Foundation management also offered programs like "good health at work", or bonus pay for those who spontaneously worked shifts for others. Homes also organized employee celebrations such as the traditional 'Oktoberfest'.

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## Summary

A number of factors led to the problems that employees were having. Poor communication whether due to pragmatic problems (how were things communicated) or to physical, linguistic or other barriers bred suspicion in employees (and management) and led to a culture of distrust that was prevalent and easily observed. Impractical tools for documentation and learning led to both the loss of time and either frustration or fear in employees. Although employees worked well together in teams, these teams and this solidarity didn't apply to all of the employees in the home or in the Hospice Foundation. Nor was this team spirit enough to counteract all of the other negative forces. Finally and certainly the most difficult and fundamental, we found inherent problems in nursing care. These were caused by a clash between the type of person drawn to the caring profession (helper mentality) and the bean-counting mentality currently propagated by the government, meaning that a patient generally doesn't get enough attention, and leaves the employee with a guilty conscience. Another factor was a social one, nursing is in general not well paid and requires a lower investment in education. This type of work is often done by the lower class, and as such is looked down upon by society, although it plays an increasingly valuable role in an aging society. Starting with the fundamental social factors (poor pay, poor status) and systemic factors (people wanting to help but not able to do so) and then adding the more specific factors of problems in communication and intuitive resources, clearly leads to emotional stress, which often results in illness or changing jobs.

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## Proposals

This study differs from a classic sociological study in that it suggests specific responses and means for improving employee well being in this specific context. This is one key difference (and in my mind advantage) of research with designers who are trained to propose solutions. Designers, however, often lack the patience, training or resources to undertake such a study of the kind described here which aimed to better define the problem. At the end of the analysis, we proposed a number of activities and measures to specifically improve on the situation for employees. These proposals are described in the following section. The proposals are intended to work together in order to provide a better result overall.

### 1. Proposals for improving communication

We made a wide range of proposals to improve internal communication.

The first was to use the employee coach as a confidential communication channel. By implementing email accounts for all employees, the Hospice Foundation would have a direct way to reach employees. Social media platforms (e.g. Facebook groups) could also be used to foster exchange between employees at all levels in the hierarchy. Based on comments that salary information is the only printed communication that all employees read, we suggested sending crucial information along with the employees' pay slip. Monthly "share and support" meetings for each home would help break down barriers between floors. We also suggested using practical means to get people together. For instance, a local bakery could come once a day and sell their goods in one place, so that all employees would come together. Having the break room and corresponding coffee automat and snack machines all together would also provide incentive and opportunity for informal communication. Sorting the pin boards into clearly labeled sections would make it easier for employees to see the latest news items.

Finally, we proposed that the Hospice Foundation organize an open house event to involve the local community and get people in touch with the profession. We also suggested forming an alliance with other hospices/homes for the elderly and launching a local or national campaign to raise awareness of the care for the elderly. This same alliance can also lobby politicians to improve the profession's circumstances by providing better financing.

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### 2. Proposals for improving the day-to-day

#### work environment

Since it is legally and financially difficult to lighten the workload for the employees substantially, we suggested designating specific employees to work as "jumpers" who would fill in gaps for people who called in sick. The proposal was that each designated person would be on call for one week, so the load could be shared by many rather than a few. It would also likely prove attractive to offer incentives for being more flexible in where one worked (different homes, different floors/units). We also suggested that hiring a person to help the nursing staff with office and filing work would free up time for the care of residents. In the longer term, the Hospice Foundation has to take a hard look at its employee structure and attempt to shift positions from management to nursing care. Clearly longer overlap times between shifts allow for more information sharing, record keeping, etc.

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### 3. Proposals for systems and documentation

Improving systems and documentation requires a wide range of actions and activities. Establishing a digital filing system, modeled after ones used

in large creative agencies would give types of documents specific abbreviations, dates, and version numbers so that the sorting is semi-automatic and easily searchable. Since many problems were rooted in language weaknesses, we suggested a handbook of special nursing and health care jargon and terms, improved explanation and documentation of the in-house software, and German classes for employees with language deficits.

A longer-term proposal advocated the purchase of handheld tablets similar to those used by waiters in large restaurants and developing a custom app that integrates calendar, resident notes, duty roster, and other useful functions in one handy device. Clearly the study's observations would directly feed into the app's development and design.

Including the additional care staff in one of the daily meetings would also improve resident care. Obviously, this brings challenges because we often observed an inherent conflict between departing staff wanting to catch their bus and the next shift wanting as much information as possible to do their job well. The additional care staff had a different focus (emotional well-being of the residents) from the nursing staff (physical and medical care of the residents); this mismatch also needs to be addressed.

#### 4. Proposals for recruiting and training

During the study, the Hospice Foundation began to work on how it communicates with the community. They launched an attractive new website and increased activity (weekly posts) on their Facebook page. Our proposal to start an image campaign has been actively pursued and was realized in 2017 with Facebook posts, local ads, and advertising on the Hospice Foundation livery. We suggested a "trainee day" to welcome young people and give them a chance to see the workplace. Simpler (and digital) application forms (written in simple language) would increase the number of applicants. We also proposed a series of improvements and incentives such as a regular trainee roundtable, a Foundation trainee intranet – with specific information and support, a smartphone for new employees, or bonuses for especially good grades, or free tickets to local events and cultural venues. We also suggested offering these incentives for those who decide to work for the Hospice Foundation after being a trainee.

To improve training we suggested additional hands-on training for employees who wanted or needed help and making short demo-films and text explanations in pop-up windows. In the long term, we proposed a specially developed app for the employees that could be used to help with training. In addition to supporting the successes of the employee coach, we suggested making an introductory film that explains internal procedures and duties. We proposed that every employee be given a personal handbook – a compact, understandable version of the quality-management

handbook. Finally, we supported the union's new efforts to care for the young volunteers and interns rights and requests.

#### 5. Proposals for improving employee well-being

Fears and other feelings are highly personal, which makes it difficult to address them in a general way. Instead, we propose a series of activities that, taken together, improve the general mood. The employee coach can act as an ombudsman to listen to concerns and feelings since she has worked in nursing for a number of years and can offer not only a sympathetic ear but also provide support. Regular meetings with the staff to reassure them that they are doing a good job can be very useful. Regular meetings with the unit's entire team are useful to the group dynamic and mutual support. Combining these meetings with snacks would also give the opportunity for staff to share aspects of their culture, and provide an opportunity to share important information in a relaxed atmosphere. Commonly implementing small, rather than large changes – for example in the schedule – should help break down resistance to new things. Support for the employees' daily lives is also essential, and we recommended augmenting the "good health at work" and the "children's daycare" programs that were just started or in planning at the time of the study. Simple measures such as providing each unit with a suggestion and complaint box were also suggested. We also remarked that the financial reward for spontaneous filling in for colleagues was too low, especially after taxes.

Showing appreciation is also essential for improving the overall work atmosphere. We suggested a series of small activities and gestures, such as sweets or small meals that are organized for each shift (for example by another unit or shift). In general, we suggested looking for activities that built a sense of community, offered a chance for communication and break down barriers. The sum of all improvements should have an effect on employee well being.

#### Conclusion and Outlook

The study and its proposals were published at the end of the semester in a 280 page document that was given to the Hospice Foundation management and was made available to all employees. Within a matter of weeks, the management was implementing recommendations made by the study and was interested in follow-up projects such as the development of a custom nursing care app. We were requested to reprint 20 copies of the publication and to present the project to the board of overseers about one year after the project was completed. This presentation was very well received. All in

all the project was a success, as measured in terms of the positive response to the study.

Although our study of the Hospice Foundation is unique to this specific case, there are ideas that can be transferred to other types of projects. Nursing work often carries many of the same stresses and problems identified here. The topic of elderly care is increasingly important in western society because of its rapidly growing population. These problems will have to be dealt with; the better we understand them, the better we will be able to propose solutions.

In a larger sense, this study shows the power of qualitative research methods for analyzing a complex social situation. Obviously, the methods used in this study are not exhaustive. Further methods or variations on the methods used are possible and depend on the social situation under study. The methods used here fit the scope of the project and the abilities of the students. It is my hope that this study will serve as an inspiration for designers wanting to extend the range of their work beyond the limited range defined by stereotypes of typical design approaches. This requires two things: an open-minded client and the willingness of designers to learn qualitative research methods. If designers can adopt these methods and this way of thinking, they will have the tools to work more effectively with clients on understanding a problem before thinking about solutions.

One key weakness of the study is its lack of rigor. Students were unfamiliar with the methods and often made mistakes. They were learning by doing. Over time they improved and the final results seem to point in the right direction. Certainly, our very presence created some bias, as the effects of scrutiny on behavior are well-documented. A bias in favor of nursing employees is apparent, largely because the observers spent more time with them than with management. Finally, the students had to rely on handwritten notes, rather than recording and filming. This was done primarily to protect the employees' (and residents') privacy. Despite these weaknesses, I feel that the study was invaluable for teaching practical lessons connected with qualitative research methods. The students had a specific example and learned directly from it.

Originally I had suspected that the employees from Constance were taking jobs in Switzerland simply because they were better paid. Over the course of the study, I was proven wrong. Some employees did indeed leave the Hospice Foundation for Switzerland, but not because of the money, but because the Swiss health care system allots fewer residents per employee, meaning the employee can spend more time with each resident and really focus on the person rather than focusing on just getting the job done. Governments need to consider such factors when financing care for the elderly. Numbers are not irrelevant; the investment in care for the elderly needs to be in proportion to the current demographic situation of the coun-

try in question. Certainly, this study alone will not reform health care, but it can contribute to the discussion in a relevant way.

Finally, the Hospice Foundation and other organizations like it are affected by public opinion and trends in society over which they have very little or no influence<sup>15</sup>. When politicians make the job of nursing or care for the elderly sound comparatively easy, the public is given a false image. Cultural or national stereotypes are an important context and are very difficult to change. However, it is our hope that policymakers will read this article and change the way they think.

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(15. In 2012 the labor minister Ursula von der Leyen suggested that the 25,000 predominately women employees from the Schlecker drugstore chain who had just lost their jobs due to the company's bankruptcy, go into nursing.)



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## Author

Brian Switzer is professor for communication design at the University of Applied Sciences in Constance (HTWG Konstanz). He has worked at WGBH Design in Boston, Siemens Design Group in Munich, MetaDesign Berlin and London, Icon Medialab and Future Brand before co-founding envision+. He holds a degree in Graphic Design from the University of Illinois, and a Masters Degree in Human Centered Design and Strategic Design Planning from the Institute of Design, Chicago.

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