

Production and protection. Seafarers' handling of pressure in *gemeinschaft* and *gesellschaft*

K. V. Størkersen
NTNU Social Research

A. Laiou
National Technical University of Athens

T. O. Nævestad
Norwegian Centre for Transport Economics

G. Yannis
National Technical University of Athens

ABSTRACT: Seafarers experience conflicting objectives of production and protection in most operations. This study explores how seafarers deal with such pressures, through an analysis of interview data from 20 seafarers working on Norwegian- and Greek-controlled coastal and international passenger and cargo vessels of different sizes. Despite the various contexts, the results show similar conflicting objectives and pressure handling. The pressure is experienced differently, however, due to diverse organizational relations. Seafarers on the *large* vessels in large companies describe business-like relations (*gesellschaft*) and direct efficiency pressures from superiors. Seafarers on the *smaller* vessels in small companies contrastingly report of close relations (*gemeinschaft*), devotion to the company and thus an internal wish to be efficient.

1 INTRODUCTION

Seafarers, as personnel in other industries, have in recent decades experienced increasing work pressure. Fewer persons are to complete more tasks in less time (Österman and Hult, 2016), on shorter sea passages and rapid turnaround (Hetherington et al., 2006) without added resources (Lappalainen, 2016).

On top of the work pressure, seafarers need to take care of safety for themselves, the crew, vessel and cargo. Safety can be understood as the presence of organizational conditions making operations to be carried out without accidents or harm, in the short and long run (Kongsvik, 2013).

Conflicting goals of protection and production are present in all organizations (Reason, 1997). Production includes costs, work, and time pressure for the personnel. Protection is about making sure no one is harmed by production, and is related to competence, procedures, and material and immaterial support. Protective measures can also be viewed as pressure.

In this paper interviews of seafarers are analyzed to explore how they deal with pressures of production and protection. The seafarers work at Norwegian- and Greek-controlled coastal and international passenger and cargo vessels. We find that the seafarers across contexts handle the similar pressures similarly. The main difference involves how the pressure is experienced, and this seems to be defined by whether organizational relations are close (*gemeinschaft*, mainly on

the small vessels, that usually are owned by small companies) or business-like (*gesellschaft*, mainly on the large vessels owned by large companies).

2 LITERATURE

2.1 *Research about conflicting conditions*

Operations are influenced by organizational structure and management, regulation and policymaking (Reason, 1997). Within this context, operational personnel constantly face conflicting goals.

Managers often value short-term financial criteria over safety, giving conflicting goals of production versus protection, or efficiency versus safety (Rasmussen, 1997, Reason, 1997). Production will generally be prioritized, since “production creates the resources that make protection possible” (Reason, 1997). Vaughan (1997) shows how personnel often want thorough rule-complying operations, but that cost and time pressures slowly drive work practice away from the original quality ensured routines. Hollnagel (2009) describes an efficiency/thoroughness trade-off principle. Managers want efficiency, but if the personnel work quickly instead of thoroughly, lower safety might be a result, which paradoxically is not efficient. Likelihood “of failures grow[s] when production pressures do not allow sufficient time—and effort—to develop and maintain the precautions that normally keep failure at bay” (Hollnagel, 2009). This efficiency paradox is also

noted for seafarers by Fenstad et al. (2016). Seafarers are known to be efficient to help their company remain in business (Sampson et al., 2014). Personal injuries, violations and risk acceptance on board are related to work pressure and poor organizational safety culture (Nævestad et al., 2017). Crews' immaterial conditions, like time, concentration and competence, largely influence how safe they can work (Størkersen, 2017). Critical conditions are minimal resources, fast pace and accompanying lack of discretionary space, while regulation can moderate such pressures (ibid). Ferry personnel have several strategies on how to meet schedules rather than comply with rules:

The ability to keep the schedule and not canceling a departure, are associated with high competent navigators. Being delayed, or even worse, canceling a departure, may damage the navigator's reputation (Aalberg and Bye, 2017).

Still, operational personnel are expected to comply, even though for example Hale and Swuste (1998), Bieder and Bourrier (2013) emphasize that safety is not assured by blind rule-following. Compliance with bad rules that do not fit the real-world situation can lead to accidents (Reason, 1997). Safe work vitally depends on personnel's skills and experience (Dekker, 2017), for example about which rules should be avoided. Formal rules are not viewed as a positive contribution to the traditional professional values of seafarers: "Good seamanship" belongs to a seafarer with practical and social abilities who maintains safe practices with professional judgment, without being told what to do (Antonsen, 2009a, Knudsen, 2009). Since rules usually define operations that everyone knows, vessel operations are rather performed using experience (Bhattacharya, 2012, Aalberg and Bye, 2017). Many companies implement safety management systems that are not tailored to specific vessels and activities. This makes procedures too numerous, detailed, and distanced from actual operations (Lappalainen, 2016, Bhattacharya, 2012). For some situations there are more than one procedure, or too few crewmembers to comply (Aalberg and Bye, 2017, Størkersen and Johansen, 2014). Seafarers are also required to perform documentation "essentially outside their primary functions of ensuring safe and efficient sailing" (Silos et al., 2012). It can lead to stress and exhaustion, particularly because it is viewed as unnecessary and disproportionate (Österman and Hult, 2016).

2.1.1 Research about different types of relations

The early sociologist Ferdinand Tönnies (lived 1855-1936) characterized relationships in different societies, applicable to maritime companies. *Gemeinschaft*, on the one hand, means close, personal relations with

shared language, norms and values, based on feelings, habits and consciousness (Falk, 2000). *Gesellschaft*, on the other hand, define impersonal business-like relations characterized by strategic decisions and exchange of means (ibid).

Relations have also been a topic in safety research. Subordinate levels depend on trust and support from upper levels to be able to do their work safely. This can include care and concern (Jeffcott et al., 2006), personnel, equipment, leadership, time, rest, etc.

Vessel operations rely on a balanced relationship between shore management and crews (Xue et al., 2015), with effective communication (Bhattacharya, 2009) and a management that is committed to safety (Lappalainen, 2016). The safety level on each vessel depends on safety prioritization on board the vessel, in combination with seafarers' interactions with ship owners and regulators (Fenstad et al., 2016).

Most maritime studies report a lack of trust and communication inside organizations (Bhattacharya, 2009). The conclusion of Bhattacharya's (2009) double case study of vessels and ship owners from several countries is that managers and seafarers had fundamentally different understandings. Seafarers wanted to communicate as little as possible with shore-based management. Distant managers' top-down instructions about compliance bureaucratized the entire system. The personnel were offered only low-discretion roles, due to a lack of trust by managers. This is mainly what Oltedal (2011) found on Norwegian-owned tankers, leading her to urge managers to trust their highly skilled seafarers to adjust safety management systems. Employer engagement correlates with safety levels on vessels (Bhattacharya, 2012). Top management in poorly performing shipping companies have been found to be not committed to safety issues (Lappalainen, 2016).

Seafarers on short contracts are seen as particularly vulnerable, as they are in an asymmetrical relationship with their employers, which prevents them from speaking up for their labor rights (Bhattacharya, 2009, Lappalainen, 2016). Seafarers on long contracts are reluctant to offend their managers since that can jeopardize their future plans and lives on the vessel (Xue et al., 2016). The dangers of a non-functioning relationship are described by Antonsen (2009a):

... asymmetrical power relations seem to influence on the decisions regarding when working conditions are to be considered safe enough.... The role of such asymmetries in safety-critical decisions should not be underestimated.

Two companies studied by Xue et al. (2015) aimed to balance decision-making involvement but met limited success. Interviews with managers showed little tension between shore and vessels, but the personnel on four vessels had contrasting views. The seafarers

had to follow management instructions, even though it compromised their decision making and even their safety. They felt obliged to maintain hectic sailing schedules and to accept prolonged working hours despite experiencing fatigue. The crews did not complain to management, as they saw that as useless, but sometimes they made decisions against management's wishes. Their contribution to safety management was weak overall. These conflicts in interests between management and vessel staff worsened safety practices on board.

3 METHOD

The data material consists of 18 qualitative in-depth research interviews with 20 seafarers from a range of ship-owning companies. The interviews were conducted in Greece and Norway (see Table 1).

The interviews give perspectives from different parts of maritime transport. They targeted seafarers of passenger and cargo ships, with coastal and international activity around Norway and Greece. These cargo vessels transport different types of gas, dry bulk cargo, general cargo, fodder for fish farms, or live fish.

The Greek material includes personnel from the passenger and cargo sectors, where the passenger vessels are Greek registered and operate in Greece, while the cargo vessels operate internationally and are registered both in Greece and countries with laxer regulation (called Flag of Convenience) and thus mostly foreign crewmembers. All of these vessels are rather large, usually have crews of some size (10-40 persons) and are owned by companies with many vessels.

In the Norwegian data material, however, there mainly are small vessels transporting cargo on the Norwegian coast. The vessels have Norwegian owners, and some are registered in Norway and carry only Norwegian personnel, while other have Flag of Convenience, a Norwegian captain and often Asian or Eastern European crew.

The seafarers volunteered to be interviewed after information about the project from the researchers through their companies to all their seafarers. In further studies one should work to include more voices from groups such as ratings and machine chiefs.

We conducted eight semi structured research interviews of 1-2 hours. The interviews were based on an interview guide constructed to explore safety culture and its relations to organizational and societal aspects. Among the subjects asked about, were conditions for work and rest (manning, watch-keeping, tasks, etc.), and perceptions of safety, leadership, team culture, safety management, safety regulation, and organizational and national values. In Greece, all interviews were face-to-face on board vessels. In

Norway, six interviews were on phone, with one researcher talking to one ship officer. The other interviews were conducted on vessels, each with one researcher talking to two ship officers. One of these interviews were recorded and transcribed in verbatim. For all interviews, detailed and anonymized research notes were written. Categorization and pattern-analysis was performed manually. The quotes in Section 4 are direct citations from the interviews.

Table 1: Information about the data material

	Greece	Norway
Interviewees	10	10
Interviews	10	8
Background of interviewees	Crew members with professional experience between 3 and 30 years	Ship officers and educated navigators. Eight work as captains or mates on cargo vessels. One work in management. One is partly captain and partly ship-owner (common in Norwegian coastal cargo)
Nationality of interviewees	8 Greek, 2 Turkish	9 Norwegian and 1 Latvian officer
Gender	9 men, 1 woman	10 men
Contract length	4-7 months contracts – on the ship all the time. Unemployed after, but usually new contract and back on the ship after a month	Norwegians: Permanent contracts, working 4 weeks and staying at home 4 weeks. Foreigners in the crews: Often 4-8 months' contracts
Watch schedules	Cargo: Two shifts, commonly 4-4 (but in practice flexible). Passenger: One shift, and sleep at night.	One or two shifts. Two shifts commonly have 6-6 watchkeeping schedule, but in practice flexible.
Size of crews	10-40	6-15
Vessel type	Passenger ships with national routes (5 vessels) and cargo tankers with internat. activity (5 vessels)	Cargo (7 vessels), mainly with coastal activity, some international activity
Registration of vessels	Greek and Flags of Convenience	Norwegian and Flags of Conv.
Data gathered	Spring 2017	Spring 2017

This study is not a comparison of the Greek and Norwegian maritime industry, since there are many groups and characteristics within the data collected in Greece and in Norway. It is a part of the SafeCulture project, funded by the Research Council of Norway, and undertaken by the Institute of Transport Economics (Norway), NTNU Social Research (Norway) and the National Technical University of Athens (Greece). The project's survey results show how work pressure and organizational safety culture are

related to work, which is related to personal injuries (Nævestad et al., 2017, Nævestad et al., forthcoming).

4 RESULTS

Seafarers from many different groups are interviewed, and they describe many common features in how they deal with pressures of production and protection. Some conditions are special for certain groups. The differences are most evident between seafarers on large and small vessels, since the size of the vessel is connected to size of the company and activity, and to closer or more distant organizational relationships.

4.1 Protection: Competence of the crew

Most seafarers are aware that they are responsible for the safety of their shipmates, the vessel and the cargo. Many have great knowledge of and interest in company procedures, and national and international regulation and policymaking. They know their job by hearth, and have various opinions on the large changes derived from the implementation of electronic devices and equipment.

The seafarers tell that they always do the tasks as safe as possible – at the same time as being efficient. Most of the interviews indicate a pressure to go through with risky operations and to work while tired. Handling contradictory goals are talked about as a key characteristic of a good seafarer, but it differs how much of the decision-making is left to the seafarer.

On the *large* vessels, an efficiency pressure is sometimes stated directly to the seafarers from the company managements. This is described in interviews especially at the international and large vessels from large companies. It is not uncommon that officers order seafarers to work faster or under other conditions that they find dangerous, or that onshore management order navigators to take shortcuts to arrive in port on time. (Of course, many international seafarers say their company respect seafarers' judgement and do not force them to hurry up or push the ship into its limits.)

At most of the *smaller* vessels, however, the judgement or handling of conflicting goals is up to the seafarers. It is underlined as an internal criterion of being a good seafarer and employee. The pressure is not from management, but within each seafarer. They take responsibility for their company to stay in business, and thus indirectly for them to keep their job. The coastal seafarers agree that some operations cannot be accomplished, but their doubts and perception of pressure vary. Navigators on the small vessels have much decision-making power, and emphasize how they make their considerations and handle the pressure.

Sometimes you feel it. Maybe when you're approaching the quay, "will this work or not", but usually it works okay. You have to use your common sense, and know your limitations. You can lie at sea until the conditions are better. Even if someone stands at shore and waits, they just have to wait. But you do feel it. But in the end, you don't care, even though you think about it afterwards. Captain, small bulk vessel

4.2 Production pressure: Costs

Maritime transport companies are in competition with other types of transportation, with each other and with vessels of different registration and conditions. Succeeding, buyers focus on price rates.

It's awful, just prices. It's nothing to ask about, just price and price and price. They don't look at what's in the dock, just as long as it floats it's okay. Captain, small bulk vessel

Both small and large companies need to save costs, and a result is low manning, limited potential to buy new equipment, small time margins in routes or port calls, and so on. The seafarers on all vessels want quality in spare parts and other technology, for the sake of safety, but usually they need to cut costs.

What can I do with a Chinese spare part? I don't trust it but it's cheap. An employee behind a desk can't understand the difficulty or the danger. Engineer, large cargo vessel

On *small* vessels, many seafarers see it as their responsibility to handle the economic production pressure. Mostly production can be performed as planned, but sometimes there is doubt whether or not one should start or continue an operation, for example because of bad weather. If they do not go through with operations they will miss out on essential earnings. In such situations seafarers themselves can make cost saving or profit their decision-criteria.

Yes, we can feel pressured to work. [...] There are situations where we wouldn't have approached in that weather, but when we're already there we continue the operation. No one wants to make the decision to abort. It costs a lot to run this vessel. Mate, coastal live fish carrier

Some conditions are truly different on the *large* vessels compared to the small vessels. There seem to be more cost-saving, more pressure from management, more sanctions, less discretionary space and less labor rights. Two interviewees mention that their equipment is of so poor quality that they have to buy new equipment on their own expenses. If they do not buy new equipment, they are not able to comply with pro-

cedures. They cannot risk being reported to the company for ignoring procedures, as this will affect their future in this job. Another seafarer tells about one time he got ill and did not get sufficient treatment, but he would not press charges to the company because that can spoil his reputation so he never can work on a ship again.

4.3 Production pressure: Time

Seafarers experience a pressure to work fast, sometimes under risky circumstances. Our interviewees especially feel the time pressure in situations related to port calls. They describe narrow time margins in all schedules, and too much work to keep the schedule. Vessels in large ports can be delayed by port authorities or logistics even if they get the work done in time themselves.

Time is a reason why seafarers experience a pressure to go through with operations that should have been stopped.

We take short cuts; we don't have manning to get everything formally right. Captain, small general cargo vessel

Time pressure is common for every interviewee, but it varies where the pressure is perceived to come from. On a *large* vessel, an engineer mentioned that he felt terrible when he was given a few hours in order to fix a serious damage on board. On a *small* vessel, the seafarer with engineering tasks would typically not be given a deadline for repairing the damage, as they rather describe an internal pressure or a wish to fix the damage before planned departure from port. Time pressure limits the seafarers' possibility to rest and work safely.

4.4 Production pressure: Much work, less sleep

In addition to the production pressures of costs and time, seafarers experience a pressure of additional work and tasks.

On some *large* vessels, there usually are more than one shift on board, which is not common on *smaller* vessels. Deck personnel mostly rest during sailing, or in some rare periods of long inactivity. For both types, port calls prolong watch-keeping hours and gives no potential for rest until the vessel is back in clear waters (or anchored or docked). This results in limited discretionary space for all seafarers.

You've chosen an occupation and it's been like this since I started at sea. Since I started as deck boy. Everyone had to chip in when we loaded, and we could relax when the ship was at sea. It's a culture that ... It's not possible to change a culture that's been there forever. When the load's ready: «Oh, no, I have to sleep ten hours, I can't work», right. I won't make money and the

company won't make money. Then I'd have to quit. I'd have to get home and stay on welfare, that's next. Captain, small bulk vessel

Some vessels, both *large* and *small*, have sailing schedules with frequent port calls and short sailings. An engineer on a large vessel told us that he was continuously on duty for a long time because the ferry docked in many ports and there was no shift replacement. This made him feel weak and tired, but he accepted it as "how it is" for seafarers. A similar situation is common on some small vessels too.

Particularly on timber runs, some ports are close to each other. You get two-three hours on the pillow before it's up again. And we load for four-five hours and continue. Four-five hours to next port, and loading again. And maybe you have four ports like that after each other. Then you'll be tired when you're finished. Captain, small bulk vessel

Organizational conditions contribute to lack of rest, like the amount of work compared to manning level, watch-keeping schedules and sailing schedules. Even though ship-owning companies are in charge of this, sleepiness is mostly talked about as something that all seafarers experience and need to handle. They mostly blame the vast horizon view, darkness, or the weather.

The majority of the interviewees admit that it is easy to fall asleep on duty. On the *large* vessels, if their shift is on the bridge, they might ask for permission to leave and take a "power-nap" or just ask for a cup of coffee. On *small* vessels one usually consider and make such decisions for oneself.

Seafarers on *large* vessels also mention that in their valuable situations of rest, they still have to stay alert in case someone asks them a question. Especially electro-technicians and officers who have specific and special responsibilities are often asked to solve a problem. To stay alert, even off-duty, is an "unwritten law" on board on the international vessels in this study. Even though rest is a luxury on board, these interviewees point out that in case a superior demands your help, you must present yourself.

4.5 Compliance and violations

Protection equipment is essential and seafarers wear it as a habit and a necessity. They use gloves, goggles and boots for their own safety, and not only to follow procedures.

All the interviewed seafarers report that it is compulsory to read and sign the vessel's safety management system and take part in drills. Still, the seafarers report that their system is violated on a daily basis.

For instance, it says you're to test the emergency radio every day. That's something you just don't bother. Mate, small bulk vessel

Most of the work is done safely and according to procedures, and violations mostly happen because procedures do not fit the situation, the vessel do not have time or manning to comply, the seafarer do not know the procedure, or because of slips. Common slips are to forget to use a hard hat or life vest, but according to the seafarers this has decreased over time. As we have seen, «short cuts» or «calculated risks» to work efficient seems to be a regular part of work among all interviewees in the study. Through the stories in the interviews is evident that many procedures are neglected regularly among the coastal vessels. One of the interviewed seafarers notice that it is dangerous with too many procedures; Now no one has oversight, and some tasks might be neglected over a long time.

In general, it is common for seafarers on both large and small vessels to violate procedures to do the job more efficient.

At the *large* vessels, we are told it also happens that crewmembers are ordered by superiors to violate procedures. One interviewee tell he has been forced to pass alone through a tunnel under the holds of the ship, even though this involved risk of intoxication.

4.6 Production pressure: Bureaucracy

Seafarers on all the studied vessels underline that there is too much paperwork and bureaucracy every time they approach or leave a port. Many feel this as exhausting.

There is too much bureaucracy. Each country has regulations outside the IMO. There should be a list for when we arrive at the port. Not every country sends its own list and in many cases it is sent in the local language, not even in English.

Deck officer, large gas tanker

All interviewees talk negatively about their safety management systems. They are too complex, and with procedures that cannot be complied with. For example, the procedures for maintenance are seen as detailed and unfitting for especially *small* vessels. Gas tankers have additional regulations to follow. If a company owns gas tankers and also other types of vessels, procedures applied for tankers are usually implemented on the other vessels too.

The problem is that the ISM-system's too big and extensive for the ordinary man to take the trouble to get to know it. So it's usually the ship management that knows what it's about. This is an overstatement, because most [crewmembers] know the basics, but not more than that. Mate, small bulk vessel

On the *large* gas tankers, it is told that foreigners sometimes quit because of the extended bureaucratic procedures.

The bad thing is that paperwork is harvested. For example, for each drill done, everyone must sign. In these 2 hours I lose, and I lose them every day, I would have learned a lot of things. Deck crew, large gas tanker

4.7 Production and protection: Social conditions

In the interviews, it is described how the crews take care of another and do not let each other ignore safety measures. If someone finds themselves extremely tired, colleagues can replace them or change shifts. Inconsiderate actions are neither allowed nor forgiven. Interviewees often speak about themselves and their colleagues as one, as a crew or a team. One's safety depends on the others' safety and vice versa. This study has revealed a deep trust between many crewmembers. On *small* vessels this trust is often shared among all crewmembers.

From the *large* vessels, there are many stories about hierarchy and a gap between crew and ship management. Seafarers on large vessels follow and respect hierarchy on board. If something happens, they usually report to the next rank. If the situation is of minor importance it does not reach to higher officers or the captain. On cargo ships, it is reported that it depends on the atmosphere and the captain's attitude as a whole. A very strict captain is better to be avoided. In this study we have heard only a few stories about managers giving positive feedback for crewmembers' compliance with safety rules. Still, most interviewees tell that they always remind forgetful coworkers to wear their personal protective equipment, even if it is someone of higher rank. Safety is perceived as not a reason for misunderstanding or fight. A cadet with three years of experience gave a relevant example:

I saw the captain without his helmet. I felt weird, but I finally told him "captain you forgot it" and I gave it to him. The captain then praised me for this. Cadet, large passenger ferry

On both small and large vessels, problems of behavior may occur when the "atmosphere" on board is not so warm and friendly. Such problems are usually confronted on board and without intervention of the company. Several interviewees informed us that problems can be the result of long contracts (of 6-7 months or seasonal) as nerves becomes tight when the crewmembers are on board for a long time. Long working periods on board are more common on large vessels.

You're always under pressure at work because you live in a prison. It's a small place because we live on the sea and beneath is the unknown. At most, we take a five-minute walk on the ship, we see the horizon, but we cannot take five steps. Deck officer, large gas tanker

5 DISCUSSION

5.1 Common pressure handling

In line with earlier research of conflicting objectives (Rasmussen, 1997, Reason, 1997, Hollnagel, 2009), the seafarers in this study routinely handle pressures of production and protection, with many tasks and little time. Last section showed examples of how the financial situation and competition in transport are present in the seafarers' daily work. Cost pressure is related to time pressure and demands of efficiency. As core tasks are plenty, the added bureaucracy is not welcomed by the seafarers. Administration can lead to fatigue and increase risk (Silos et al., 2012, Österman and Hult, 2016). Loading and discharging situations are described as work intensive, including increased bureaucracy for each port, and no possibility for rest or going off duty in these situations. Most of the interviewed personnel, on smaller or large vessels, can rest on longer voyages. Vessels with frequent port calls – in coastal or international operations – describe a situation that is most difficult to handle, because of fatiguing pressure. Only when business is going slow, such seafarers have time to follow all safety procedures. Earlier research also has discussed how schedule and workload heavily influence the possibilities for safe work and rest (Størkersen, 2017, Sampson et al., 2014). In the present study, too, it is difficult to isolate which conditions are related to for example regulation or market.

All the interviewed seafarers describe how they handle pressures of production and protection with taking “short cuts”, working a lot and resting little. This corresponds with seafarer traditions (Antonsen, 2009a, Knudsen, 2009, Bhattacharya, 2012, Aalberg and Bye, 2017). The norms onboard are strictly followed, as research of maritime safety culture report of (Antonsen, 2009b).

Our results show that conflicting goals of production and protection are constituted by a mix of conditions. These conditions stem from employers, market, and seafarers themselves. Pressures related to costs, time and work are evident for all seafarers in our study, but some aspects come out differently across the groups of interviewees.

5.2 Maritime *gemeinschaft* and *gesellschaft*

Two categories of seafarers seem to be divided between internal and external production pressure. Most seafarers on large vessels experience a pressure mainly from management, while seafarers on smaller vessels experience a pressure within themselves. Their different organizational conditions are related to Tönnies' types *gesellschaft* and *gemeinschaft*.

Many seafarers describe organizational relations corresponding with *gesellschaft*, with impersonal re-

lations and strategic decisions (Falk, 2000). The seafarers describing their context like this, usually work at large vessels with crews and companies of size. Here, hierarchy is firm, and one are to do as told by superiors. Such relations between onshore management and vessel personnel are also described by Xue et al. (2016), Xue et al. (2015), Bhattacharya (2012). A common feature is that the seafarers have single contracts expiring when they leave the ship, and thus have to act strategic to be hired for the next voyage. Such seafarers experience explicit pressures from onshore management, and sometimes onboard management, and describe that they will not keep the job if they do not act upon the pressures. These seafarers' situation is also related to a traditional *workers' collective* (Lysgaard, 1961), where subordinates oppose against work pressure through working as smooth and relaxing as possible (Rasmussen, 1997).

Other seafarers elaborate on an internal pressure, where they want to be efficient because they are responsible for their company's survival. Their relations with shipmates and management correspond with *gemeinschaft's* close relations based on feelings (Falk, 2000). These seafarers typically work in small companies, and smaller vessels on the Norwegian coast (but not only Norwegian registered). In the interviews, they elaborate that they work fast and skip procedures in order to maintain earnings for their employers. They experience to be supported and trusted by the management. They value their autonomy and thus take a lot of responsibility, maybe beyond what management explicitly has stated or expected. This is also described in Norwegian coastal passenger transport (Aalberg and Bye, 2017, Størkersen and Johansen, 2014) and cargo transport and the aquaculture industry (Størkersen, 2012). According to earlier research, management's safety commitment is important for the safety on the vessels (Lappalainen, 2016, Bhattacharya, 2012). In the present study's interviews, the safety commitment of the management in these small companies are not elaborated on. It is possible that the managers are aware of the seafarers' internal pressure, and strategically let them prioritize production over protection.

Another uncertain factor in these results is whether the *gesellschaft* and *gemeinschaft* seafarers are different because of their organizations' or crews' sizes – or other conditions. For example, the seafarers in *gesellschaft* are all from vessels operating in and around Greece, while the *gemeinschaft* seafarers operate in Norway. There is need for more research to elaborate on the categories suggested in this study.

6 CONCLUDING REMARKS

This study adds to research results about a connection between safety and organizational relations. It also

shows that traditional sociological literature of *gemeinschaft/gesellschaft* is valuable in safety research, since it gives a clear understanding of how different relations result in different safety practices.

All the interviewed seafarers describe how they handle pressures of production and protection with taking “short cuts”, working much and resting less. The vital difference between the seafarers on large and smaller vessels is that on the large *gesellschaft* vessels formal structures and management explicitly favor production, while in *gesellschaft* seafarers experience to have support for protective measures, but still choose to favor production.

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