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# Stressors, Coping Mechanisms, and Uplifts of Commercial Fishing in Alaska: A Qualitative Approach to Factors Affecting Human Performance in Extreme Environments

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## Abstract

We depict the physical and psychological challenges of commercial fishing in Alaska as well as the uplifts, or positive experiences fishermen report. We describe an array of coping methods that are utilized during the fishing season and the contexts in which they occur. Our findings help clarify the link between human behavior, stressors, coping mechanisms employed, and uplifts experienced when working in extreme conditions. By doing this, we provide a better understanding of the effects that severe conditions have on wellbeing, such as working for long periods of time in cramped quarters in remote, extreme environments, and how Alaskan fishermen cope with them.

*Keywords:* commercial fishing, uplifts, isolation, confinement, extreme environments, stressors, coping mechanisms

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## 1 Introduction

Commercial fishing is a stressful and dangerous occupation. Even though it has improved over the years, commercial fishing in Alaska is still 29 times more dangerous than any other occupation in the US (Lazakis, Kurt, & Turan, 2015; Rezaee, Seiler, Pelot, & Ghasemi, 2016; Syron et al., 2017). A total of 179 fishing-related fatalities occurred during the 15-year period of 2000–2014, averaging 12 deaths a year (Syron et al., 2017). Vessel disasters such as sinking, capsizing, running aground, or fires that forced crew to abandon ship were the number one cause of fatality (31%), while the second leading cause was drowning due to falling overboard (27%) (Syron et al., 2017). Unlike in the 1980s and 1990s, when Alaska's crab fishery caused the most injuries and fatalities, nowadays, the salmon fishery has become Alaska's deadliest catch (Case, Lincoln, & Lucas, 2018).

Exposure to the occupational hazards of the maritime sector, such as safety risks and dangerous weather, is inherently demanding and stressful (Carotenuto et al., 2013; Leszczyńska, Jeżewska, & Jaremin, 2008; MacLachlan, Cromie, Liston, Kavanagh, & Kay, 2013; Slišković, 2017). The psychological response to these dangers and hazards is stress, which transpires when there is a discrepancy between the demands of the situation and an individual's capability to meet those demands (Johnson et al., 1998). In addition to extreme and dangerous demands, there are also other requirements of fishing that can be characterized by a plethora of physical and psychological stressors that include, but are not limited to, isolation, confinement, boredom, monotony, social frictions, long hours, arduous and complex workloads, noise, sleep deprivation and disturbances, financial difficulties, limited access to medical evacuation, and being away from family and friends (Carotenuto et al., 2013; MacLachlan et al., 2013; Palinkas, 2003; Pollnac, Monnereau, Poggie, Ruiz, & Westwood, 2011). Research shows that such stressors negatively impact health and wellbeing and correlate with high work-related morbidity and mortality rates (Johnson et al., 1998). Yet, many fishermen return year after year to fish another season.

So why is it that fishermen persist in fishing, despite the high-stress occupation, the adversities, and negative outcomes that come with fishing? Part of the story is that fishermen are able to cope with those stressors by employing psychological defense mechanisms to minimize the subjective perception of threats (Pollnac & Poggie, 2008) such as denial of or minimizing risks (Pollnac et al., 2011). At the same time, they might also continue to fish because of the positive aspects of fishing that fishermen experience, also known as uplifts (Kanner, Coyne, Schaefer, & Lazarus, 1981). Uplifts are positive experiences that help reinforce one's sense of wellbeing (Kanner et al., 1981). These positive elements in this context include the pristine nature of the area, pride in the profession and in providing a healthy food source, as well as the

comradery felt amongst crew members. The psychological wellbeing of fishermen is important because, not only are fatality rates high due to their dangerous occupation (Case et al., 2018; Syron et al., 2017), but depression and suicide are also rampant among seafarers (Carotenuto et al., 2013; Roberts, Jaremin, Chalasani, & Rodgers, 2010).

In the present paper, we study stressors (occupational and environmental), coping mechanisms (i.e., how people deal with the stressors), and uplifts (i.e., positive, health-promoting experiences) among a sample of Alaskan fisherpoets, a group of commercial salmon fishermen who share their experiences working on the sea through stories, poems, and songs<sup>1</sup>. Although the different commercial fishing types and areas in Alaska are distinct, they all involve working in isolated, confined, and extreme (ICE) environments. By studying not only the challenges but also the positive aspects of commercial salmon fishing in Alaska, we aim to understand which aspects of the job help fishermen stay psychologically healthy, despite the many hazards and stressors of fishing. This is important to consider when tackling industry issues such as the greying of the fleet (Donkersloot & Carothers, 2016) or social isolation, depression, and suicide amongst seafarers (Seafarers' Trust, 2017).

The rather narrow focus of this research on stressors, coping mechanisms, and uplifts is intended for three reasons. First, to our knowledge, this is the first study to cover both the challenges and the positive aspects of the Alaskan commercial fishing industry from a psychological perspective. Hence, our findings can be of use when selecting, training, and informing people willing to engage in the industry. Second, as noted above, certain stressors and uplifts experienced by fishermen are shared with other occupations in extreme environments, such as those who work in the Arctic and Antarctic (Palinkas & Suedfeld, 2008; Smith, Kinnafick, & Saunders, 2017) or astronauts (Golden, Chang, & Kozlowski, 2018; Ihle, Ritsher, & Kanas, 2006), which makes our findings useful for these areas of application. Third, we hope to provide a framework of stressors, coping mechanisms, and uplifts to draw from for future research on working in extreme environments.

### *1.1 Characteristics of Working in ICE Environments*

In this section we describe the characteristics of working in an ICE environment, considering both the physical and psychological environment in which fishermen work. Commercial fishing boats are hard places to work. There is constant noise, vibration, and noxious fumes from the engine and generator, coupled with working long and often wet hours, treacherous weather, financial insecurity, physical and mental fatigue, and threat of injury or death. These occupational stressors, in turn, parlay into psychological stress

(Johnson et al., 1998). In this context stressors can be either environmental or physical in nature (e.g., slippery decks, foul weather, getting tangled in gear, noise, being swept overboard, falling into a fish hold) or they can be psychological (e.g., isolation, confinement, social monotony, lack of personal space, interpersonal conflict).

#### *1.1.1 Isolation*

Isolation is the physical separation from others or civilization, the reduction of psychologically and socially meaningful stimuli (Leach, 2016), and living or working in a remote location that is an impractical distance to travel on a daily basis (Roma & Bedwell, 2017). In Alaska, some of the salmon fisheries are more remote than others, and as a result physical, social, and psychological isolation are frequently encountered. Cell phone coverage at sea is limited and even if making a call is possible, fishermen are often so engrossed in finding and catching fish during a fishing opener, frequent or long conversations may be impractical. Therefore, outside communication is often limited to other boats in the area, listening to fisheries management announcements, and monitoring weather conditions and current sea states.

Physical isolation can be a positive or a negative experience. On the one hand, fishing in a remote location is a reprieve from the hassles of everyday life and can be rewarding. However, isolation can also generate negative emotions such as loneliness or guilt of long-term separation from loved ones (Carotenuto et al., 2013; Slišković, 2017; Smith & Barrett, 2019). Social isolation is a characteristic of life at sea and refers to an absence of other people (Slišković, 2017) whom offer supportive communication (Seafarers' Trust, 2017). A lack of social connections can impair coping in difficult situations (Leach, 2016; Smith & Barret, 2019), and can lead to loneliness, boredom, and feelings of exclusion, anger, or despair (King et al., 2019; Mellbye & Carter, 2017; Seafarers' Trust, 2017). Moreover, isolation can lead to anxiety, fright, and panic in ICE environments (Suedfeld & Steel, 2000). This is also true for fishermen. Social isolation is known to be major cause of psychological issues such as depression (Carotenuto et al., 2013; Slišković, 2017) or even suicide (King et al., 2019; Mellbye & Carter, 2017; Seafarers' Trust, 2017). Like others who work in ICE environments, fishermen can be prone to emotional deprivation (Palinkas, 2003) because of the infrequent communications with the outside world. The difficulty of these prolonged separations can be amplified by personal crises such as relationship difficulties, financial issues, illnesses, or the death of a loved one. Additionally, if joyful milestones happen to fall within the fishing season, these events too are also frequently missed, such as weddings, births, and graduations. Some of these events are even missed on an annual basis, such as birthdays and anniversaries, adding guilt and or depression to the list of grievances fishermen can experience at sea.

<sup>1</sup> For more on fisherpoets, see <http://www.fisherpoets.org/2019-fisherpoets-gathering.html>.

### 1.1.2 Confinement

In addition to seasonal isolation from the outside world, life on board is often cramped with little to no personal space. Fishing vessels in Alaska are designed to either cut through or glide on the water efficiently, capture and hold large quantities of fish (8,000–65,000 lbs/3,600–30,000 kg) as safely as possible, provide protection in high seas, while allowing for a small measure of creature comforts. Boat type (covered or uncovered), size (15–58 feet/4.6–17.7 m), and crew size (1–5) can vary and are determined by area or fishery.

Confinement is characterized by limited physical mobility and is often accompanied by limited exercise and muscle atrophy in the lower extremities, which has been shown to lead to irritation, depression, and decreased morale (Suedfeld & Steel, 2000). Factors of the individual psychological component of confinement include limited sensory stimulation as well as a lack of personal and physical space (Roma & Bedwell, 2017; Smith, Sandal, Leon, & Kjaergaard, 2017), experienced after prolonged periods of time on a small vessel with the same few individuals. For instance, crew sleep in the small confines of the fo'c'sle (bow of the boat where the crew quarters are located) and some bunks are so short that the feet of crew members touch. With such limited physical space, there is typically little room for personal belongings (e.g., clothing, gear, books), which is sometimes simply tucked in any free space in the bunk, hung somewhere in the bunk, or used as a pillow. With living space in such close proximity and lack of comforts (such as in Bristol Bay where 4–5 people work and live on a 32-foot (9.75 m) boat for six weeks), social problems arise such as lack of privacy, territoriality, and interpersonal conflicts regarding the use of resources (Suedfeld & Steel, 2000; Swift, 2019).

Fishermen typically live on the vessel during the fishing season. The lack of personal space combined with isolation, confinement, and working long hours in harsh environmental conditions can have a negative impact on social relations. Fishermen might experience social monotony, caused by the lack of diversity of social contacts (Peldszus, Dalke, Pretlove, & Welch, 2013) which can cause increased rumination and disagreements (Wu et al., 2015). During the course of the fishing season, the line between work and leisure can become blurred with little variance or choice of individuals to interact with. This continual social contact increases impending conflict (Palinkas, 2003), compounded by lack of sleep and working long, sporadic, arduous hours. Often going to shore, even for a brief escape, is seldom feasible and in some cases not even an alternative because of the remoteness of the fishing grounds. This implies that physically removing oneself from social conflicts on board is not always a possible solution or option. Moreover, there is limited free time or recreation, such as sports, that could improve health and social relations (Carotenuto et al., 2013). The presence of all these psychosocial stressors is due to the

peculiarities of the profession (Zolotas, Kalafati, Tzannatos, & Rassias, 2017).

### 1.1.3 Extreme physical environment

An extreme environment is one with harsh and challenging conditions in which an individual needs to adapt to in order to survive. Characteristics of Alaska as an extreme environment include glaciers and glaciated rivers, summer time ocean temperatures that typically range from 46 to 54 °F (8–12 °C), many hours of daylight in the summer (more than 20), and “big” weather. Even though the salmon fishing season (May–September) is not in the winter when the conditions are more severe (unlike crabbing and cod, Pollock, and halibut fishing), foul weather is still experienced. Maritime summer temperatures typically average in the 40s and 50s °F (4–10 °C). Gales and storms can hit with winds up to 50–75 mph (80–120 kph) (World Meteorological Organization, 1970) with the average blow around 20–30 mph (32–48 kph) and sea states vary between flat calm to 18 feet (5.5 m) or so. Storms make fishing exceedingly difficult or render it impossible to deploy and retrieve fishing gear while gales (a lesser wind speed) typically just make fishing tediously demanding.

Physiological responses to these environmental conditions may include discomfort to injury, nausea, and/or seasickness, which can bring on symptoms such as fatigue, headache, dizziness, nausea, and other adverse effects due to constant noise and vibration (Golding, 2017). Foul weather can also negatively affect fishermen psychologically. A boat in constant motion, either while running or anchored, can result in creating a general grating feeling (i.e., it is tiresome to be in constant motion) and can be physically fatiguing after long periods of time (Zolotas et al., 2017). Extreme weather makes simple duties difficult and problematic or even dangerous, such as cooking food. Moving pots of boiling water can cause third-degree burns while items such as pots, pans, knives, and canned goods torpedo around the galley. Opening the refrigerator in a storm can be a disaster. Even leisure activities (e.g., reading, watching movies) can be difficult or unbearable because of the constant movement of the boat. Disruption of sleep can occur when big waves launch crew members from bunks or the noise of the storm and the constant motion can make sleep challenging or impossible.

The fisheries we studied all lie between 58 and 60 degrees north and enjoy 17–20 hours of daylight. Rigorous fishing methods and near-around-the-clock daylight tend to disrupt circadian rhythms. This circadian disruption, coupled with long, grueling 12–18 hours or more workday demands can cause fatigue, impaired performance, negative affect, interpersonal tension, and psychic stress (Pattyn, Van Puyvelde, Fernandez-Tellez, Roelands, & Mairesse, 2018; Slišković, 2017). Once the season begins, most fishermen work every day and about 20 hours a day during the peak of the season, causing cumulative fatigue.

## 1.2 Coping Mechanisms

Research shows that employees in high-stress occupations and in high-risk settings are candidates for the debilitating effects of stress. However, fishermen may not suffer from these stressors to the same extent as other employees (Riordan, Johnson, & Thomas, 1991). The ability to be open to new experiences and to be mentally flexible can help minimize and cope with stress, as well as employing uniquely effective coping mechanisms. Undoubtedly, fishermen can and do cope with these occupational and environmental stressors, for instance, by use of coping mechanisms that have been adapted to suit their environment (Riordan et al., 1991).

Coping is the appraisal process of a demanding situation and the utilization of a variety of mental and behavioral strategies to manage stressors or to manage the demands of stressful situations as they transpire (Folkman & Moskowitz, 2004; Litman, 2006; Van Wijk, 2017). According to Lazarus's cognitive-motivational relational theory (CMRT) of coping, emotions lie at the very core of the stress appraisal process (Lazarus, 1991). In particular, CMRT argues that, when goal progress or attainment goes smoothly, positive emotions result, while negative emotions result from goal thwarting or delay. Moreover, those emotions not only result from goal pursuit, but also influence the appraisals one makes regarding goal attainment or thwarting. As emotions tend to be recursive and contagious, identifying positive antecedents that lead to positive outcomes of coping is key in ICE environments (Wagstaff & Weston, 2014).

Two typical approaches to cope with an environment that is perceived as taxing or exceeding one's resources are *problem-focused* coping strategies, intended to solve the problem, modify or avoid the course of stress, and *emotion-focused* coping strategies, intended to minimize or manage the emotional distress caused by the stressor (Litman, 2006; Van Wijk, 2017). The former is typically used when one feels that one has some level of control over the situation whereas the latter is usually used when one feels all one can do is endure the stressor(s) because one has no other choice (Riordan et al., 1991; Van Wijk, 2017). When one has a measure of control over a stressful situation, such as dealing with the risk of drowning when falling overboard, fishermen can either decide to wear a personal flotation device (i.e., problem-focused coping) or not. On the other hand, if a fisherman is not aware of the benefits of wearing a personal flotation device or if one is not available, they can simply tell themselves that the odds of falling overboard are not that high anyway (i.e., emotion-focused coping).

In ICE environments, some aspects of the job simply make it impossible to manage the stressor directly due to the constraints of the environment coupled with the fact that most stressors of confinement, isolation, or the environment are fixed and constant (Riordan et al., 1991). As a result, emotion-focused, rather than problem-focused,

coping strategies are commonly used. Such emotion-focused coping strategies include minimizing, avoidance coping, appreciation, and positive reappraisal (Folkman & Lazarus, 1988; Pavani, Le Vigouroux, Kop, Congard, & Dauvier, 2016). Unlike denial, which represses the existence of a risk, minimizing is a coping mechanism in which one refuses to ruminate on a risk while continuing on in a stoic manner, as if there was little threat at all (Aldwin & Revenson, 1987). In a similar vein avoidance, while doing little to change the stressor like problem-focused coping does, could be useful in such situations where interpersonal conflict may be risky and circumventing the stressor is the safest strategy (Riordan et al., 1991). Conversely, appreciation pertains to emphasizing and treasuring features of a situation or an environment that results in creating a meaningful link (Pavani et al., 2016), for instance, appreciating the magnificent glaciers of Alaska opposed to lamenting the cold, northerly wind. Supporting the idea that appreciation is an important coping mechanism in fishermen, previous research found that fishermen are more optimistic than a comparison group of land-based employees (Riordan et al., 1991). Finally, positive reappraisal entails cognitively reevaluating negative events by focusing on the optimistic characteristics (Pavani et al., 2016) such as good fishing in bad weather. By using such coping strategies, individuals are able to broaden their thought-action inventory, which leads to discovery of novel techniques to assess the situation (Fredrickson, 2001; Pavani et al., 2016). These novel techniques then serve to help appraise and cope with future challenges. Supporting this idea, research has shown that a sense of control combined with a positive perspective increases people's ability to cope with a stressful situation (Smith, Barrett, & Sandal, 2018).

Studying the coping mechanisms employed by fisherfolk is valuable because some coping strategies are more efficient than others in ICE environments. In particular, problem-focused coping is typically better at solving the problems which cause stress than emotion-focused coping because it is aimed at eliminating the source of the stress (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986; Strutton & Lumpin, 1994). Yet, in specific situations, even coping mechanisms that require minimal effort may be very adaptive to deal with stressors (Aldwin & Revenson, 1987). Knowing which coping mechanisms are typically utilized is important because coping strategies can be (re)trained (Skinner & Zimmer-Gembeck, 2007; Van Wijk, 2017), implying that the insights of this paper might be used to school fishermen on how to effectively deal with the stressors they encounter in an efficient and effective manner.

## 1.3 Uplifts

Despite the arduous work, long hours, variable weather, and other stressors encountered when working in ICE



environments, it is also important to note that there are positive and enjoyable experiences. The wildlife, for instance the marine life, and the natural beauty are advantageous facets of working in ICE environments (Blackadder-Weinstein, Leon, Norris, Venables, & Smith, 2018; Kjaergaard, Leon, & Venables, 2015; Suedfeld, 2001) as well as comradery, pride in one's profession, positive emotions, resilience, and a sense of community.

Whereas previous research has predominantly focused on the negative aspects of working in ICE environments and understanding the risks to health continues to be important, people may also benefit from their ICE experiences. In fact, the very concept of uplifts was created to counter the dominant focus on hassles in the stress literature and to be able to examine the impact of positive life experiences (Kanner et al., 1981).

Important to note is that positive and negative experiences are not mutually exclusive. People can enjoy an experience even though they are—in that same situation—subjected to psychological or environmental stressors (Palinkas & Suedfeld, 2008). Fishermen, for example, typically experience joy and pride in catching a sustainable, nutritious food source even when the weather is nasty. The study of the positive effects is not intended to diminish the negative effects, but in order to present a complete assessment of experiences of commercial fishing, both need to be considered.

This study was designed to explore the positive and negative characteristics of working in ICE environments by specifically looking at the experiences of fisherpoets engaged in commercial fishing for salmon in Alaska. By doing so, we hope to advance the knowledge of the dominant stressors, coping mechanisms, and uplifts prevailing in such settings while contributing to better understanding, selection, or training of people willing to engage in or enter the industry.

## 2 Methods

### 2.1 Interpretative Phenomenological Analysis

Interpretative phenomenological analysis (IPA) is a qualitative methodology which examines how individuals make sense of their life experiences (Smith, Flowers, & Larkin, 2009; Smith & Osborn, 2004). IPA emphasizes researching individuals idiographically (as opposed to nomothetically, where the focus is on researching samples or populations) and focuses in depth on the particular, rather than the general (Larkin & Thompson, 2012). Specifically, IPA focuses on how people perceive and discuss their own experiences (Pietkiewicz & Smith, 2014), how they interpret and make meaning of the events they encounter, while allowing for the researcher's own interpretation of the participant's experience (Smith & Osborn, 2004).

The latter is of particular importance as the first author has over 20 years of experience in Alaska's commercial fishing industry. This benefit of combining a personal understanding of the industry with a researcher's perspective allows for a more informed combination of knowing what to tell outsiders (etic) about what matters to insiders (emic).

In order to obtain rich, detailed, and reflective data, IPA requires a small sample size and a homogenous group (Larkin & Thompson, 2012). This particular sample of fisherman was selected because as fisherpoets, they can offer a valuable perspective on their commercial fishing encounters since they are typically reflective (through writing prose, poems, and songs) about their experiences fishing.

IPA provides insightful analysis by way of the quality, rather than the quantity of data (Larkin & Thompson, 2012). Patterns of meaning or themes are identified in the data from detailed, line-by-line analysis of and commentary on the data. Below, we present the reader with an overview of analysis by producing a narrative account and giving examples of experiences or situations that are of significance to our participants (Larkin & Thompson, 2012).

### 2.2 Sample

To better understand commercial fishermen's experiences at sea, we studied a sample of fisherpoets. The reason for this particular type of fisherfolk is that: (a) they have experience with being interviewed, (b) they are reflective about their experiences (e.g., their thoughts, feelings, and behaviors) of working on the water, and (c) they are generally articulate and expressive of their emotions and behaviors. Alaskan fishermen are well suited to study the connections between stressors, coping mechanisms, and uplifts experienced since they work for long periods of time in cramped quarters and in remote, extreme environments.

A total of nine interviews were conducted with commercial fishermen. Pseudonyms were used to ensure confidentiality. To achieve a highly homogeneous data source, we only interviewed skippers who fish for salmon in Alaska during the summer months and who also participate in Astoria's Fisherpoets Gathering in Oregon, US. Fisherpoets were 23 to 70 years old ( $M = 57.2$ ;  $SD = 15.10$ ; median age = 61). Job tenure ranged from 4 to 60 years ( $M = 33$ ;  $SD = 19.0$ ; median tenure = 30). Seventy-eight percent of the participants are male. All were employed in the Alaska salmon fishery at the time of the interviews and all four different gear types (seine, gillnet, setnet, and troll) are represented. The fishing season typically runs from four weeks to five months (May–September), all in remote areas of Alaska (from southeast to Bristol Bay in the Bering Sea). Most work offshore from two days to six weeks at a time (except the setnetters who fish along remote beaches).

All typically work seven days a week, 12–20 hours a day throughout the season and work 18–20 hours a day for the peak of the season (one–four weeks). Sixty-seven percent of the fisherpoets fished with a crew ranging from one to four, 22% fished alone while 11% fished either alone or with crew. Fishing vessels ranged from 15 to 58 feet (4.6–17.7 m) in length, the smaller vessels being open skiffs and used for setnetting.

### 2.3 Data Collection

We applied IPA to semi-structured, in-depth interviews of fisherpoets, along with the collection of demographic information such as age, tenure, fishery, and gear type. The interviews are further described below. Memos were written subsequent to the interviews and were used to engage in the first author’s self-reflection about potential personal biases (Suddaby, 2006).

### 2.4 In-Depth Interviews

All of the nine interviews were conducted by the first author in Oregon, US. Consent for the study was granted by the Vrije Universiteit Brussel Ethical Committee (ECHW\_125). In-depth interviews were based on semi-structured interview guides from current IPA literature (Smith et al., 2009). Interviewees were asked open-ended questions, such as how they experience their living and working conditions at sea and being alone or in a group for long periods of time. Interviews ranged from 30 to 90 minutes (SD = 17.00) and were audio-recorded for transcribing.

## 3 Results

In line with previous research on stressors and coping in ICE environments, we categorized the stressors, coping mechanisms, and uplifts along the three high-order ICE categories: confined space, isolation, and environment. Each category was then further divided into two subcategories, a physical and a psychological subcategory. In what follows, we first review the stressors and coping mechanisms that were reported by the participants for each category. An overview of these stressors and coping mechanism can be found in Table 1. After having discussed the stressors and coping mechanisms per ICE category, we review the uplifts characteristic of professional Alaskan fisherfolk.

Note that our overview is not exhaustive as other stressors, coping mechanisms, and uplifts were mentioned during the interviews. We chose, however, to focus on the themes that occurred most often.

### 3.1 Confined Space—Physical

#### 3.1.1 Stressors

Being confined on a small vessel with cramped quarters and restricted mobility was the most frequently voiced stressor among the fisherpoets, more so than foul weather, fatigue, sleep disturbances, or even the dangerous nature of the work itself. A boat is an isolated, confined environment which contains basic amenities, the crew, as well as the crew’s whole realm, both occupationally and socially, since fishermen are at their workplace 24 hours a day during working and nonworking hours (MacLachlan et al., 2013; McVeigh et al., 2017). Specifically, the most common

Table 1  
Environmental and occupational stressors, coping mechanisms, and effects of commercial fishing in Alaska.

	Stressor	Coping mechanism
Confined—physical	<ul style="list-style-type: none"> <li>• No space</li> <li>• Little comfort/spartan</li> </ul>	<ul style="list-style-type: none"> <li>• Internal communication</li> <li>• Coordinate/organize</li> <li>• Escapism</li> </ul>
Confined—psychological	<ul style="list-style-type: none"> <li>• No privacy</li> </ul>	<ul style="list-style-type: none"> <li>• Escapism</li> <li>• Self-monitoring</li> <li>• Complacency</li> </ul>
Isolation—physical	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• None</li> </ul>
Isolation—psychological	<ul style="list-style-type: none"> <li>• Loneliness</li> <li>• Boredom/monotony</li> </ul>	<ul style="list-style-type: none"> <li>• External communication</li> <li>• Self-entertain</li> <li>• Socialize (on shore)</li> </ul>
Environmental—physical	<ul style="list-style-type: none"> <li>• Foul weather</li> <li>• Danger</li> <li>• Arduous/long hours</li> <li>• Physical discomfort</li> </ul>	<ul style="list-style-type: none"> <li>• Normalize/minimize dangers</li> <li>• Reappraisal</li> <li>• Compensate</li> <li>• Stretch/exercises</li> </ul>
Environmental—psychological	<ul style="list-style-type: none"> <li>• Foul weather</li> <li>• Fatigue/lack of sleep</li> <li>• Circadian disruptions</li> </ul>	<ul style="list-style-type: none"> <li>• Compartmentalize</li> <li>• Reappraisal</li> </ul>

grievance was lack of physical, personal space since most fishing boats are small and crowded (Pollnac et al., 2011). During the fishing season, most fishermen employ either one or two people on a 28-foot (8.5 m) boat for three to five months or three to five people onboard a 32-foot (9.75 m) boat for nearly two months, depending on the fishery. Interestingly though, those who fished alone on the same sized vessels for the same amount of time or longer did not voice concerns of confinement or lack of personal space. Specific examples articulating this particular stressor are provided in the quotes below from the fisherpoets:

*The boat is little. So, everything has to be kind of in its place and organized. And so, when someone, a lot of times people will bring too much gear. And I don't want to try to inflict upon them what they need but I got to, I say, "You know this is how much space we have." And I've got to usually I get rid of most of my stuff and get by with this minimal possible.—Morgan (28-foot/8.5 m boat)*

*Oh, my boat, it's spartan. It's an aluminum skiff, so we live down below. The greenest crewman lives in what is called the "dog bunk" and you have to crawl up through another bunk to get to it. And his feet are constrained. And his head is up by another crewman's feet, so he gets kicked occasionally at night. But they signed for that and they know about that before they come on board. There's a tiny little cook stove, there's a sink that leads to a bucket for draining, the fridge is the cooler. We keep our food right there, there's no space. Because it's an aluminum boat, it sweats. So, people living down there plus boiling water, making coffee, often we'll get a little rain from the overhead. It drips on your face at night. These things build character.—Kelly (32-foot/9.75 m boat)*

### 3.1.2 Coping mechanisms

In order to cope or manage with the lack of personal and/or physical space aboard the fishing vessels, fishermen try to provide personal space, a sense of privacy, and a level of civility among themselves, which is reflected in the following quotes:

*Everyone gives one another privacy, when there's time, by reading privately and not pestering one another and by sleeping.—Kelly*

*When it comes time for cooking on the boat, the quarters are very small so you got stay out of the way. One guy will go to the bunk and get out of the way and I'll sit in my chair, get out of the way while the cook is cooking.—Chris (32-foot/9.75 m boat)*

*We share a lot. We communicate a lot...I mean it's a small space, so it's might be "Are you going to sit there? Can you pass me this?" You know, just constant...*

*communication. Giving each other space...when it's needed or when it's possible... What I look for [in a crewmember] is someone I really respect who really respects me. Because that mutual respect is like, I respect your personal space...—Skyler (32-foot/9.75 m boat)*

*Shower. Booze. Sleep. Good book. But we don't usually have time for the good book. So, that's three kinds of escape.—Kelly*

## 3.2 Confined Space—Psychological

### 3.2.1 Stressors

Due to the vast fishing areas and remote locations, boats are often at sea for days or weeks at a time. In Bristol Bay, for example, the tides are so large that there are essentially no harbors. Once a boat launches, they are typically at sea for the next six to eight weeks without a chance to go ashore (with the exception of the setnetters who fish along the remote beaches). Because of this, fishermen spend a significant amount of time together on a small boat, with little to no separation between work and leisure (Palinkas, 2003). This confinement, accompanied by perpetual isolation and prolonged exposure to a monotonous environment makes the behavioral and psychological reactions to confinement evident by impairment of thinking, depression, irritability, and hostility (Fraser, 1966). These outcomes can result in interpersonal conflict and the lack of personal space, which was the most reported stressor amongst all fisherpoets:

*Personal space? There's none...there's just no space, so... It can be irritating. In a tight space, I've really got to watch myself... It's just there are so tight quarters you know, you really have got to be conscious the whole time... I try to think about making it easy on them [the crew]. And sometimes it tests me. It really tests me. But, I mostly just try to hold myself together.—Morgan*

*...I will be like "Wow, this place is crazy and I can't stand it for another second." I definitely felt those kinds of frustrations. There are issues that were really small issues that got blown up to a point where we couldn't even stand being around each other.—Skyler*

Lack of personal space tends to be a common stressor amongst those who work in ICE environments. The identified stressors of not having enough alone time seems to gnaw on the majority of the fisherpoets. The psychological aspect of the lack of space was not noted by those fisherpoets who fished alone, even though their boat size is just as small, nor was it noted by the setnetters, who have the smallest boat (15 feet/4.6 m) though they can retreat at the end of their shift to a small cabin on a remote beach. This implies that confinement is not only stressful because



of the actual lack of space (i.e., the physical aspect), but also about the continuous lack of “me-time” (i.e., the psychological part of confinement).

### 3.2.2 Coping mechanisms

As previously mentioned, fisherfolks are on boats with cramped, shared physical and psychological space for weeks or months. Long-term exposure to a restricted environment can take its toll on the fishermen, psychologically. Below are examples of coping mechanisms utilized to negotiate and manage these stressors, including isolating oneself from others (both physically and mentally) or taking others’ needs into account:

*Personal space is hard... We will often time take “naps”...it just means...you can go into your bed...you can’t hear other people...and close the curtain and that is your “nap.” It’s also a time when you don’t have to be near anyone else or talk to anyone else.—Skyler*

*A good fisherman understands, I mean, you can be in close proximity to somebody and working side-by-side and still have terrific personal space. You know, silence is as good as another room.—Taylor (15-foot/4.6 m boat)*

*I’m more concerned with making the other person comfortable. So, I got to spend a lot of time thinking about...trying to make it work... Takes some time and effort.—Morgan*

The above excerpts illustrate both problem-focused (first quote) and emotion-focused (second and third quotes) approaches to coping with creating personal space and attempting to get along with others, despite the lack of physical space onboard and prolonged togetherness.

## 3.3 Isolation—Physical

### 3.3.1 Stressors and coping mechanisms

Interestingly, there were no reports that fell into the category of physical isolation and therefore there were no reports of coping mechanisms. Most stressors and coping mechanisms for isolation were related to the psychological effects of isolation rather than the physical effects.

## 3.4 Isolation—Psychological

### 3.4.1 Stressors

Despite the fact that there are often other boats in the area, which provides a chance to socialize, socializing with other boats typically only occurs during the closures when the fisherfolk are not working. When actually fishing, their only in-person contact is with whoever is already on board as crew, which is obviously no one if they fish alone. Often, operating a smaller fishing operation is not very lucrative. There is a saying that “there is too much work for

one, but not enough money for two.” So, even if a fisherman wanted to hire crew, it is not always financially justifiable. Below are excerpts that envelop some of the mindsets surrounding fishing for salmon in remote, isolated areas of Alaska:

*Sometimes, I find myself lonely and I want to go to town but after a short time then I’m jonsing to get back out there by myself... And I really love people. I need to be around people. But I think I love people and need to be around people more because of my isolation.—Morgan*

*Mostly you just get bored of the people you are around.—Skyler*

*It would be nice to have somebody on the boat, you know, some of the time... I’d rather have company, I guess, but I just can’t afford it. There’s no money in it.—Finley*

### 3.4.2 Coping mechanisms

A recurrent theme is that being alone is not the same thing as feeling alone or lonely. Despite being the only one aboard a vessel, these fishermen tend to feel comforted simply by the fact that there are often other boats around them. Even if these boats are not physically near them, knowing that other fisherfolk are communicating on the VHF radio seems to be enough to stave off loneliness:

*For me, it’s not solitary work. Even when I was gillnetting by myself, it wasn’t solitary work. You had your, your friends on the radio, and, and if you got into a pickle, they could help you. You got, you know, on the way out to the grounds, you would tie up with each other on the way out, you’d, you would hang in the harbor together so, it wasn’t ever solitary.—Taylor*

*I might not talk on the radio...for several days but I have it on, I would listen to it.—Kim (58-foot/27.7 m boat)*

*And then I spend a lot of time...communicating with members of my radio group about where we think the fish are. Which is, I think basically in exchange of ignorances usually. We call it our “radio group therapy.”—Kelly*

*There’s this whole community that hangs out on Channel 14. So, you’re not actually fishing alone. You’re fishing with all these other people. People you don’t even know by name...you know?—Finley*

The above quotes express the collective feelings of the fisherpoets regarding fishing in isolated regions, which is one aspect of their job over which they have no control. All reported that, while they may be alone on board, they do not necessarily feel alone because of being able to communicate through the VHF radio. These findings lend themselves to what is found in previous literature in that fishermen recognize there is nothing to do to change this

aspect of their job, with the exception of possibly hiring a crew member, if it were lucrative to do so.

### 3.5 Environmental—Physical

#### 3.5.1 Stressors

Working conditions on a fishing vessel can vary extensively depending on the type of boat, the fishery, type of gear, and, often, the weather. Common factors reported among all participants were lack of personal space, long hours with arduous workload, and repetitive work, which corresponds with stressors other fishermen have reported (Johnson et al., 1998; Riordan et al., 1991). Sometimes the weather is pleasant but often this is often not the case. Even the summer weather in Alaska can frequently be nasty. Water temperatures are low enough that raingear and gloves are always worn to protect from the cold, hypothermia, or the salty water. The repetitive nature of the work, such as picking fish out of the net, often leads to sore fingers and shoulders or muscle fatigue. The following quotes illuminate how these environmental stressors affect the fishermen:

*We were caught in a hundred-mile-an-hour gale and the waves were higher than the mast and the boat was trying to sink... One guy got religion and the other guy quit [laughing].—Kim*

[The working conditions] *Variable... Sometimes it's the most pleasant thing in the world and sometimes it's the grubbiest job that you can imagine. Well, sometimes we're just picking fish in good weather at our leisure and sometimes we're hanging on in lousy weather. And, of course it's muddy, we spend a lot of time in the mud. So, that takes some getting used to... And everybody is prepared to go, you know 24 even 30 hours probably without a break, if they have to. But the conditions are pretty grim I think, lots of times.—Taylor*

*The working conditions are long hours. If it's nice and the sun is shining, a sunshiny day, it's a walk in the park. But if it's a real ugly day it's not a walk in the park... But the working conditions are very hard, very long and the more fish you pick your hands become sore and your fingertips become numb.—Chris*

#### 3.5.2 Coping mechanisms

Working in ICE environments can be physically challenging and, of course, fishing in bad weather is more difficult and more dangerous than fishing in good weather. Hence, foul weather is always more physically and mentally taxing than good weather. The following accounts underscore the repeating themes of minimizing and reappraisal to cope with the effects of the physical environment on fisherpoets:

*...And I mean the bad weather can beat us up. But at the same time, we're usually smiling by the end of it because you feel like you accomplished something. So, you can get through it and still be in one piece. So, there's satisfaction in making it through the storms even though you don't wish for them. But in some ways, there's an aspect of the storm that makes it kind of fun, too.—Brook*

*I hurt, sometimes a little bit...mostly, when picking [fish], I work, work by myself. I try to do it in the same routine, the same way...so it becomes more automatic. Because, I get tired. I have to exercise. I have to stretch. I have to do certain things like that otherwise my shoulder starts hurting on me. But if I do that, I'm usually fine.—Morgan*

Fishermen know there is nothing they can do about the weather, so they tend towards either reappraisal of the situation, such as “...bad weather can beat us up. But at the same time, we're usually smiling by the end...” or minimizing its effects, such as laughing because a crew member quit after a bad storm. At the same time, each one recognizes that fishing in bad weather is more demanding. Of course, if the weather is too terrible, they will stay on anchor or in harbor. However, if it is “fishable” they cannot financially afford not to fish, so they tend to accept it as part of the job and deal with it accordingly.

### 3.6 Environmental—Psychological

#### 3.6.1 Stressors

Although experienced fishermen are typically aware of the hazards of fishing, it can still take a psychological toll. These types of stressors are not uncommon when working in a maritime environment. The following quotes demonstrate a few of the ways the threatening and depleting environment of commercial fishing can take its toll:

*I feel relief after an intense moment because I have survived them all... I mean there are times when it's obviously dangerous, but I don't get scared... I just do something about it. Or try to. Or endure, you know?—Finley*

*It's just, typically exhausted days. I've developed a 1000-yard stare... And I contribute that to the constant sleep schedule and the lack of sleep.—Kelly*

*It's, sometimes, you know, the weather conditions are pretty nice. But, for the most part it's, the weather is awful. And [the] sea is rough so it kind of beats you up... It grinds people down.—Kelly*

[Working conditions] *They're hard physically and mentally. It is really variant on weather and the day and the sleep, it can be pretty brutal... The working conditions...mentally I think is more than is healthy on my mind.—Skyler*

### 3.6.2 Coping mechanisms

In addition to foul weather, the length of the season and the long hours tend to grind a person down. The accumulation of lack of sleep day after day, arduous work that is both physically and mentally draining, foul weather, being cooped up on a small boat with others, all saddled with the financial stress of the season tend to take its toll as the season wears on. The following quotes capture some of the coping mechanisms employed by one skipper to get through the season:

*I'm kind of trying to change my personal narrative... Like weather plays a really good role, smiles, just like inner peace and inner, I think whether or not you are catching a lot of fish, feeling like you are catching a lot of fish is really important... Weather, I already said that but it plays a big role in if it's easy to feel safe. And...its, just makes it...everything is just so much harder when it's rough.—Skyler*

*I try to take time. I try to journal. Um... I kind of try to change the narratives in my head and kind of have goals or focuses for each day. I make a plan of how I'm going to fish each day... And at the end of the season I get to just, I just let it rest for like four months.—Skyler*

Again, as with many of the other stressors reported, these fishermen cannot do anything to change the fact that fishing is psychologically demanding; however, this skipper employs reappraisal as a way to cope with the demands of the occupation. This shows that when a problem-focused coping mechanism is not possible, fisherpoets automatically turn to emotion-focused coping mechanisms.

### 3.7 Uplifts

After having reviewed the stressors and coping mechanisms characteristic for Alaskan fisherfolk, we now turn our attention to the positive elements of the profession. This focus on positive components is important because previous research on uplifts has shown that positive experiences can buffer against stress and help play a role in coping (Kanner et al., 1981). A sense of cohesion, for instance, might provide a mental orientation that enables the fisherpoets to respond to stressful situations as a series of events collectively, or as a structured, manageable, and meaningful or coherent event (Eriksson & Lindström, 2005). By not only focusing on the stressful features associated with working in ICE conditions but also the positive aspects, we demonstrate that what is commonly accepted as stressful can also offer an opportunity for psychological growth (Kjaergaard et al., 2015; Leon, Sandal, & Larsen, 2011; Palinkas & Browner, 1995; Suedfeld, 2001).

#### 3.7.1 Confined space—physical

This next set of quotes shows that the lack of personal space, while being constricted to a small vessel for an entire fishing season, can also appeal to the fisherpoets:

*I really like it, it's really simple... There's just three of us... it's a really small space, it's a one burner cook-stove, we go to the bathroom in a bucket on the back deck...it's kind of like camping. But, for six weeks. And we live really close, really close together.—Skyler*

*What boat life is like? It's a freedom. It's a freedom, you know? A mobile home on the ocean. In fact, when I'm in town on the closures, I live on my boat in the harbor. And I like it. It's simple. You know, everything has been reduced to simplicity...on a small boat.—Morgan*

#### 3.7.2 Confined space—psychological

Although exposure to only the same handful of people day after day, week after week can tend to get monotonous, the following are examples of regarding that same situation from a more positive point of view:

*I really enjoyed it as a time to really get to know people and to really get silly.—Skyler*

*You might have a conversation...we would resume it four hours later...without even any prompting whatsoever. He would answer your question or ask you, if that's the case, what about that? Four hours later you just picked up right where you were at the time. It's funny that way.—Taylor*

*Some of my best friends are people that I only see those for that limited part of the year. Working together, you know what? It knits people together in ways that having fun together doesn't really knit them.—Taylor*

Indeed, one of the advantages fishermen found working in remote areas is the sense of community and the comradery since fishing lends itself to such experiences that can only truly be understood by those who experience it. This fellowship compiled with the solidarity felt by working together towards the common goal of catching fish and providing food can create strong bonds amongst fisherfolk.

#### 3.7.3 Isolation—physical

The effects of prolonged isolation in ICE environments is a common experience when working in remote locations, though these locations often come with beautiful scenery that is not commonly found in other places. The fishing grounds of Alaska are no exception with pristine waters, glaciers, mountains, and marine life. These uplifting themes are present in the following quotes in addition to enjoying

alone time and appreciating the natural beauty seen fishing in Alaska:

*We had whales playing around us and...we are catching fish, we were deck loading the boat.—Kim*

*So, it goes from the mellowest of the mellow at low water...say September low water, in the middle of the night and with the, you can see, the bright, the brightness of the aurora borealis is so good, you can actually pick you fish with the light of the borealis.—Piper (28-foot/8.5 m boat)*

*...The feelings that you get on the fishing ground, they are so incredible. It's a rush that you have to be there in order for you to be able to really understand, you have to be there with your eyes, your ears, you smell, your touch. You've got to be there present to be able to witness what it's really like to be a fisherman. You can see it on TV, read it in the newspaper where there are stories about... Unless you're there and all five senses then, then you get the full sense of it.—Chris*

*...The fishing, the getting up before daylight, watching daybreak and watching the sun go down and watching it get dark in my skiff, the last set at night, maybe fading to the dark, before I call him [skiff operator] in, I just love that. I just love that.—Kim*

*When you have a beautiful sunrise and the ocean is glassy calm and it looks like a silver sheet...and the fish are coming, and you're loading the boat up...yeah. And even if you don't load the boat up, I've had some good days where it was pretty scratchy. I used to fish by myself off shore salmon trolling and tuna fishing, all by myself on the boat. And at night the perfect day is where I had a good, not too rough, pretty calm day, caught some fish, that evening I got the boat all cleaned up, washed up and the fish are all iced down, turn off all the lights, turned off the engine and get the last cup of coffee, I go out on deck and listen to the creek of the boat as she rolls in a gentle swell and watch the stars. That's as close to heaven as I'm ever going to need to get.—Kim*

### 3.7.4 Isolation—psychological

Social isolation can start to take its toll mentally when fishing. Separation from others can occur when there is a lack of satisfying social contact (Swift, 2015) and can lead to feelings of loneliness, boredom, anger, and/or sadness. The following quotes, however, demonstrate that there can be a silver lining, if one chooses to look for it, such as enjoying the simplicity of living on the sea:

*I'm a loner. I, I don't look for another boat. I don't have any radio partners. I've always fished...totally on my own.—Piper*

*Well, I always say fishing is a lot like real-life. Only, only it's simpler in a way because you don't have... There're so many superfluous things that are not going on so actually you get to think about...the situation you're in a lot more deeply than normal because you don't have that...extraneous influence of radio and television and email.—Finley*

*You kind of go through withdrawals after the season because every thought you had, every question, every joke, you know, you have so many inside jokes by the end of the season and then you turn and their like, not there. They're like living in another town or like on another street or even another room, which really isn't an option on the boat... But yeah, it's really an intense friendship and relationships are built on the boat.—Skyler*

*It's enjoyable. I have my boat.—Kim*

*God there's no, no finer quality time than being alone on the ocean. It's just, it's just, for me, that's how, it's a meditation... To be alone on the ocean is, it's real special... A lone fisherman, perfect.—Piper*

*I'll be out there all by myself but I love the nature. I love when everyone splits when the seals show up and there is nature around me again. It's kind of sweet that way.—Morgan*

These uplifts reported by fisherpoets show the love and passion they have for their profession, that fishing alone is “a meditation,” “enjoyable,” and “perfect.” The message here is quite plain that these fisherfolk do not mind the isolation and what comes with it, “quality time,” “intense friendships,” and the simplicity of fishing, on the contrary, they prefer it.

### 3.7.5 Environmental—physical

Fishing boats vary in the level of comfort but, overall, they are typically quite simple. Sometimes the lack of creature comforts can have an effect on a person after an extended period of time. Yet, there can be splendor in the simplicity, freedom, and the natural beauty of the landscape witnessed while fishing in Alaska.

*Well the boats have gotten a lot better, uh... On, on the [boat name], we got hot and cold running water and a, and a microwave, all the amenities, pretty much... When I bought my first boat. There wasn't anything! We used a deck bucket... It was primitive. But, it was great!... It was the freedom that's there, and we would get on the boat and we would take off. Maybe not know quite where we were going to go even. We were going in search of fish. And wherever we found the fish is where we ended up... That kind of lifestyle, that semi-nomadic lifestyle I've always been really, really hooked on it.—Kim*



### 3.7.6 Environmental—psychological

Despite the long hours and demanding work, fisherpoets expressed a great deal of sheer joy working on the sea. The following quotes encompass the pleasure and a happiness fisherpoets tend to treasure:

*It is a meditation as much as it is watching the ocean. It's more complete than that. It's a special time for me. It's like going to church for people.—Piper*

*You know, it's freedom. I can lift my finger and say okay; which way am I going?—Morgan*

*...It's just what gives me the most...joy in work... I made a vow. That I would never work for a living. So, I became a fisherman.—Piper*

The above quotes collectively suggest that, although there are risks, dangers, and stressful demands of fishing, there are clearly rewards too, such as comradery, the pristine nature and marine life, and most of all freedom which clearly provides the fisherpoets with joy and spirituality.

## 4 General Discussion

The aim of this paper is to provide an overview of the stressors, coping mechanisms, and the uplifts associated with commercial salmon fishing in Alaska. To the best of our knowledge, this is the first study that encompasses both the difficulties and the positive aspects of working in Alaska's commercial salmon industry from a psychological perspective. Using IPA to analyze semi-structured interviews, we found that while commercial fishing in Alaska is a difficult and demanding profession, these fisherpoets still return season after season. We divided the fishermen's experiences into the stressors they encountered, the coping mechanisms that they used to endure such challenges, and also the uplifts they reported encountering. Whereas physical and psychological stressors such as confinement, isolation, and environment clearly have a negative impact on fishermen's wellbeing, the use of coping mechanisms and the experienced uplifts undoubtedly have a positive impact. Centering on how fishermen tend to perceive and respond to the ICE environment in which they work contributes to a growing body of knowledge that links human performance in extreme environments with resilience to stress.

Resilience, according to Carver (1998), is the "homeostatic return to a prior condition" (p. 247). The central idea here is that when one successfully copes with a stressor, they benefit from that experience and can apply that gain to new experiences, leading to more effective functioning in stressful situations (Carver, 1998). This notion is also line with Frederickson's (2001) broaden-and-build theory which states that positive emotions expand one's cognizance and promote psychological resilience. Resilience can be refined by fostering social support, finding meaning in adversity, and using humor and/or meditation (Barrett &

Martin, 2014). These suggestions may not be that difficult to cultivate, considering that fishermen reported that they enjoy the comradery found while fishing, like providing sustainable food, employ running jokes throughout the fishing season, and being on the water is a form of meditation for some of them. Resiliency comes naturally for these fisherpoets. Just as seasons of physical labor have toned their muscles, the psychological labor of stressors has toned their psychological muscles as well.

## 5 Practical Implications

The insights we obtained give a realistic description of the profession and suggestions as to how fisherfolk can cope with the difficulties of their job in a sustainable way. This information can be useful when dealing with some of the industry's issues such as the social isolation, depression, and suicide rates among seafarers (King et al., 2019; Seafarers' Trust, 2017). Providing an accurate account of some of the trials and tribulations of the fishing profession, and specific mechanisms used to surmount them can be beneficial, and therefore we include some practical implications that may help fishermen cope with their stressful environment.

One suggestion is to bring awareness to current coping strategies and to facilitate replacing dysfunctional ones. For example, one might try to minimize the use of rumination and catastrophizing, which are the least effective coping strategies and tend to sour morale by ways of emotional contagion (Wagstaff & Weston, 2014). What can instead be taught to fishermen is that the use of approach coping strategies (Folkman & Lazarus, 1988; Lazarus, 1991) is typically more effective than avoidance coping strategies (denial, minimizing, escapism) (Palinkas & Browner, 1995) in certain situations. Equipping fisherfolk with a wide range of coping strategies might also be beneficial as research has shown that people who possess coping flexibility were better able to adapt to stressful situations (Galatzer-Levy, Burton, & Bonanno, 2012). Bringing fisherfolk's awareness to sustainable coping mechanisms by giving examples of how to identify stressors and how to match coping mechanisms could prove fruitful. Another strategy already mentioned is to cultivate social support on board, which has been found to moderate psychological stressors at sea (Golden et al., 2018; McVeigh et al., 2017). Since fishermen are isolated from their land-based social support of family and friends, their family and friends may not be able to relate to the conditions at sea that fishermen are experiencing, much less provide necessary social support (Palinkas & Browner, 1995). Therefore, finding and fostering social capital, or connection to their crew members (King et al., 2019), is one tangible step towards coping with the stresses of seafaring as decreased social support is linked to decreases in approach coping and increases in avoidance coping (King et al., 2019; Palinkas & Browner, 1995). Yet another

method that can be taught to fishermen or others working in ICE environments is job crafting. Job crafting pertains to small aspects of work that are redesigned by the employee him/herself to improve the fit of the job with one's own preferences and needs. Job crafting has been found to increase work engagement, job satisfaction, and employee wellbeing (Tims, Bakker, & Derks, 2013) and a method already employed by these fisherpoets. Modifying small aspects of their job, for instance, when fisherpoets go to shore to increase socializing or when they use nap times to unplug for a few minutes, this is job crafting and can increase resources and allow fishermen to optimize their own wellbeing when possible.

## 6 Limitations

Contributions notwithstanding, some limitations of this paper need to be considered. It is recognized that this sample represent a subset of fishermen, ultimately those who reflect deeply upon their fishing experiences by ways of writing prose, poetry, and/or songs about making a living on the sea. Reflecting allows for interpretation of one's story, especially stories that were dismissed as unimportant, taken for granted, or even suppressed (Hovey, Khayat, & Feig, 2018). Furthermore, writing can be a cathartic process which grants access to expressing and exploring experiences at one's own pace in a safe environment, especially if the experience was negative. It allows time for the processing of events and is linked to wellbeing (Phillips & Rolfe, 2016). Writing also acts as a conduit for communicating events at sea, allowing fisherpoets to connect to others who otherwise may not be able to comprehend fishermen's experiences or reactions to their experiences on the water. Fishermen who are not fisherpoets may or may not be as proficient at processing, reflecting upon, or articulating their experiences at sea. Therefore, future research might want to recruit a more diverse sample of fishermen. Another limitation is that we only included skippers in our study, as opposed to crew. Being a skipper allows for more autonomy because skippers are, for example, not subject to menial tasks ordered by the skipper when there is down time, such as polishing the teak interior or degreasing the engines (Stuster, 2010). This is an important difference as previous research on Mars simulation missions has shown that high autonomy positively impacts crews' mood and self-direction (Kansas et al., 2011). A sense of control over the characteristics of work is necessary for ensuring high levels of quality of life and subjective wellbeing (Johnson et al., 1998). Another potentially important difference is that skippers have different responsibilities from crew, which could result in a distinct attitude towards fishing in general. Skippers are responsible for not only their own lives, but that of their crew, as well as thousands of dollars or, more likely, hundreds of thousands of dollars of capital (boat, gear, and fishing permits) (Johnson et al., 1998). As it is not financially feasible to

buy into fishing for only a short time due to the high costs, skippers invest into the industry for the long haul. Because of these reasons, future research might want to include both crew and skippers.

Despite the fact that the strategies discussed in the article are from the perspective of a unique set of fishermen—fisherpoets who fish for salmon in Alaska—the information presented regarding uplifts, stressors, and coping mechanisms should benefit other individuals working in extreme environments, particularly commercial fishing of any variety. Overall, a better understanding of the experiences and challenges that fisherfolk face can improve the resources provided for them.

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