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RESEARCH

Emotions as a (dis)entangling factor in co-creating gendered decisions and practices among small-scale fisher couples in Ghana: towards new theoretical insights

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Abstract
Women experience the brunt of inequality in fishery tasks and decision-making despite their crucial contributions to the industry. This paper examines the micro-processes of gendered fishery decisions and practices based on interviews with 20 female and 18 male fisherfolk in coastal Ghana. The paper draws on a new materialist framing inspired by Deleuzian assemblage theory, which delineates the different tangible and intangible factors that work together (i.e., the assemblage) to shape attitudes, behaviours, and practices among a group of people. Dwelling on this theory, this paper highlights the role of women's embodied feelings (as physically and emotionally expressed through fear, wobbly voice, and love) as they entangle with discourses of their emotionality and other non-human factors to co-create gendered fishery decisions and practices. The paper: (1) highlights the importance of moving beyond economic and bargaining models towards non-rational and emotional factors in explaining the complexities of couples' decision-making and practices, (2) moves theoretically from the traditional understanding of emotions as cognitive or socially determined towards what emotions do within relations of socio-material, spatial and discursive contexts and how such assemblages could be untangled to address gender inequality in couple's fishery decision-making and practices.

Keywords Emotions · New materialisms · Assemblage theory · Gendered fishery practices · Ghana

Introduction

According to the Food and Agriculture Organization (FAO), women constitute only 14% of the fisheries workforce involved in harvesting. However, women comprise about 50% of the fishery labour force when pre- and post-harvest fishery tasks are included (FAO 2020). At the household level, studies consistently show that notwithstanding women's increased participation in the fisheries, gender inequalities in fishery decision-making and practices persist, and housework and childcare duties remain key roles reserved for women, especially in most developing economies (Adjei 2021; Salguero-Velázquez et al. 2022). Scholars have explored explanations of couples' decision-making and practices mainly using bargaining models, gender norms and discourses (Blood and Wolfe 1960; Butler 1990 1993). These scholars have broadly examined the economic and social contexts that influence the strategies, negotiations, and compromises couples adopt when making household decisions (Levy et al. 2008). Though emotional complications such as anxiety, love, and fear have always been central in couples' decision-making and practices (Holford 2019), there is a dearth of research on the role of emotions in gendering fishery decisions and practices.

Extant research has explored the role of emotions in human behaviour and practices in general (Hochschild 1983 in Fox 2015; Jagger 2008). For instance, in early Western philosophy, emotion was considered secondary to reason – the indispensable faculty for acquiring knowledge (Jagger 2008). Feminists have long questioned the feminisation of emotions and highlighted how emotions, expressed through

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various social cues such as language, bodily reactions and schemes of actions, could serve as tools of control to justify gendered roles and constrain individuals to fulfil their gender identities (Hochschild 1983 in Fox 2015; Jagger 2008). Despite the general recognition of the important role of emotions in social outcomes, scholars within the affect school and, more broadly, the new materialist framing have called for a shift in focus on what constitutes emotions to understand better the potential and actual roles that emotions play within assemblages (Boler 2015; Boler and Davis 2018; Fox 2015). As Fox (2015 p. 301) indicates, 'while many aspects of social life possess an emotional component, sociology must explicitly explore the part emotions play in producing the social world and human history'. In this paper, we draw on the Deleuzian concept of assemblage to establish a new materialist framework to analyse emotions in heterosexual couples' fisheries decision-making and practices in Ghana. There are different streams within new materialist studies (See Adjei 2021), but the framework generally argues for a shift in focus from human agency to 'flows of affect' or capacities of different forces of relations including materialities (objects, bodies, emotions, etc.), spaces, and discourses (Fox 2015, p. 4).

Scholars, including Olstead (2011), have explored the intersection between gender, space, and fear by pointing out that through fear or guilt, women are denied the use of some public spaces and activities, such as mountain climbing, which is perceived as too risky. In Ghana, a study by Wrigley-Asante et al. (2019) on the gendered dynamics of safety and security across different spaces and times found that compared to men, women were more likely to feel unsafe when walking alone in their neighbourhoods and at public toilet facilities at night. The findings highlight the popular discourse that women are likelier to feel vulnerable than men due to their comparatively limited capacity to defend themselves physically (Jackson 2009 in Wrigley-Asante et al. 2019). Similar accounts of gender, space and emotionality have been found in studies within policing (Chan and Ho 2013) and parental care (Doucet 2013; Gaunt 2006).

The studies above show the importance of emotions in different social contexts and conceptualise emotions as the outcomes of specific life contexts. However, the actual roles that emotions play as they interact with non-human and other social contexts have not been explicitly examined. In the fisheries sector, despite global acknowledgement that fishery practices are highly gendered (Doss 2013; Harper et al. 2013; Kleiber et al. 2015), there is a dearth of research on the role of emotions in co-creating gendered fishery decisions and practices. Understanding the role of emotions in gendered decision-making and practices is crucial, especially in developing countries where women account for more than half of the fishery labour force (Weeratunge et al. 2010; Doss 2013). Extended knowledge of this gendered decision-making in the fishery industry will offer new insights into how social and romantic relationships and the emotions involved shape decisions and practices on fishing and ways to sustain the industry through programmes that address gender inequalities. Ghana is traditionally a patriarchal society (Amoah and Phillips 2020). However, historical accounts of fishing among the Fanti ethnic group in Ghana shows that women have traditionally participated in the fishing industry with their men since the pre-colonial period (Walker 2002; Overå 1998). Recruitment into the small-scale fishery is mainly based on family labour, but roles are highly gendered; men are generally responsible for fishing while women oversee processing and trading activities (Overå 2003; Britwum 2009). Many women popularly known as 'fish mammies' have increased their presence in the male domain, owning important fishery equipment such as canoes and outboard motors, and pre-financing fishing trips (Overå 2003, p. 51). It is estimated that about 40% of canoe owners in Ghana's small-scale fishery are women (Akyeampon et al. 2013).

Notwithstanding, a growing body of literature suggests that women have limited voices in fishery decision-making processes at the household, community, and national levels (Adjei 2023; Torell et al. 2016; Harper et al. 2013; Kleiber et al. 2015). Drawing from a new materialist framework, this paper examines the role of emotions as they entangle with the economic, material (human/non-human), discursive and spatial (e.g., the different locations where tasks are undertaken) forces to co-create gendered fishery decision-making and practices (Adjei 2023; Fox 2015). Such an approach provides an expanded account of emotions by shifting the attention from what emotions are (whether cognitive or socially determined) to what emotions do within assemblages in the different contexts of couple's fishery decision-making and practices (Ahmed 2004; Boler and Davis 2018).

Understanding household decision-making

Household decision-making was initially explained using the unitary framework, which considers the household a single production and consumption unit whose members have preferences that could easily be aggregated (Becker 1985). As such, the distribution of household resources would not matter in couples' decision-making arrangements (Becker 1985; Bernard and Bernard 2012). However, the family is a place of conflict and cooperation, where individual preferences and choices may differ, and individual couple's household contributions are crucial in their decision-making power (Blood and Wolfe 1960). Collective or bargaining models (categorised into cooperative and non-cooperative) show that household members reconcile or bargain their preferences (Doss 2013; Quisumbing 2003). Cooperative models suggest that individuals form a household when it is more

beneficial than remaining alone. With non-cooperative bargaining, household members are assumed to maximise their utility, taking the other individuals' behaviour as given (Doss 2013; Bernard and Bernard 2012). Altogether, these models provide important explanations for understanding the nuances in a couple's behavioural patterns and household decision-making preferences.

Despite their crucial contributions, the unitary and bargaining models are predominantly economic, paying limited attention to the unpredictable human behaviours in social relationships such as marriage. For instance, the economic models do not adequately address existing patriarchal power structures in determining women's access to resources such as land and wages (Deere 1995). In addition, issues such as love and desire for a compassionate marriage are important in marriage, but are often neglected issues in the household bargaining models (Doss 2013).

Emotionality, and gendered decision-making and practices

Scholars have analysed emotions traditionally from two main perspectives. On the one hand, a cognitivist perspective where emotion is considered as an individual's judgment, self-expression, or a specific way by which an individual understands the world (Sartre 1962 in Ahmed 2004). On the other hand, constructionists view emotions as bodily expressions or reactions to social cues depending on the socio-cultural contexts and socialisation, independent of our thoughts or cognition (Ahmed 2004; Fox 2015). In her study of emotional labour, Hochschild (2010) emphasised the sociality of emotions through her concept of 'feeling rules' to describe the prescribed emotional behaviours that situate people in different social contexts through norms determined according to gender, age, occupation, and other social factors. For instance, she shows how a flight attendant's emotional labour, including her smile and tone of voice, indexes social norms about women (Hochschild 2010).

Beyond these anthropocentric ontologies and dualistic frameworks of emotions, there has been increased attention to the active roles of emotions within the popular school of thought known as the 'affective turn' (see Ahmed 2004; Tamboukou 2003; Blackman and Venn 2010). However, Boler and Davis (2018) have questioned the perceived liberatory potential of the affective turn by arguing that such accounts of affect 'reinscribes the binaries between emotion and affect' (Boler and Davis 2018, p. 80). They call for a conceptualisation of emotion and affect, which 'accounts for their interconnections, interstices and metonymies of feeling, affect, emotion, sensation, and cognition, while foregrounding their sociality' (Boler and Davis 2018, p. 80). This establishes a materialist sociology of affect that acknowledges emotions as a part of a more generalised affective assemblage that produces bodies and fluid subjectivities in different social contexts (Fox 2015). An assemblage consists of a 'multiplicity of heterogeneous orders of existence' traditionally considered separate' (Feely 2014, p. 47), which come together to function as a whole or form a particular understanding or activity (Feely 2014; Adjei 2021). Within this conceptualisation of emotions, scholars pay particular attention to what emotions do within the assemblage of human and non-human bodies, as well as social and physical environments (Fox 2015; Youdell and Armstrong 2011). Such bodies, things, social institutions, ideas, or emotions gain their capacity or potency through their entanglements with other equally ephemeral forces (Barad 2007; Fox and Alldred 2018). For instance, in his conception of love assemblage, Fox (2015) highlights the capacities of the 'lovers' themselves (and perhaps their family and friends); non-human elements (e.g., places and spaces where lovers meet, and a ring) as well as discursive forces such as past relationship experiences, social norms and codes of love, and cultural values of masculinity, femininity, and sexuality. 'How these forces affect each other critically determines if what emerges is a 'love'- assemblage, as opposed to a 'hate-' assemblage' (Fox 2015, p. 309). Attention to materialities (such as objects and bodies) does not neglect the roles of social forces such as norms, customs, values, and institutions. Instead, it focuses on how the entangled relations of these forces co-create fluid events (Fox and Alldred 2018).

Following these accounts, Doucet (2013) highlights the role of emotions in understanding the caregiving relations between fathers and their daughters. In her study on parental caregiving practices, she found that women's embodied connections (e.g., the breast) gave them stronger feelings of attachment to their children even under circumstances where their husbands were the primary caregivers of the children. Highlighting the body-objects-emotionality assemblage, Doucet found that daughters turned to their mothers for help with underwear shopping, whilst caregiving fathers showed discomfort and often turned to female relatives to get their daughters such items in the absence of their wives. This reconceptualises caregiving by recognising that care involves fluctuating entanglements of the body (the mother, father, and child), breast, mind, and emotions across times (Doucet 2013). In examining the decision to purchase a house for couples, Levy et al. (2008) argue that while purchasing family property constitutes an economic event, families are swayed by internal compromises and emotions. Regarding agricultural practices, Brandth (2006) shows that women who operated tractors had to negotiate and/or resist masculine social expectations – to be as tough as men and not show emotions such as fear. The study highlights the entanglement of emotions with non-human objects such as tractors, human bodies, and gender norms to co-create gendered agricultural practices. In this paper, we show what

emotions do within relations of social, material, spatial and discursive contexts and how such entanglements could be unsettled to address gender inequality in decision-making and practices in Ghana's small-scale fisheries. Specifically, we show how emotions such as fear, love and respect gain their potency or capacities in heterosexual couples' fishery decision-making and practices through their relations with specific material-discursive-spatio-temporal assemblages such as the human bodies, the spaces within which fishery tasks are performed and norms of appropriate gender roles in Ghana's small-scale fisheries. In these analyses, we highlight the capacities of the different forces at work—what they can or cannot do, with specific focus on the role of emotions in these assemblages.

Study context and methods

This paper is part of a larger ethnographic study conducted by the first author on fisher couples' decision-making and practices in coastal fishing communities in Ghana, between July 2019 and January 2020. The three communities (Axim, Sekondi and Dixcove) were selected for their important contributions to the small-scale fishery in Ghana. Axim is the capital of the Nzema East Municipality and one of the busiest among Ghana's 186 coastal fishing communities, with 13 fish-landing beaches (Adjei and Overå 2019). Sekondi is the capital of the Western region of Ghana and an important fishing city. Most residents along its coastal suburbs engage in fishing, fish processing and trading. Sekondi was chosen for having the biggest modern fishing harbour in the region (Albert Bosomtwe Sam Harbour) and being the busiest fishing town in the region (Adjei and Chan 2024). The third study area, Dixcove, is a rural area and one of the oldest fishing communities in Ghana. Fishing is the main livelihood of its inhabitants and the centre of fish trade for the adjoining communities (Akyeampon et al. 2013). These different communities provide an important mix of participants from rural and urban contexts and are representative of coastal Ghanaian communities where fishing is a central economic activity.

Data was purposively drawn from 38 in-depth interviews among fisher couples, participant observations, photo-elicitation and vignettes. The lack of official data on the number of fisherfolk in Ghana's small-scale fisheries rules out probability sampling techniques (Adjei and Overå 2019). Purposive sampling was used based on its capacity to allow researchers to access participants who had prior experience relating to the phenomenon under study (Rice 2010). Based on the research aim, couples known to be knowledgeable in fishery activities within the fishing communities were purposively selected for their experience in small-scale fishery-related issues. The strong social connectivity among fisherfolk in Ghana's small-scale fisheries makes this an effective sampling strategy. As part of the participant observation, the first author helped fisherfolk in various activities, including holding the fishing net as they mend helping to pull the net and canoe, among others. However, the first author declined invitations to fish with the fishermen, as he deemed it too risky given his inability to swim and lack of fishing experience. Photographs were taken during the participant observation. These served as an ice breaker for the actual interviews and as references during the interviews. Photo elicitation enhanced participant's engagement and offered flexibility for the participants to select and discuss issues of importance to them in relation to the research topic (Jorgenson and Sullivan 2010). In addition, studies show that 'images evoke deeper elements of human consciousness' (Harper 2002, p. 13). Combining photographs with texts in the interview triggered deeper conversations to explore participant's experiences, memories, and reflections on the various decisions in which they had participated in the past with regards to their fishery activities (Harper 2002; Meo 2010). For instance, it was during one of these photo conversations with a participant (fisherman) that he was reminded to also share a video he had recorded with some women during a sea expedition, which proved a very crucial data source as will be discussed later.

In some instances, there were difficulties in directly observing how participants decided on who did what, as their activities were largely automatic. Couples were reluctant to share their actual decision-making arrangements, especially in instances of deviation from what is considered socially appropriate. Hypothetical scenarios regarding the selected couple's decision-making arrangements were included in the interview guide (see Finch 1987; Hill 1997). Using vignettes fostered less personal and less threatening ways of exploring sensitive topics that couples found difficult or embarrassing to share (Barter and Renold 2017).

The study focused on couples who owned major fishery equipment (such as canoes, fishing nets, and outboard motors) at the time of the interview to provide spatial and materialistic contexts beyond the household. Separate interviews were conducted with 20 female and 18 male fisherfolk, of which seven couples were selected for couple (both husband and wife) interviews. The interviews did not directly ask questions about emotions. However, since respondents often referenced emotional matters in the conversation, there was a lot of pertinent data on this topic that merits re-reading emotionality-material-discursive entanglements. This demonstrated that emotion is not something that is simply added on, but it constitutes an integral part of the analysis. The interview data from audio-recorded in-depth interviews were transcribed and coded for analysis.

Ethical clearance was granted by the Research and Ethics Committee, [anonymised University], and Committee

of Human Research Publication and Ethics at School of Medical Sciences, [anonymised University], (Ref: CHRPE/AP/554/19). In the next section, we share interview data and field notes extracts describing fisherfolk's (men and women) encounters with different fishery practices and emotional forces such as fear and courage at play as they entangle with non-human objects and spaces such as canoes and the ocean space to co-create gendered fishery decisions and practices. We also show instances where such gendered outcomes could be challenged through encounters in different contexts.

Findings and discussion

As discussed in the earlier sections, in sociological research, emotion is either an individual's judgment and self-expression or an embodied response to social signals mediated by cognitive processes that provide meaning (Hochschild 1983 in Fox 2015). Moving beyond these dualistic frameworks, we show how emotions such as fear, courage, love, and respect were a constitutive part of the generalised affective relations of the material (both human and non-human), discursive and spatio-temporal forces that co-produce gendered fishery decisions and practices (Ahmed 2004; Boler and Davis 2018).

Emotions-space-objects entanglements in gendered fishery tasks

In this section, we illustrate how emotions such as fear and courage were evoked in different contexts to explain the gendering of fishery tasks, which creates gendered fishery practices among fisher couples within the small-scale fishery in Ghana. We begin by giving a brief account of a video shared by Agya-Kojo (a chief fisherman in Axim), which captured an encounter he had with three women (1 journalist and two community-based NGO officials) during their short expedition at sea as the women were interested in knowing how the entire fishery value-chain operates. As he recounted:

> *So, after a community engagement, they [the three women] asked that we take them on the sea to give them a ride to that island [he pointed – was few metres away]. So, we took a big canoe and just some few miles off the shore, just before the island, come and see the women! They started shaking. They wished they could fly back. So, we told them when we say they [women] cannot do it [fish], they should not challenge us. I guess they realised that our work was difficult. However, if it was a boat, I am sure they would be able to go without fear. It is much safer; they may be able to work on it. Yet, I have not seen any woman fishing on a boat before because the only thing we have here are our small, small canoes (Agya-Kojo, Chief fisherman, Axim).*

From the video excerpts, it is observed that while the three women wore life jackets, Agya-Kojo and his crew members were without life jackets, yet two of the women were afraid. Below is an excerpt from the video on what transpired during their expedition.

The sea expedition

Woman 1: Why is the canoe swinging and tossing like that?
Agya-Kojo: That is why we are here. There is no cause for alarm.
Woman 1: There is no cause for alarm?
Agya-Kojo: Yes. Where we have gotten, we are now entering the waters [now getting.
deeper] so by all means there will be some little, little waves. So, there is no.
cause for alarm.
Woman 2: Yoo [okay!] we have heard you. So, ouch! So even if it [the canoe] goes.
up and down like that we should not be afraid?
Agya-Kojo: Yes. That is how the sea is. This differentiates the marine waters from the.
riverine system.
Woman 1: Yoo yaatse [okay we've heard you – in a wobbling tone]. So, we are safe.
right?
Agya-Kojo: You are hundred percent safe.
Woman 2: Okay we have heard you.
Woman 1: Hmm. It is not easy o. We are, we are, we are safe, we have been assured,
we have been assured that we are safe, but we are sitting on the edges of our seats.
We are, we are just praying.
Crew member: There is no need to fear.
Woman 2: There is no need to fear, there is no need to fear!
Woman 3: You look scared [said to the other two women, as she looked calmer].
Woman 2: There is no need to fear, there is no need to fear, but it looks like the waves.
is too high today, right?
Agya-Kojo: But you have not gone fishing before so how did you know that? [they all.
laughed].

From the above excerpts, '*fear*' seems to be an important emotional term. It appears in almost every aspect of the women's encounter as they explored the sea. Interviews with some fishermen and women also indicated that such fears

emerge because the motions of the boat physically disorient them. One fisherman revealed that he mostly 'developed nausea anytime [he] goes fishing'. This discomfort generates a kind of fearful response related more to physiological reactions to discomfort than simple fear. Another fisherman indicated that he always gets seasick. However, once the bumper season starts, he sets the sickness aside and gets used to those physical sensations over time: '*this is my only source of income, so I must work no matter what. This is what gives us chop [housekeeping] money. I cannot say that because of my seasickness, I will not go fishing*.' (Atta, 47 years, Dixcove). Whilst fishers still experience the physical sensations, they learn to suppress the emotions attached to sea sickness due to the financial benefits they receive.

From the sea expedition example, one may argue that the sea and its waves made the women (and men) afraid and that the bodily symptoms of fear (the wobbling tone, sitting on the edge of the canoe, and sweating) were automatic (Massumi 1995 in Boler and Davis 2018). Cognitivists on the other hand, may view fear as an instinctual or personal feeling from the women that enhanced their successful adaptation to the events on the sea – a response to a social signal, including the tossing of the boat. One may ask why the women were afraid despite wearing life jackets. Although the expedition may be the women's first encounter, they were still afraid. Cultural histories and memories may shape the image of the sea and its waves as synonymous with fear (Brandth 2006). The women may have already had an impression of the risks associated with an encounter with the sea waves (drowning, and death), an impression which was felt in their voices through the series of questions in a wobbling tone. The first author's decision not to join a similar expedition when he was offered the chance (as described in the methodology section) could have also been shaped by similar images and memories. The above also highlights the important role of space (that is, the ocean space/sea) in co-creating different forms of emotional dispositions. The sea space and its waves impacted how the women (humans) reacted to different situations on the boat—we may have an impression of the sea and waves, but the sea also makes an impression and leaves an impression (Ahmed 2004). Whilst the agency of space (sea space) can be easily discerned, it could be argued that it is not the sea and its waves that were fearsome on their own. They were fearsome to some people (in this case, the two women). The capacity of the sea space to cause a canoe (fishing boat) to capsize resulted in fear, as was made apparent the moment the women entered the sea space. Such emotional dispositions exhibited by the women may not have occurred on the land (landing beach), which would not have the same capacity to swing and toss canoes.

The agency of '*fear'* within the sea expedition assemblage is equally apparent – it caused some women to shout, sit on the edge of their seats and ask a series of questions. However, fear only emerged as a result of the human-canoe-ocean space assemblage. Hence, to describe fear as solely 'personal' fails to consider its relational uptake (see Boler and Davis 2018). The women's visceral reactions (the wobbling tone), its location 'in cells and the gut' (MacLure 2011, p. 999), and the consequent series of questions for assurance of their safety, among others, indicate that some bodies, locations and objects are constitutive forces of normatively gendered subjectivities of emotions (Ringrose and Rawlings 2015). However, fear was neither in the women nor even the sea and its waves, but a matter of women, canoe and sea waves coming into contact, shaped by memories of past experiences, among other forces which allowed the sea and its waves to be apprehended as fearsome. As argued by Fox (2015, p. 310), 'the significance of an emotion is not as a bodily response to an event, but as a capacity to affect'. Thus, affect is neither fully realised in the social form or language (such as calling someone emotional) nor human consciousness or judgement (feeling) but emerges through the relations of objects, bodies, and spaces of which emotions such as fear are crucial, but only a part of the forces in making up relations such as the sea expedition assemblage (Massumi, 1995 in Boler 2015, p. 1493; Taylor and Ivinson 2013). The first author's fear and a resultant decision not to undertake such a similar expedition, coupled with the courage expressed by the third woman, indicate that fear does not emerge only from women but also men (like the first author) through the material-discursive co-implications as earlier discussed.

This is interesting because in most societies, emotions such as fear are often ascribed to women, while courage is associated with men (Wrigley-Asante et al. 2019; Fox 2015; Ahmed 2004). We see that equating fear to women and courage to men, as some essentialists may argue, is limiting. Rather, the workings of the sea and its waves, which can cause bodies to drown when in contact with an inexperienced human body, can generate emotions and the resulting consciousness to decide whether to fish or not. This could prevent such bodies as the women in Ghana's fishery from undertaking a sea expedition or fishing and be conceived as cowards – creating gendered fishery tasks in such contexts. Notwithstanding, it is possible that with constant practice, women and men like the first author may be able to engage in fishing. In Ghana's small-scale fisheries, it is common to find fishermen with their sons on their boats, mending nets, helping to pull canoes and sometimes joining the fishing trip right from a young age. Whilst involving children in such activities may be considered as child labour (see Abdullah et al. 2024), fishermen found this as an important medium of training for their children, who would eventually take over the family fishing business, to acculturate, acclimatise and deal with associated emotions such as fear from tossing boats.

A change in some of the constituting forces (e.g., moving from violent sea waves to calmer waters such as lagoons or rivers to fish) may allow some women as well as men like the first author to undertake sea expeditions or learn to fish, thus overcoming conceptions of fear just like the more experienced fishermen. Whilst the ocean space is considered dangerous for women, rivers, and lagoons may be considered generally safe for women to fish. Calmer waters such as rivers and lagoons have limited capacities to create violent waves, which could make it possible for inexperienced fishers (both women and men like the first author) to be able to undertake fishing. This means that without, for instance, the sea and its waves, the issue of fear may not emerge for women. This finding corroborates with studies in other jurisdictions (e.g., Philippines and Nepal) where fishing is largely undertaken nearshore, in lagoons and riverine waters, and women play active roles in the capture fisheries (Zhao et al. 2013; Harper et al., 2020; Frangoudes et al. 2019). This does not necessarily suggest that all rivers are safe for women (or men) to fish. It may depend on the context and relative capacities of such rivers, the weather conditions and other forces working together to determine whether fishing may be safe or not. The study by Wrigley-Asante et al. (2019) further highlights such context specific capacities, where specific locations in urban Accra considered unsafe for women at night lost their capacity to cause danger during the day. The study equally recognises how culture and socialisation influence stereotypical categorisation of emotions based on gender, where men are considered courageous and women as coward. Whilst it was common for the women to be considered coward, the first author's inability (as a man) to undertake such an expedition was considered feminine – a coward man. Participants constantly asked the first author, '*why do you act like a woman?*' when he was unable to pull the canoes and nets as expected. This collaborates with findings from studies which highlights how continuous socialisation on such stereotypes and social expectations could influence how men and women behave towards each other in the fisheries sector and the larger society (Britwum 2009; Adjei and Arthur 2022; Wrigley-Asante et al. 2019; Chan and Ho 2013). Such cultural norms are ingrained in the fishing communities and serve as powerful discursive tools for controlling subversion of dominant gender discourses and values (Adjei and Chan 2023; Ringrose and Rawlings 2015; Overå 2007).

Excerpts from the interviews with fisherfolk (both men and women) also disclosed such assemblages where emotions such as courage, love, trust, and respect played a constitutive part in different fishery practices and decision-making events. For instance, Agya-Kojo disclosed the reasons why women do not engage in fishing. '*The sea is dangerous; the waves can be very violent (…). Sometimes the kinds of dangerous things we see…[Paused]. The conditions at sea would not be good for women*'. Another male participant who co-owns two canoes with the wife indicated:

> *Man! The sea...the sea...for men we are more courageous than women. There are times that we meet a lot of dangerous things on the sea. Some fishes look very scary and dangerous [Talks about how they bumped into sharks and how scary it was]. The women can go but women are not as courageous as men. Because in situations where men would keep their cool, when women see, they would be shouting...women are not bold for fishing. In Ghana even if we agree that women should go fishing, only a few would do that. My wife for instance, she can go, but most women cannot. Just look at how they shout in cars when something small happens...they would be shouting and can even confuse the driver. That is why we don't normally allow women to sit at the front seat of cars or behind the driver (Issah, 41 years, Axim).*

Yaa, a female fish trader who co-owned canoe with her husband, also shared a similar account on the same question during an interview:

> *Some women have courage and may be able to fish. For me I cannot… even if*
> *they ask me to do that I will not. I do not have the courage to be on that vast sea.*
> *Even at the beach how do you see it [the sea]? Let alone stay on the deep sea,*
> *I cannot* (Yaa, 52 years, Dixcove).

A common explanation for the division of fishery labour given by Agya-Kojo assumes that women cannot go to the sea because the sea waves can be 'violent' and make the sea 'dangerous'. As such, the sea requires *courage or boldness,* a feature that women do not have, an opinion confirmed by Issah and Yaa in the second and third interview excerpts. Thus, both *fear* and *courage* can be experienced as internal states, as argued by cognitivists. However, as argued by the social constructionists, they can also be made apparent through actions such as the wobbling tone, praying, or shouting, sitting on the edge of seats. Some scholars may also consider emotions such as courage or fear as the outcome of the 'confluence of biology (internal states) and culture (external forces)' (Fox 2015, p. 301). For instance, fear may be thought to emerge from a coward (internal state/characteristics) woman's involvement in fishing on the sea, which results in her wobbling tone (an external indicator of fear). However, we consider accounts that see such emotions as primarily a personal characteristic, based on an individual's judgement or as something socially produced to be too anthropocentric if we do not explicitly examine the part that emotions and the other non-human objects involved play in such social emergencies. Focusing on assemblages,

we examine the capacities of the different forces at work, including emotions such as courage and fear, and how they combine with material forces (e.g., male and female bodies, non-human forces such as canoes, the deep and vast sea, and the waves) to co-determine the gendering of fishery tasks as narrated by the informants (Fox 2015; Boler and Davis 2018). From the interview with Issah above, it can be discerned that different components of forces were invoked to show how they combined to co-determine the gendering of fishery tasks or practices.

First, focusing on the non-human material and spatial force of the deep sea and its waves, Issah indicates that the sea was dangerous because it could cause death, which links with cultural discourses of masculinity and femininity where women are considered coward and too weak to swim in case of such accidents compared to men—making women unsuitable as fishers. We also see the part that emotions such as courage and fear (both visceral and physical experiences) play in the in the account of Issah, who used instances where women may exhibit fear by shouting to 'confuse the driver in a car'—translated to the captain of the boat being confused at sea. Understanding such relations would include examining past experiences regarding women shouting in a car to exhibit fear (external force), which is '*plugged*' into the fishery practices assemblage described by Issah (Jackson and Mazzei 2013, p. 261). This point further buttresses the point that without, for instance, the sea and its waves, the issue of fear may not emerge for women.

The above discussions provide instances where certain emotions were used to justify various tasks considered unsuitable for women (e.g., fishing). However, there were other instances where other forms of emotions were related to specific fishery tasks and decisions which were considered suitable for women, especially those relating to fish processing and sale. For instance, in his answer to a fisher couples' financial decision question, 'who keeps the principal money for the fishing business?' Wofa, a 62-year-old Canoe owner indicated:

> '*For most fishermen, our wives are our treasurers. You cannot trust someone like me with money. I have lots of responsibilities, and I may spend such monies. What we do is that we [mostly] sell it [the fish] to our women, then they sell by adding a little to it. Sometimes I take the principal from her, but mostly I may misuse it. I trust my wife, so I normally ask her to keep the money, and as a mother, she can really save.*

Spending such monies could mean a collapse of their fishery business. Within the fishing communities, women were generally considered more trustworthy and prudent fisherfolk who cared for the sustainability of the fishing business. Most women depended on their husbands (or sons) for fish for sale, as it was cheaper than sourcing from the open market, and the payment terms of the principal cost were flexible. As such, being trustworthy in keeping the principal money is an important way to ensure that the business thrives and to ensure guaranteed access to fish for sale. Thus, women were trustworthy not necessarily because it was their natural character but rather because such characters emerged from the need to ensure access to fish to sustain their own fish sale business and to support their children. So, trustworthiness is linked to the bodily experience of motherhood and childcare. Again, we see how hegemonic gender discourses are used to link women's ability to save to motherhood. In this instance, a woman who cannot save the principal money for the fishery business may also be considered a bad mother or wife. In another interview, specific emotions such as patience and aggressiveness were used to justify women's dominance in specific fishery tasks and decisions. For instance, in an interview with Efo, (a fisherman) on why the wife bargained on the fish price at the landing beach, he indicated:

> *My wife is very vigilant and aggressive. She will not allow any women to cheat in the pricing. She sometimes quarrels with them [the women] before they buy the fish. As a man, I cannot do that, they will call me names' (Efo, 42 years, Axim).*

In fact, my observations at all the landing beaches confirmed the above statement by Efo. The landing beaches were generally noisy and had lots of disagreements among fish traders, but such aggressiveness did not lead to a fight. It was rather the male fishermen and young boys who carry fish from landed canoes to the shore, who usually fought at the beach. This also shows that emotions such as aggressiveness do not only reside in men but also in women. However, such emotions may be exhibited differently to achieve different specific outcomes. There were also instances where women (and men) subverted gender norms and expectations of emotions in the fisheries. Respondents indicated that some women (especially the girlfriends of fishermen) occasionally joined their men to fish, though they mostly served as cooks on the canoe. Name-calling was an important discursive tool for controlling women (and men) who subverted established gender norms and expectations of emotions. Women who subverted established gendered expectations (e.g., fishing or joining fishing expedition) were usually called names such as '*Adjoa tiger'* (a woman who behaves like a tiger or show extreme physical strength) or *Banyin-besia* (a woman who behaves like a man). While such name calling gingered some females emotionally to egage more in male dominated fishery tasks (e.g., pulling canoes), such acts were also prohibitive for most women who, for fear of being labelled, desisted from engaging in fishing even if they could. Other forms of subversion involved men who engaged in fish processing and sale – considered a female task. Such men were also

ridiculed and called names such as '*Kojo-besia*' (a man who looks or behaves like a woman).

Love, respect entanglements, and couples' fishery decision-making

In terms of fishery decision-making, similar accounts of material-discursive-spatio-temporal forces of relations were invoked by both male and female informants in the different decision-making events. Next, we pay attention to the affective capacities of the embodied sensations and emotions (e.g., love) in the events of household fishery decision-making. In an interview on their decision-making arrangements, Ekua, a female fish trader who doubled as a co-canoe owner with her husband, she indicated:

> *When it is about time for my husband to go fishing, he seeks my views on how to get the canoe on the sea. But the moment they started fishing, he ignored me about fishing matters. (…). The moment the man's fishing equipment is destroyed, and he needs your [respondent's] help, he would do everything with you, but the moment it is resolved, and the fish comes, he forgets about you...but he is my husband, I love him and need to support him* (Ekua, 54 years, Axim).

First, the above interview excerpt counters the assumption that the household acts as a single production or consumption unit as posited by the unitary household model (Becker 1985). In the Ghanaian fishery context, although couples work together, their roles are complementary – men are more interested in fishing, whilst women are more interested in the processing and trading decisions. This suggests that the economic models seem more important when the husband has the economic power and couples exhibit different decision-making levels, as Ekua indicated in the excerpts above, '*…he [the husband] seeks my views on how to get the canoe on the sea. But the moment they start fishing… he forgets about you'*. Through the income gained, Ekua may be able to influence decisions, especially when the husband's income is reduced (e.g., due to having a faulty canoe or during the lean season), but that does not suggest that she leads in decision-making. The above interview excerpts where Ekua indicates her '*love'* for her husband, causing her not to challenge his decision, show that emotions such as love play a key role in the events of a couple's fishery decision-making. Her love for her husband limited her ability to contest him when he decided alone. However, love here may not have occurred overnight. Following Fox (2015), we could extend the argument to examine how love emerged between Ekua and her husband by exploring a love-assemblage—what may be referred to as a molecular assemblage of love (see DeLanda 2006). Here, a wife's feelings or emotions may be important but constitute only a part of the love assemblage. This may comprise the human bodies (the spouses) and non-human forces (the ring, the bride price/dowry and other relationship memorabilia) as well as discursive forces such as social expectations or norms of appropriate behaviour (e.g., showing love to your husband) and other cultural models of masculinity and femininity. The affective flows between these forces (including emotions) co-determine whether a love-assemblage emerges or is foreclosed into a hate assemblage – meaning women could hate or resist male dominance in household fishery decision-making (See Fox 2015). The gender dominance in different fishery tasks tends to give individuals power within specific domains of fishery decision-making, which was often demonstrated in the form of respect towards the gender-considered authority figure. Such dominance was often seen among men since they are traditionally considered head of the family. Hence, men decided, irrespective of the woman's economic contributions.

Another important emotional component is respect. Women were expected to show respect to their husbands as family heads. As indicated by Adjoa (a female canoe owner):

> *Even if I am the owner, he [the husband] is the one who uses the canoes, and the nets to fish, and when there is fault, he repairs them… claiming single ownership and decision-making will not help. Besides, he is my husband, I need to respect him'.*

There were several instances where participants (both men and women) indicated that husbands ought to lead in key household decision-making as it was a sign of 'respect' to the husband. Whilst feelings of 'respect' may have a social feature as its interpretation is based on what society considers as respectful, considering respect just as in the case of love as exclusively innate qualities of an individual (e.g., women) or as solely a socio-cultural practice is limiting. In the above interviews, we see that emotions such as love and respect played a constitutive part in the assemblage of human bodies (male, female), the non-human objects (the fish, the sea, the canoe), and social expectations of women, in shaping a couple's decision-making. Love served as a key motivation for Ekua to keep supporting her husband despite being sometimes sidelined by the husband in their fishery decision-making. Deleuze and Guattari have highlighted the agentic role of emotions, such as love, as powerful motivators for action as they may 'coerce, discipline, habituate, subjectify or territorialise bodies and the social world' (Deleuze and Guattari, 1988 in Fox 2015, p. 310). In this study, love and respect worked to limit the extent to which Ekua and Adjoa's financial support and ownership of fishing assets, respectively, could lead to their joint participation in household fishery decision-making.

However, other forms of emotions such as patience were invoked to highlight the extent of women's participation in

decision-making, especially domestic decisions. As Araba, indicated in an interview:

> *Women are very patient. That is why sometimes the children communicate more with the mothers than their fathers. So, when it comes to decisions, especially about children such as buying things for the children, women should equally participate because we are mostly closer to the children, we know their needs and can help take decision that will suit the children and the work we do. Sometimes my children fear their father and do not want to talk to them, like the way they talk to me* (Araba, 42, Axim).

The interview excerpt shows how external events (e.g., childcare) are *plugged into* fishery decision-making arrangement and events (Jackson and Mazzei 2013). A woman's ability to patiently accommodate the behaviours of children is translated into their ability to address certain fishery-related family financial decisions. However, as Araba indicates, patience may emerge in an assemblage of certain human bodies such as women (a mother) and a child – this does not mean that all 'women are very patient'. They may be patient in dealing with their children (perhaps due to their biological connections) but not with their customers at the landing beach, as discussed earlier. It is equally possible for men to be patient in different circumstances where women may not. Different forces work together to co-create such emotional dispositions.

Conclusion

Couples' decisions and practices are beset with emotions, making it difficult to predict the direction of their decision-making and practices. However, studies on couples' decision-making and practices have been mainly based on bargaining models, whilst the important role of emotions and non-rational models have received limited attention, especially in developing economies. This paper addresses these gaps by drawing on the Deleuzian assemblage theory to establish a new materialist framework for analysing emotions in heterosexual couples' fisheries decision-making and practices in Ghana. Findings from the study show that contrary to the unitary model (see Becker 1985), though fisher couples work as a production unit with complementary roles, they have different preferences and interests. A woman's ability to generate an income enhances her bargaining power in shared decisions with her husband, especially when the husband has limited income, which confirms the bargaining model's argument.

More importantly, the paper highlights how women's (and men's) embodied feelings (both physical and emotional), such as fear, respect, wobbling voice, and love, played a crucial role in perpetuating gender inequalities in fishery decision-making and tasks. Such emotions influenced the kinds of fishery decisions and tasks women (and men) could undertake and their perceptions about what was right for men and women to do. It also shows how women use emotions such as love to construct valued gender identities – a good wife and a good mother (Butler 1990), and how emotions and gender intersect as a form of social regulation or 'feeling rules' of couple's gendered decision-making and practices (Hochschild 1983; Butler 1990).

A reflection on the role of emotions from a new materialist lens further highlighted its agency beyond its conception as a cognitive property of women or men or a creation of society to control women (Hochschild 2010; Jagger 2008). Our assemblage thinking and analysis revealed that emotions such as love, courage and fear were constitutive forces entangled with other material-discursive-spatial forces such as fishing canoes, ocean space and sea waves, and discourses of masculinity and femininity to limit women's participation in specific tasks. Fear was not a mere characteristic of women, nor courage solely for men; they were ephemeral and could change in different material-discursive contexts of fishery decision-making and practices (e.g., the sea expedition, fishing (deep sea versus nearshore), fish processing and sale, well as the different contexts of fishery decision-making and practices. As the interviews revealed on gendered fishery tasks, during the sea expedition, some women exhibited fear whilst others exhibited courage. Though the fishermen exhibited courage throughout the expedition, we argue that their courage emerged from the extensive fishing experience that the women did not have. Like the women, the first author (a male researcher) refused to go on a similar expedition during fieldwork due to his fear of drowning if the boat capsized. Thus, the entanglement of the ocean space and its waves (material/spatial force), the female/male body (human material body) with different capacities and experiences, as well as discourses of women's fearfulness and the actual feeling or sensation of fear for engaging in fishing and its related activities played important roles in the gendering of fishery decisions and practices. In terms of decision-making, love played a limiting role by serving as a key motivation for Ekua to keep supporting her husband despite being neglected in their decision-making, despite her financial contributions. Culturally, she was expected to support her husband rather than make decisions, and this was seen as a sign of respect, an emotion that she also expressed as feeling for her husband. In other instances, such emotions as trust, prudence, aggressiveness, and patience were invoked to highlight women's dominance in specific fishery decisions and practices. Women were considered better fish traders at the landing beach because they could bargain for higher prices aggressively. The paper also shows that the biological connection between mother and child generates many

emotions, which come under the broad spectrum of "caring," with patience being one of these, as well as anxiety, fear for the child, love, frustration, humour, and anger. Some of these emotions attach to the father as well—no doubt. However, in a lot of settings, fathers are discouraged from expressing these emotions. Fishermen acclimatise their very young sons into boat fishing practices, and many of these emotions are present. However, they are obviously suppressed in the desire to pass fishing on to the next generation. We argue that such emotional dispositions were neither innate nor solely socially constructed. Instead, they emerged from the assemblage of different material-discursive-spatial forces.

What an assemblage thinking brings to bear is that without, for instance, the sea and its waves, the issue of fear may not emerge, which could make women's participation in fishing more prominent, as found in other jurisdictions with calmer riverine and lagoon systems (Frangoudes et al. 2019; Zhao et al. 2013). To address gender inequality in fishery practices thus, requires the need to deal with social discourses and norms which tends to consider women as inherently coward and men as inherently courageous (Hochschild 2010; Lois 2001; Jagger 2008). This corroborates with the study by Olstead (2011) in Canada where women were denied access to public spaces to participate in 'edgework' activities such as mountain-climbing and auto-racing, as such activities were considered too risky for 'coward' women. Not all women are coward nor all men courageous. It depends on the material-discursive-spatial context within which such activities are undertaken. The new materialist framing highlights these important dynamics of gendered fishery decisions, practices, and emotionality. In addition to calling for a move towards understanding of non-rational, emotional factors in explaining the complexities of fisher couples' decision-making, this paper highlights the need to go beyond bargaining models often used in studies of couples' decision-making and practices, and embrace assemblage thinking by examining what emotions do within relations of socio-material, spatial and discursive contexts and how such entanglements could be unsettled to address gender inequality in couple's fishery decision-making and practices.

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Declarations

Conflict of interest Author has no conflict of interest to declare.

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