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The ‘Living Q’—An Interactive Method for Actor Engagement in Transnational Marine Spatial Planning

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Abstract: The interaction of stakeholders is regarded key in modern environmental and spatial planning. Marine/maritime spatial planning (MSP) is an emerging marine policy domain, which is of great interest worldwide. MSP practices are characterized by diverse approaches and a lack of transnational cooperation. Actors with various backgrounds have to identify mismatches and synergies to jointly aim towards coherent and coordinated practices. The ‘Living Q’ is a communication method to make actors aware systematically about their viewpoints in an interactive, communicative and playful environment, while it draws on results of a proceeding ‘Q Methodology’ study. Results from ‘Living Q’ exercises with international expert’s groups from European Sea basins show that the method is capable to foster communication and interaction among actors participating in ‘Living Q’ exercises, while having the potential to generate added value to planning processes by actor interaction in a collaborative setting.

Keywords: stakeholder engagement; Q Methodology; participatory approach; communication; interaction of actors; marine/maritime spatial planning

1. Introduction

Marine spatial planning, also termed maritime spatial planning (MSP) is an emerging approach towards a more effective use of the sea. MSP is a planning domain defined as ‘a process of public authorities of analyzing and allocating the spatial and temporal distribution of human activities in marine areas to achieve ecological, economic and social objectives’ [1] and has been a reaction to uncoordinated planning of coastal and marine areas [2]. Moreover, MSP has been described as, ‘optimizing sea use and ensuring the integrity of the ecosystem at the same time’ [3].

MSP has been developed in response to current spatial challenges and is considered a rather new governmental approach in many parts of Europe [4]. Thematic European Union (EU) directives are stressing the importance of transnational action at sea-basin level [5] but are lacking blue prints and guidance to planning processes itself. Over the last years, marine spatial plans have been adopted by an increasing number of countries within the EU. Plans and planning itself unveil significant divergence due to different institutional architectures [6] with diverse frameworks and priorities in the individual nations. A number of obstacles and challenges for MSP have been identified, ranging from the different stages of MSP implementation, different national and sectoral priorities and opposing

interests, as well as varying MSP governance systems [7]. Although, MSP responsibility lies at the national level [3], challenging activities occur at the transnational level particularly. Transnational cooperation among countries results in a number of difficulties involving transnational users and usages range from shipping, to cables and pipelines, and fisheries across the sea basins. Many MSP initiatives lack the international perspective [8], which makes the requirement for greater transnational coherence and collaboration even more visible to eventually find long-term solutions.

In many projects collaboration of actors (and stakeholder engagement) has been identified as one of the key strengths [9,10] and is considered to be a significant factor for the successful implementation of MSP by adding and providing mutual understanding about MSP issues, to explore and integrate ideas and generate new options and solutions [11]. However, according to Pomeroy and Douvere [9], the involvement of actors and stakeholders' alone is not yet sufficient, they need to be (and feel) empowered. Underlying theories, such as organizational or social learning [12–14] become significantly important. Such theories look into crucial fields of what a society has to learn when managing marine regions, i.e., respecting worldviews of different actors, exchange of ideas and building a mutual understanding of problems. According to Kannen [15], planning for a marine environment has to deal with an increasing number of actors and various groups in society. These may have different perceptions and interests of the same marine area [15]. Dealing with those various perceptions, values and worldviews or even belief systems requires further assessment.

While the need for active MSP communication strategies has been identified in early planning stages, methods/tools are missing to make both, viewpoints and perceptions transparent to participants involved in planning processes. A method is needed that supports dialogue and fosters the communication of planners and actors to enable them to identify mismatches and synergies. MSP, as a relatively new approach, is in particular lacking a method to discuss MSP-relevant topics, exchange ideas and to identify viewpoints of participants. Research is necessary in order to gain understanding of different actors with various backgrounds, worldviews and the different ways MSP is perceived.

The 'Q Methodology' combines qualitative and quantitative approaches [16–18] and explores peoples' viewpoints or mindset, to enhance and gain a better understanding of specific topics, in this regard MSP, where people with different belief systems and worldviews interact.

We developed the 'Living Q' as an addition to the 'Q Methodology'. The 'Living Q', helps participants to categorize, discuss and evaluate outcomes of a preceding Q sort study in an interactive (living) setting, as results are evaluated immediately among actors. Accordingly, the authors question: To what extent is the interactive 'Living Q' method capable to facilitate an open discourse in transnational spatial planning processes?

In this paper, we aim to propose the 'Living Q' method as an innovation for transnational spatial planning. We use MSP as a case to validate that the method is capable of identifying participants' viewpoints, perspectives and values. We also demonstrate that the 'Living Q' helps to raise awareness of participants about different existing mindsets, to foster interactive discussion in transnational MSP and to work towards collaboration and participation.

2. Materials and Methods

MSP can be considered a suitable example for the 'Living Q', as MSP is still in its infancy. The domain exhibits high dynamics and complex interactions and can be considered an interesting case. Transnational MSP requires integrated approaches and interactive processes. It has been introduced in different countries [19] and can be described as a much needed approach to manage and organize the use of the sea and oceans. A number of policies on MSP have emerged lately. The increasing use of the sea and competition for marine space is especially visible in Europe [15]. From 2007 onwards, EU member states have been increasingly active in the area of MSP, by publishing the Integrated Maritime Policy (IMP) [20], followed by the Roadmap for Maritime Spatial Planning [21] and implementing the EU Marine Strategy Framework Directive [22]. Most recently, in 2014 the EU adopted the European Maritime Spatial Planning Directive (MSPD) [23]. The main purpose of

maritime spatial planning, according to this directive, is ‘to promote sustainable development and to identify the utilization of maritime space for different sea uses as well as to manage spatial uses and conflicts in marine area’ [23]. This directive also highlights the fact that EU member states have to consult relevant stakeholders and authorities, while also consulting bordering states about their marine waters to cooperate and to ensure that marine spatial plans are coherent and coordinated across their marine regions [23], as uncoordinated marine planning can result in underperformance of the (blue) economy [2]. Finding a common ground, gathering relevant viewpoints of MSP and discuss across borders is, therefore, of the highest importance.

2.1. Original ‘Q Methodology’

The ‘Q Methodology’ combines qualitative and quantitative research characteristics, exploring and identifying ‘viewpoints’ of people concerning different topics [16,18,24]. It originated in psychology [18] and was developed to study human subjectivity. The methodology extracts qualitative subjective data from respondents about their values. It does not require a large amount of data to produce statistically valid results [25]. The method involves numerous statistical and mathematical techniques and is now applied in various fields including, social science, political science, and economics.

The general Q Methodology approach can be summarized in the following sequence of five steps: (1) definition of the domain of discourse; (2) development of a set of statements; (3) selection of the participants representing different perspectives; (4) Q sort by participants; and (5) analysis and interpretation.

The first step includes the identification of the area of research, the context and the population in which the study will be applied. Subsequently, a number of statements on the selected topic (e.g., from literature, interviews, conference proceedings) is generated [26]. These statements provide the foundation of the method and are used to ascertain the understanding of participants on a certain topic. The number of statements has to be reduced to a manageable amount, which usually ranges between 35 and 45 different statements [25] followed by the selection of participants for the study. In the following crucial step, participants are asked to score the selected statements from disagree to agree. In other words, participants are asked to score each individual statement on a scale to indicate how strongly they agree/disagree with the given content of the statement. The scoring is done in two stages. Participants go for a rough sorting first and rank the statements in three categories (disagree, neutral, agree). The next stage focuses on the actual Q sort, where participants rank the same statements according to the more specified categories (Figure 1).

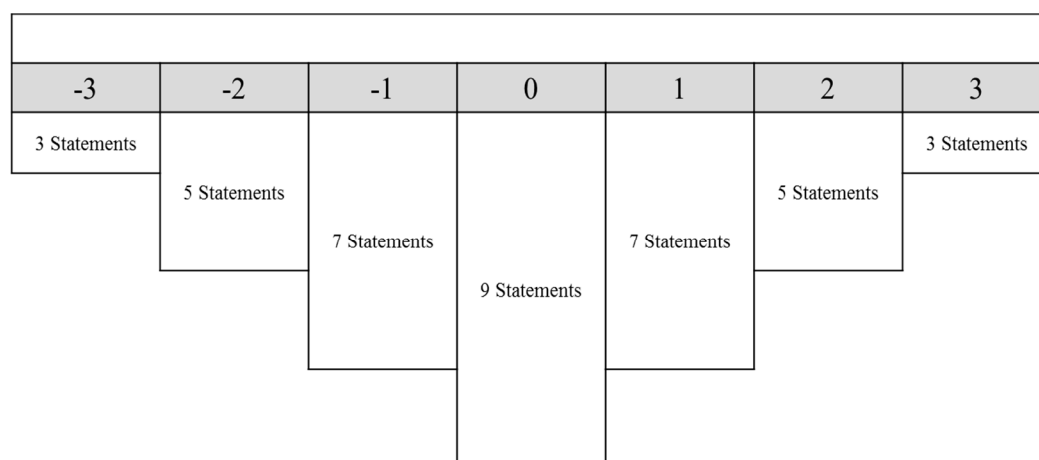


Figure 1. Q Methodology scale. Distribution of statements as ranked by participants in seven main categories.

Different types of scales can be used, however, it is necessary to have a fixed number of statements for each category (Figure 1). Finally, outcomes of the statistical analysis are interpreted in terms of viewpoints for further discourses.

2.2. The 'Living Q'

Spatial planning, especially MSP calls for mutual understanding via interactive dialogue. Therefore, we reflected on the 'Q Methodology', to integrate dialogue and reflection. For that matter we relate to key elements of social learning [12–14] and belief systems [27]. Social learning originates from learning of individuals in a social environment by observation and imitation of others [12], while belief systems are defined as collective beliefs and are also referred to as shared mental models [13]. The 'Q Methodology' is based on subjective opinions that can be traced back to a number of belief systems or worldviews for a certain context. In different planning settings, belief systems or worldviews are likely to cut across institutional boundaries. However, those worldviews and belief systems of individuals are difficult to elucidate, as people participating in planning processes usually do not discuss worldviews and are, therefore, mostly unaware of predominant drivers and opinions. The 'Living Q' provides such insights as it underlines the development of shared meanings and practices.

Actor involvement and participatory approaches are becoming increasingly important. Collaborative tools can support the facilitation of participatory approaches [28]. According to Morf, Perus, Steingrímsson, Ekenger, Evans, Mayer and Zhou [28] collaborative planning can hardly be taught and learned individually or by books, as there is a need for interactive practice and personal experience in MSP [29].

This study focuses on the method 'Living Q', which has been developed to create a setting to allow participants to have an interactive dialogue, to discuss and compare planning approaches, and potentially reach agreements on fundamental objectives, to identify mismatches and to finally learn from one another. The 'Living Q' uses a playful setting to bring actors and their worldviews and belief systems into direct contact. Simultaneously, participants' viewpoints, perspectives and values will be identified to foster discussions on MSP-related topics.

The 'Living Q', therefore, distinguishes itself from the 'Q Methodology' by giving a certain group a floor to share views and beliefs within the group by communicating and exchanging with others. Motivation and reasoning for ranking statements becomes transparent to the participants of the group dialogue and will be interactively discussed among participants. This role of individuals differentiates the 'Living Q' and the 'Q Methodology'. The 'Q Methodology' focuses on responses of individuals, while the 'Living Q' is set as a physical group that enables participants to comment and express themselves and the views, aims and objectives of individuals in MSP processes. The need for interaction in MSP [11,15,29] underpins the frame of the method. The 'Q Methodology' is selecting statements that have been identified as disputable; the 'Living Q' is carrying it on from there.

The approach aims at all levels and all actors of MSP processes, ranging from early national or transnational pro-active discussions, to the moment challenges or barriers arise and actors from local to international influence or interest.

The 'Living Q' comprises (1) a preceding Q methodology study; (2) identification and tailoring of controversial statements to the group; and (3) a 'Living Q' interactive exercise. Two case studies exemplify this three-steps-approach. Step one: The authors compiled 39 different MSP statements, according to the Q Methodology, using a ranking from strongly disagree to strongly agree (−3 to +3, including neutral) with the significant importance to allow only a limited number of statements in each fixed category (Figure 1). In total 28 MSP experts with a background in MSP practice and research from various countries around the North Sea, Baltic Sea and Irish Sea participated in the Q Methodology research.

Step two: A statistical analysis has been carried out based on a 'Q-sort', one element of the 'Q Methodology' to identify statements with the highest standard deviation to select the most

controversial statements (many people agreed, as well as disagreed with the statement) (Table 1). These seven statements have been used for a ‘Living Q’ exercise in Edinburgh, Scotland. In total, 20 participants from various countries along the North Sea, representing Scotland, Norway, Sweden, Denmark, Germany, The Netherlands and Belgium. The participants during the pilot exercise were MSP experts with numerous years of MSP experience working for national ministries, as well as research universities. This exercise has been recorded by camera for documentation purposes and a transcript has been made. The exercise has been played for one hour with a focus on two statements (statement no. 1 and statement no. 2, see Table 1). These statements have been ranked and discussed.

Table 1. Seven marine spatial planning (MSP) statements of the first ‘Living Q’ exercise with highest standard deviation.

No.	Statement	Standard Deviation
1	Marine planning and terrestrial planning are strongly linked and should not be separated.	1.87
2	Human activity is causing the diversity of life on earth to be lost at a greatly accelerated rate. These losses are irreversible, impoverish us all and damage the life support systems we rely on every day.	1.80
3	The main challenge in MSP is a duly needed harmonization of rules and regulations.	1.76
4	Ecosystem based management should be seen as the foundation for cross-sectoral MSP.	1.70
5	If we take action now, the oceans possess the potential to rebound. If we do nothing, we will witness further collapse.	1.66
6	MSP should always be based on adequate scientific data and provide proper evidence for the impact of human activities and developments.	1.57
7	MSP is an instrument for cross-sectoral management and providing predictability for future economic investment.	1.57

Another exercise was introduced during the EU Maritime Day in Poole, UK, and focused on five statements (Table 2) that have been tailored to the needs of the participating actors. A total of 39 participants working in 18 different countries took part. The exercise in Poole involved actors from public/private and non-profit organizations. The ‘Living Q’ in Poole discussed and focused on five statements (in five different categories accordingly). The group of 39 participants has been divided into five sub-groups with one moderator each to better handle a large amount of actors.

Table 2. Five MSP statements of a ‘Living Q’ exercise tailored for an international audience discussing MSP. The relevance of statements relate to key elements of MSP.

No.	Statement	Relevance
1	Ecosystem based management should be seen as the foundation for cross-border MSP.	Ecosystem based management as a mandatory pillar of the MSP directive.
2	The main challenge in cross-border MSP is a duly needed harmonization of regulations and legislative arrangements.	Harmonization is often proposed as the ambition of MSP processes.
3	A strong degree of cooperation between national authorities is crucial for MSP.	MSP has been characterized by a lack of transnational cooperation.
4	Marine Planning and terrestrial planning are strongly linked and should not be separated.	MSP directive asks for consideration of land-sea interactions.
5	Cross-border stakeholder engagement is more effective at a local level.	Stakeholder engagement is mandatory according to the MSP directive; diverse approaches of stakeholder engagement visible.

Step three: A moderator presents the rules of the game to the participants before starting the ‘Living Q’ exercise. It is crucial that the number of statements equals the number of ranking categories, as only one statement per category is possible. An important component of the exercise is that people position themselves and their viewpoints by freely moving around the room along a u-shaped line with the corresponding categories. Subsequently, a group discussion is started by the moderator who will take care that the participants will give justification, use fair argumentation and reasons for changed views, while discussing their viewpoints afterwards. Justifications, argumentation and changed views are here of particular importance. The rules of the game are summarized in Table 3.

Table 3. ‘Living Q’ rules of the game.

Step	Description
1	Participants are asked to have a look at the pre-selected statements on MSP.
2	Afterward, participants are asked to sort these statements into categories from strongly disagree to strongly agree (including the category neutral) using a sheet of paper, questionnaires or pre-printed cards with the statements. Note: Only one statement per category is possible.
3	The moderator shows each statement at a time.
4	Participants walk around a U-shaped line in the room and position themselves along bases, which indicate the numbers for the ranking.
5	The moderator highlights the distribution of participants and facilitates a discussion and participants explain why they decided to position themselves in this specific category.
6	Participants have the opportunity to re-consider and change their ranking after discussions and position themselves in another category.
7	Repeat from step 3.
8	Moderator asks participants to reflect their decisions and experiences.

3. Results

The data collected during the ‘Living Q’ exercise show that the distribution of participants along the line of categories is not homogeneous. Distribution patterns of the self-positioning behavior of the participants reveals that controversial statements according to the ‘Q Methodology’ are considered to be controversial in the ‘Living Q’ as well. This demonstrates the diversity of opinions or viewpoints. According to the observed distributions, this seems to be a general phenomenon (Figures 2–4). The distribution pattern along the categories vary from statements to statement and also within the sub-groups of one statement (Figure 4).

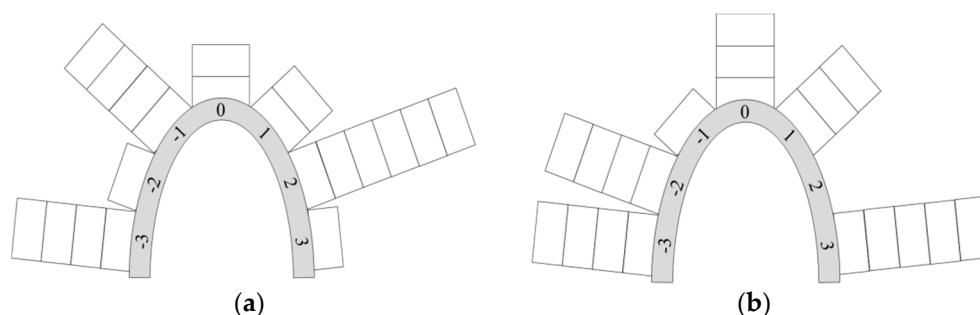


Figure 2. Distribution of participants along the seven categories discussing statement no. 1 (a) and statement no. 2 (b). Each rectangle represents one participant. Patterns as emerged during the Edinburgh exercise.

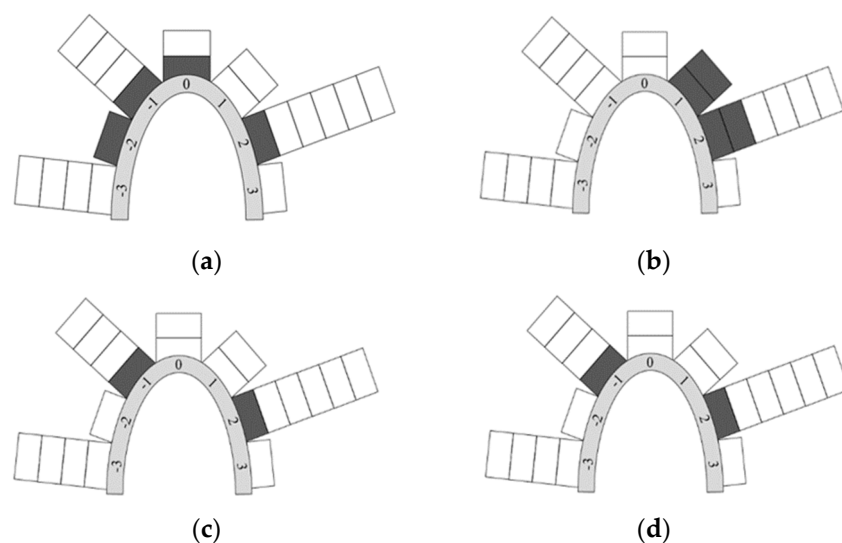


Figure 3. Overall and intra-institutional variance of distribution. Distribution patterns for statement no. 1 as discussed during the Edinburgh exercise. Grey fields in (a), (b), (c) and (d) indicate intra-institutional distribution of participants.

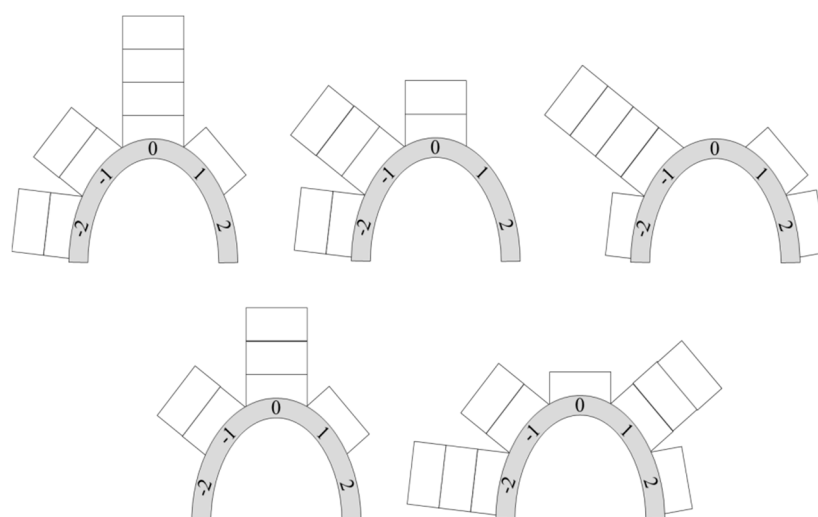


Figure 4. Distribution of participants during the 'Living Q' session in Poole. Each distribution represents a sub-group discussing statement no. 1.

The distribution of the data collected in Edinburgh is displayed in Figure 2. The spectrum of positions covers the entire range from strongly disagree to strongly agree (see Figures 2 and 3 for distributions), with the exception of statement no. 2 of the first exercise (Figure 2b), where the category 'disagree' is not represented'. Figure 3 gives an example of the intra-institutional distribution to indicate persons who work for the same organization (e.g., same ministry within one country) based on statement no. 1 as an example.

Viewpoints also differed between persons of the same institutions, as well as across institutions. Participants of the study described the exercise as: 'surprising to see that colleagues I work with every day in the same institution ranked the same statement entirely different', and 'this exercise was extremely successful and I learned a lot about different viewpoints and perspectives of MSP processes. It was also a lot of fun'.

Figure 4 shows the five sub-groups of the second exercise and their distribution within the categories for statement no. 1. The other four statements that have been discussed show similar

distributions. In total, a quarter of the participants of the European Maritime Day exercise changed their mind after the discussion and relocated within the room to express their new ranking of the statement.

4. Discussion

The ‘Living Q’ method has demonstrated the potential to improve both discourse and interaction of actors in transnational MSP. The capability can be explored in three main dimensions (1) the operability and limitations of the method; (2) benefits for individual actors and the group of participants; and (3) implications for MSP processes.

(1) Operability and limitations of the method—The preceding ‘Q Methodology’ [16,18,24] is an indispensable step of the ‘Living Q’. In addition to a ‘Q Methodology’ study, the ‘Living Q’ is a playful and interactive discourse method comprising qualitative and quantitative approaches towards a communication strategy. In this respect, the selection of controversial statements and subsequent statistical analysis, while also tailoring statements and categories for the exercise has been proven successful. The identified steps of controversial statements fostered discussions and showed a wide variety of viewpoints among participants.

However, the ‘Living Q’ is highly dependent on the quality of the selected statements which highlights again the importance of the basic ‘Q Methodology’ survey. This labor intensive survey must cover the topical context of the subsequent ‘Living Q’. Good quality statements are as important as the number of statements used. The two pilot exercises showed that discussing each statement takes a certain amount of time. Based on the results of the exercise it is advised to focus on a careful, thorough discussion of the most crucial statements rather than a larger number of statements. Five statements are the maximum number to discuss within the limited time frame of one hour.

Furthermore, stakeholders’ commitment and their willingness to engage in the exercise are important. Participants reason differently and dialogue is one of the main aspects of the method. These points should be taken seriously while conducting the ‘Living Q’. Lastly, statements have to be unambiguous and understandable to allow participants to directly grasp the main points of it.

A specific characteristic of the ‘Living Q’ is to give participants the opportunity to reconsider and change their mind after the discussions and if applicable, position themselves in another category. This is an important step of the ‘Living Q’ that is well perceived by participants. The moderator offers the reconsideration of the ranking, which can or cannot be adopted by the participants.

The ‘Living Q’ is designed as a tool to set a common stage in changing participatory societal processes. Such a tool is by no means a holistic approach to participation in general, as it cannot solve problems like unevenness of power relations.

In general, the ‘Living Q’ is based on experience by the authors. Each exercise needs careful tailoring to fit the individual group, their background, their knowledge and the general setting of the event. The ‘Living Q’ does not necessarily need to be restricted to a target audience comprised of MSP actors, such as planners or researcher in the field of MSP. The ‘Living Q’ has potential to serve as a method for engagement and involvement of other societal groups or other societal processes as well.

(2) Benefits for individuals actors and the group of participants—While the variety of individual opinions on a certain topic is made obvious to all the participants, the group discussions provide reasons for the variety of viewpoints among participants. Both visual impression and reasoning are key to this interactive participatory method for rising participant awareness of mismatches and synergies in planning conditions. Examples cover the misunderstanding in perceiving certain terms, as well as synergies in local MSP approaches. Simultaneously, it fosters collaboration, and discussion on uncoordinated planning and management particularly of the marine space. Uncoordinated planning can be a result of a lack of transnational cooperation and underperformance of the economy [2]. ‘Living Q’ supported participants to get a better understating of the different ways of how MSP is perceived and put into practice.

The identification of mismatches and synergies is helpful to participants in acknowledging their colleague’s viewpoints on an intra-institutional, intra-sectoral as well as international level and

becoming aware of divergent existing views. This in turn shows the importance of transnational action. Observed mind changing of a noteworthy proportion of participants indicates that the ‘Living Q’ could help to reduce conflicts among actors and belief systems by bridging the gap between fragmented individual subjective opinions and institutionalized policy discourse. Actors experience beliefs, such as expressed in the MSP statements and interpret them differently. This differentness drives the discussion with other participants that feel the same or differently. Knowing such frames or beliefs give ways for interpretation to identify linkages to approach conflicts and to find actors who are capable to mediate between certain views. Such social learning is needed and management practices that involve many actors are demanded [13].

(3) Implications for MSP processes—It was uncontroversial among participants that it is necessary to find common ground and scope of action for MSP processes. This reflects the background of the majority of the participants. They represent the North Sea and the bordering sea basins belong to the busiest marine areas in the world [2]. European seas have been of high importance for the social and economic development for many years [8] and represent numerous needs for future processes. The regional seas represent pilots for worldwide challenges in current transnational MSP, such as implementing the ecosystem approach and the necessity of consent of certain terms [30]. The ‘Living Q’ is a tool to foster these challenges.

Ranking the statements helped to set priorities and to argue about the relevance and relative importance of certain aims and approaches. The overall exercise showed that even though all experts work within the same sea basin and on similar challenges, different viewpoints are greatly visible. Some actors however, discovered that their views and opinions are even closer to their ‘neighbors’ or colleagues than they thought before.

5. Conclusions

The ‘Living Q’ has successfully been introduced and applied in the MSP community. Discussing viewpoints could lead to an improved understanding of each other’s priorities. Actors acknowledged the ‘Living Q’ as a framework that fosters dialogue, supports communication and that it leads towards improved understanding.

In summary, the ‘Living Q’ method is capable of supporting transnational MSP processes towards a more informed actor participation in an interactive manner. It is a promising addition to the repertoire of methods for stakeholder engagement and interactive practices, considering different national and sectoral priorities, different stages of implementation, as well as changing governmental systems. Participants have been highly engaged in the exercise and viewpoints differed significantly. Further applications of the exercise are currently carried out across Europe.

Author Contributions: The original idea of the ‘Living Q’ has been developed by M.R., X.K., T.K. and I.M. The article was conceptualized by M.R., with support of X.K., T.K. and I.M. M.R. and X.K. moderated and conducted the ‘Living Q’ exercises. The data was analyzed by M.R. The original draft of the paper was prepared by M.R. with input from X.K., T.K. and I.M.

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