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RESEARCH ARTICLE

# Seeing the Wind (Farm): Applying Q-methodology to Understand the Public's Reception of the Visuals Around a Wind Farm Development

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**ABSTRACT**

This research investigates the reception of the visual representations of a wind farm (WF) development by local stakeholders. Using non-verbal Qmethodology, residents of Lesvos' island, Greece, sort images according to how these images represented their opinion about the proposed Aegean Link WF project. We found three opinion types. The "Risk Averter" type is focused on the various risks of constructing and operating the Aegean Link wind development. The "Green Developer" type believes that the renewable energy project will benefit both their local community and the environment. The "Realist" type defers to expert knowledge to make decisions about project outcomes and is sceptical of media bias. While the former two types seem to form their visual opinions based on whether they are in favour or against (respectively) of the WF development, the Realist opinion is rather guided by carefully considering whether the visual stimuli are representative of the project's actual characteristics.

Who has seen the wind?
Neither I nor you:
But when the leaves hang trembling,
The wind is passing through. [. .]
Christina Rossetti (1830–1894), *Who has seen the Wind?*

## Introduction

Research investigating public views about wind-power development has largely been based on "verbal" data, that is, on spoken or written speech; examples include stakeholder interviews, surveys, or questionnaires (e.g. see Johansson & Laike, 2007; Jones & Eiser, 2009), the analysis of print materials (Barry, Ellis, & Robinson, 2008), Stephens, Rand, & Melnick, 2009) or choice experiments (Dimitropoulos & Kontoleon, 2009). Based on these language-based approaches, we now know that the public's opinions on wind development projects are complex (van der Horst, 2007) and unheeding to simplistic "not-in-my-backyard" (NIMBY) explanations (Botetzagias, Malesios, Kolokotroni, & Moysiadis, 2015; Burningham, Barnett, & Thrush, 2006; Devine-Wright, 2005; Wolsink, 2000).

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At the same time, however, a particularly prominent theme in the academic literature concerning the acceptance of, or resistance to, windfarm (WF) development has been the "visual." For example, Delvin (2005), Wolsink (2007), Devine-Wright (2005), and Ellis, Barry, and Robinson (2007) all discuss (perceived) "visual impacts" (on the landscape in general, on one's view from his house/property, of the WF's aesthetic, and so on) as a key factor in affecting public acceptance of WFs. And while it is true that a large array of factors may affect the community acceptance of a particular WF (such as personal benefits and costs (including nosie annoyance), a so-called "NIMBY" syndrome, trust on the developers and the decision makers, private vs. communal ownership of the WF, conflicts of economic interests, "procedural" fairness-concerning the decision process- and "distributive" fairness—concerning the allocation of benefits and costs-, impacts on the wildlife and on the landscape, the valuation of—and attachment to—the particular place (for recent reviews, see Peterson, Stephens, & Wilson, 2015; Wolsink, 2013), the "visual" dimension stands out. As Wolsink (2007, p. 1194) notes "[the] visual evaluation of the impact of wind power on the values of the landscape is by far the dominant factor in explaining why some are opposed to wind-power implementation and why others support it" (2007, p.1194) while the variability of the different landscape's elements *as well as* of their valuation by individuals "is what is making the landscape issue highly subjective, and impossible to quantify objectively" (2013, p.1811).

In this paper, we also study the "visual" dimension of a WF development and its subjective evaluation, yet do so in a distinct way: we examine and wish to identify how the local public perceives the imagery which is actually used in the public debate around a WF siting. Researching this topic aims at undressing a serious gap in our knowledge of the public's views on WF sitings. Anyone with even the most limited experience of conflicts over WF sitings is familiar both with a typical anti-wind development pamphlet—filled with claims about the project's "disamenities" (e.g. scenic degradation, noise, loss of property value, and so on) *and* studded with murkey images of eroding mountains, broken turbine blades, or traumatized birds—as well as with the decidedly pro-development materials—arguing on the project's "amenities" (such as clean energy, working places and the rest) *and* accompanied with sunnily lit images of turbines flanked by flowers and smiling children. Yet, while we know a considerable deal on the (variability of the) public's reception of the *verbal* part of the argumentation around WF developments (e.g. Ellis, 2004; Ellis et al., 2007; Wolsink & Breukers, 2010), we have no knowledge of its *visual* counterpart. This is not a light omission since images, like words, communicate meaning, and they have long been identified as a crucial component of a "media package"—the "interpretive package that give[s] meaning to an issue": "Visual images" are one of the devices used for communicating the package's "central organizing idea, or *frame*, which serves as the framework [to the 'receiver' of the media package] for organizing and making sense of relevant events […]" (Gamson & Modigliani, 1989:3). Recent research suggests that images/visuals are the prime vehicle for arousing emotions and shaping risk perceptions (e.g. Joffe, 2008; Smith & Joffe, 2009), and some maintain that visual messages' impact may be more subtle and powerful than verbal ones. For example, Messaris and Abraham (2001, p. 224) argue that "visual images may have the capacity to convey messages that would meet with greater resistance if put in words," while Baran and Davis (1995, p. 271) claim that "all too often, the visual information is so powerful that it overwhelms the verbal."

Examining the verbal part of the relevant discourse will also enhance our overall understanding of the debates around WF conflicts, since the verbal and the visual parts of a discourse are not (perceived) necessarily in the same and/or in congruent ways. Thus Domke et al. (1997, p. 733), discussing the correlation between media coverage of and public opinion on the 1996 US presidential candidates, argued that "[t]he visual impact of [the Republicans' candidate Robert] Dole on television and in newspaper photos may have left a different impression […] than the analyzed [textual] news coverage would suggest" while DiFrancesco and Young (2011, p. 517) noticed a disjuncture between images and text in the Canadian newspapers' coverage of climate change, which "tend [ed] to pull in different narrative directions." This discrepancy is largely due to the fact that, according to Messaris and Abraham (2001), images have three qualities that distinguish them from textual

information. First, images have an "analogical" quality which makes them appear "more close to the reality than words are" (p. 216). Second, images, and photographs in particular, have "indexicality"—"the connection between photograph and reality has a certain authenticity that human-made pictures [i.e. such artistic impressions of events or Photoshop-ed images] can never have" (p. 217). Finally, images lack "an explicit propositional syntax" (p. 217): unlike oral or written speech, images do not have a set of rules for stating cause-and-effect relationships: as O'Neill (2013, p. 11) points out, "causality relies on the reader making intuitive sense of implicit meanings."

These images' characteristics make the study of their perception even more important, especially in the context of *would-be* projects such as a proposed WF. When the "real thing" does not yet exist, both the promoters and the objectors of a project would have to rely on the use of visual proxies (such as images of a similar development elsewhere, of the areas to-be-affected, of relevant individuals or groups, of graphical depictions and so on). In effect, this means that not only the visual statements' intended "causality" (i.e. "what does the photo imply?") but also their "analogy" (i.e. "is it real?") and "indexicality" (i.e. "does it relate?") (Messaris & Abraham, 2001) would then be (even more) debatable and open to interpretation. Yet, what these interpretations may be, and whether there are notable differences between types of images (e.g. landscape vs. person images), remains to be established.

Thus, in this paper we are interesting in identifying the different opinions concerning the visual components of the debate around a large-scale, onshore WF development. As the previous discussion suggests, the visual components of the discourse around WF development merit their own detailed analysis, not simply for exploratory reasons, neither because this will offer us a fuller knowledge of the public's views around WF developments. But rather, and more importantly, because by establishing what meanings the public attributes to the visuals used, we are able to better understand how images operate as persuasive arguments in debates around WF development. We already know that, with regard to the *verbal* "arguments" of the debate, there are "many ways to say 'No' [and] different ways to say 'Yes'" when it comes to the "public acceptance of wind farm proposals"—as the title of Ellis et al.'s (2007) article accutely puts it: in this research we wish to establish which opinions about the *visual* "argumentation" surrounding a WF development exist—and how they differ between one another.

In the next section we introduce our case study, a contentious WF development on the island on Lesvos, Greece. Similar to other research regarding the *verbal* arguments in the debate around wind energy (e.g. Ellis et al., 2007; Wolsink & Breukers, 2010), our analysis uses Q-methodology (see the Methodology section) (Brown, 1980). We identify three main opinion types over the WF-related imagery. At the concluding section, we discuss our findings and link them to the broader challenges of communication for sustainable development.

## Context and case-study area

The "Aegean Link" (Greek: Αιγαία Ζεύξη) project is a development proposed by the Rokas Group, a company formed from a partnership between the Greek Rokas Engineering and the Spanish Iberdrola Renewables companies. In its most basic form, Aegean Link plans to install a total of 373 turbines (706 MW of installed power) on the Greek islands of Lesvos, Chios and Limnos, which will then be interlinked and connected to mainland Greece via underwater cables (see Figure 1). Lesvos is designated to host 153 onshore wind turbines (306 MW installed power) (Rokas Renewables: An Iberdrola Renewables Company, 2010), and it is this section of the overall project which constitutes the research topic of this study

In Greece, these types of large-scale development proposals are typically backed by the State and then contracted out to private companies for implementation. This is also the case for the Aegean Link plan, with the Greek state motivated to back interconnection in the North Aegean for a variety of reasons including favourable local meteorological conditions, national energy security concerns, and international climate change mitigation obligations. On the other hand, sceptics on Lesvos, such

**Figure 1.** Study context with Lesvos' towns and villages relevant to the current research indicated.

as local ENGOs, village authorities, academics as well as concerned individuals, have voiced a wide range of concerns related to the required construction works (deemed excessive), the ensuing noise, the impacts on avian and underwater wildlife (especially since the WFs will neighbour a NATURA 2000 site), on local agriculture and husbandry and on the landscape and the tourism industry (especially since the WFs are to be located relatively close to the famous Petrified Forest National Park of Lesvos).

At the time of this research (springtime, 2013), the developers had secured the necessary government licences by the Greek Regulatory Authority for Energy (RAE) and had conducted the required environmental impact assessments studies. These studies were then put into public deliberation and had been the subject of discussion and debate among local residents, academics, environmental groups, local government officials, journalists and professionals (such as people working in the local tourism industry).

## Methodology

### Q- Methodology: rationale and instrumentation

Q-methodology, originally developed by William Stephenson in 1935 (Brown, 1980), is explicitly concerned with the measurement of subjectivity. That is, it seeks to "model" (McKeown & Thomas, 1988) and compare opinions that exist within a researcher-delineated discourse.

Q-methodology acknowledges that opinions are formed through complex interactions of experience, information, environment, and other factors, thus it seeks to understand and compare opinions holistically and in their entirety. Q-methodology can thus be said to be "gestaltist" (Du Plessis, 2005). That is, it is most concerned with discerning the broad "shape" of opinions rather than making isolated inquiries into selected aspects. In other words, rather than making a query about only one aspect of subjects' opinions, Q-methodology seeks to holistically define the nature

of opinions on a topic. Further, it aims to provide quantitative data for comparing the various opinion types. The reader is also referred to the next sections for a more detailed exposition of the Q-analysis process.

Q-methodology has been employed in a vast variety of disciplines, including those related to the environment. Addams and Propps' edited volume (2000) highlights environmentally themed Q research related to environmental controversies, policy dialog, perceptions of the environment, animal concerns, forest management, and other topics. Other recent topics of Q-research include environmental conflict resolution (Asah, Bengston, Wendt, & Nelson, 2012), environmental economics and sustainability discourses (Barry & Propps, 1999), acceptance of resource-saving policy measures (Cools, Brijs, Tormans, De Laender, & Wets, 2012), environmental worldviews in agricultural regions (Davies & Hodge, 2007 and 2012), perceptions of rurality (Duenckmann, 2010), international environmental regimes (Frantzi, Carter, & Lovett, 2009), environmental reporting in media (Giannoulis, Botetzagias, & Skanavis, 2010), and wind-energy-related issues (Ellis et al., 2007; Wolsink & Breukers, 2010). While the vast majority of these studies employed verbal (linguistic) Q-statements, visual stimuli may also be used to elicit the respondents' views (McKeown, Hinks, Stowell-Smith, Mercer, & Forster, 1999). Non-verbal Q-studies are not a complete rarity (cf. Brown (2008)), and there is a recent trend in research to employ visual images for studying environmental issues (Fairweather & Swaffield, 2000, 2001; O'Neill & Nicholson-Cole, 2009; O'Neill, Boykoff, Neimeyer, & Day, 2013; Sleenhoff, Cuppen, & Osseweijer, 2015).

### Defining the concourse

According to Brown (1993, p. 94) the "concourse" refers to "the flow of communicability surrounding any topic … [and it derives from] the ordinary conversation, commentary, and discourse of everyday life" (Brown, 1993, p. 94). The concourse is in effect the sum of all opinions on a particular topic, of all the different points of view. The Q-researcher first has to select a large group of (verbal or otherwise) "statements" from the everyday communication (the "concourse") about the specific topic. At this stage, a large variety of statements should be collected, and it is not necessary that all statements "make sense," or adhere, to the researcher's perceptions of what is important: this is (left) to be determined by the respondents' *themselves*, based on *their* subjective opinions, at the later stages of a Q-method research.

For selecting this study concourse's image statements (hereafter referred to simply as "statements"), we conducted both an open Internet search (Google) and selectively searched websites known to bear a direct relevance to the proposed Aegean Link project (Greek news agencies, local public information web catalogues, etc.) for the keywords "Aegean Link" and "Αιγαία Ζεύξη" (in Greek) or "Aegean Link Rokas" and "Αιγαία Ζεύξη Ρόκας" (in Greek). Since much of the public communication in print about the project has been carried out, or otherwise documented, on the Internet, it was considered adequate to limit our sampling to on-line resources. Returned items were maintained for further analysis only if they made specific mention of the Aegean Link project in the text. A further qualifying stipulation was that the discussion of the project made up a sizable portion of the article or material (one or more paragraphs). Upon identifying a qualifying item through this general search process, a second search was performed on the hosting site using the same keywords. Additional findings from these inter-site searches were similarly evaluated for inclusion in our study.

Only materials containing images or other non-textual graphic elements were retained for further analysis, and they included public planning documents, PowerPoint presentations, news articles, public information or promotional materials/pamphlets, news articles, and blog entries. All images embedded in the body of these texts were extracted. In the case of websites, banners or other images not directly related to the article of interest were not considered. Furthermore, material by the Rokas group or government entities, such as numerically based charts and tables, technical maps, schematic representations of project plans, and so on were used only if they were found re-posted in other blogs

or news stories since their re-interpretation and re-posting by others integrated them more naturally into the public discourse. This procedure yielded a total of 167 discrete images. These visual items, all of which accompanied a text-based material which made specific reference to the Aegean Link project, included photographs, comics, maps, portraits, graphics, copies of event posters, organization logos, and cartoons.

A note is necessary concerning our decision to include images making reference to specific entities or people (e.g. political party logos, letterheads and portraits). Since the mention of very specific projects and actors has been included in other *verbal* Q-studies, there is no a priori reason for excluding them from *visual* Q-studies. Including images of political party logos in particular, recognizes the undeniably politicized nature of the local WF conflict in question, and past research in Greece has demonstrated the conditioning effect that political parties' involvement had had on grassroots environmental protest (Kousis 2007). Furthermore, O'Neill et al. (2013) found that images of politicians and celebrities help in differentiating visual discourses across cultural settings. Finally, while the possibility that some respondents would not be able to recognize certain actors could be deemed problematic, respondents would categorize such unidentifiable images as "neutral/insignificant"; O'Neill (2013) reports that respondents were able to successfully complete the sorting task even when some unrecognizable actor images were included.

### Defining the Q-sample

As a next step, the Q-researcher must to decide on the "Q-sample," the sub-set of statements that will be presented to respondents for sorting. A typical Q-sample will contain approximately 30–40 statements or items (Addams & Propps, 2000), and the goal of the Q-sample selection is to reflect the full thematic range of statements observed in the concourse area of interest. Thus, we initially classified the 167 originally extracted images into nineteen categories, based on their content and/or type, such as: activities and tourism, audience at public hearings, portraits, bird-related, single turbines, groups of turbines on landscape, turbines with road, logos and letterheads, maps, and so on. Two broad themes were inductively identified, based on what was actually represented in the visuals, and used to guide our reduction of the original images' pool: one having to do with wind technologies, the landscape, and/or the effect of said technologies on the landscape; and, a second pertaining to politics, political economy, and/or public participation—containing images of public figures, organization logos or symbols, and images related to public participation, protest, and money. In narrowing down the images' number, every effort was made to maintain the initial image-categories' ratios while taking care that even the least voluminous categories (e.g. cartoons) were included in the final Q-sort. Furthermore, we made sure to include images sourced from articles and materials expressing a variety of views on the project and from a variety of host sites and authors. This narrowing process resulted in 46 images (out of the original 167) which constitute our final Q-sample (see Table X1 in the Appendix).

### P-set

Next follows the selection of a "P-set"—that is, the selection of individual respondents who will Q-sort the Q-sample images. This selection aims to sample from the widest possible pool of *opinions*, not from any particular *population* of respondents: the respondents must be relevant to the topic under investigation—thus their "non-random" selection. In the current study, knowledge of the local context motivated the selection of respondents from various societal groups, and we considered diversity with regard to place of residence, political views, level of political power, and technical expertise related to the project.

The selection of potential P-set respondents was carried out in consultation with local academics and residents involved in the Aegean Link debate, and to a lesser extent through snowball sampling. We approached residents of both the island's capital town, Mytilene, and the villages affected by the

WF development; from both native residents and from people who reside on the island due to their affiliation with the local University; from individuals working both within and outside of the governmental structure; and from individuals espousing both "pro" and "anti" positions vis-à-vis the proposed Aegean Link project.

The P-set respondents located in the capital town of Mytielene were contacted by email or telephone to arrange meetings. The sampling of villages' inhabitants was conducted according to convenience: after identifying ourselves as researchers from the University of the Aegean, we engaged village residents in "small talk" at public places such as cafes and cafeterias, which eventually turned to preliminary discussion of energy and wind development issues on the island. At this time, respondents were asked to complete the Q-sorting task (see next) at a cafe table. Due to the difficulty of enticing local villagers to participate in research conducted by strangers, sampling by convenience was the most realistic option for soliciting villagers' opinions. However, due to the unique nature of Greek village culture and adherence to traditional gender roles, it is very rare to find women in public spaces. Special attempts were made to access women in the villages by conducting sampling in womens' cooperative organizations, but even so, it proved difficult to access the "average" village women. This approach resulted in a P-set of 33 individuals.

Of the 33 originally completed Q-sorts, three Q-sorts were dropped due to the fact they were completed through the co-operation of more than one individual, an occurrence which highlights the challenge of adapting Q-sorting to the highly social and cooperative culture of Greek villages, while two Q-sorts were excluded due to the respondents' misunderstanding of the sorting condition, which became apparent during the post-sort interview. Thus 28 P-sorts were retained for further analysis (five completed by female and 23 by male respondents).

## Q-sorting

The respondents (P-set) were asked to arrange the Q-sample's statements through a procedure called "Q-sorting." This, in effect, means to rank-order the 46 Q-sort images on an 11-point Likert scale (ranging from "−5: least" to "+5: mostly") according to the prompt question (in Greek): "Which image represents/encapsulates more, or less, your personal opinion about the Rokas Company project 'Aegean Link?'" It is important to note that in Q-methodology the "0" middle point may represent neutrality but also feelings of indifference or irrelevance. Like other Q-studies, our respondents were restricted in the number of items they could place in each Likert-scale category; forcing respondents to distribute items into an approximate bell-shaped U-curve, which allows fewer items to represent the respondent's "extremes" of opinion, encourages careful consideration of each item relative to all others and thus enhances the Q-sorting process.

For our research, respondents were given both written and verbal instructions for performing the task. The Q-sort board was spread out on a table/desk, and respondents were presented with a stack of 46 shuffled image cards, printed in full colour and laminated. On the board there was a grid indicating the number of images that respondents were permitted to place in each column, and at the top of this grid was printed the prompt question for Q-sorting. During the image-sorting task, respondents were free to talk out loud about their decision to place the images in a certain way, and we took notes of their explanatory comments. Respondents could ask questions regarding their understanding of the Q-sort procedure, but no clarification of image content was given by the researchers. Following completion of the Q-sort task, a post-sort interview was conducted and recorded with each respondent. Usually lasting between 4 and 7 minutes, but sometimes significantly longer, these interviews helped to clarify the respondents' understanding of the sorting task and to record the reasoning behind sorting the images the way they did. Respondents were always asked to elaborate on the images placed as "most" and "least representative" of their opinions (placed in the ±5 and ±4 columns) about the project. They were also asked to elaborate on their placement of visuals depicting specific entities or people (political party logos, letterheads and portraits), given the scholarly debate over the role of such images (see the "Defining the concourse" section of this paper), as well as to

comment on images which they found hard to place on the sorting board, or which they felt merited further comment. As it is shown in the Results section, this "first-hand" verbal information was used for annotating our statistical findings and thus allowing us a more accurate understanding of the rationale guiding the visuals' reception by the respondents.

## Results

The 28 retained Q-sorts were analysed using PQMethod 2.11 software (Schmolck, 2012). We performed principal components analysis on the correlation matrix of respondents (i.e. the correlations between the respondents' Q-sorts) and the resulting factors were rotated orthogonally using varimax rotation. After that, the rotated factor matrix was Q-analysed, a procedure through which, by using the normalized weighted average statement scores of those respondents who define each factor, the "factor arrays" are computed, that is the model Q-sort of a hypothetical respondent who would exhibit a loading of "1" on the particular factor (i.e. perfect agreement) (Van Exel & de Graaf, 2005). It should be stressed that in Q-methodology the correlates are persons (i.e. respondents): the resulting factors represent points of view, and an individual respondent's loadings on each factor indicates his/her level of agreement with the holistic "point of view" encapsulated by the specific factor. A respondent's loading on a factor is statistically "significant" when it is sufficiently high to assume that a relationship exists between the respondent and the particular factor, and it is "pure" if it loads significantly on only one factor.

Taking into account that only factors with an Eigenvalue higher than 1.00 are statistically significant, as well as that the reliability of a factor is enhanced if it is defined by at least 5 Q-sorts (cf. Du Plessis (2005), McKeown and Thomas (1988)), a three-factor solution, containing 16, 5 and 6 "pure" loadings (i.e. individual respondents' Q-sorts loading only on the particular factor) respectively, was determined to be the most appropriate solution (see Table 1). This three-factor solution accounts for 50% of the variance while the low correlations between the factors suggest that the communality between the three visual worldviews is quite low (see Table X2 in Appendix). In Table 2 we report the Factor Array for each factor, which is in effect the "ideal" Q-sort of each factor. In the next subsections, due to space restrictions, we present only the images for which the strongest (dis-) agreement exists for each factor, yet our analysis and discussion will also be guided by the findings of all distinguishing visual statements as presented in Table 2.

### Factor A: Risk Averters

Factor A accounts for 27% of the variance in our sample and is defined by 16 Q-sorts/individuals (see Table 1). This is the factor on which most of the village resident-respondents (i.e. those living closely to the area of the development) "load" while the visual viewpoint represented by Factor A is one in which the risks and potential impacts of the Aegean Link project feature prominently, alongside considerations of the impact that the project may have on the various landscape types of Lesvos island. Generally, negative attitudes towards the project stem from concerns over a suite of social, economic, and environmental risks; thus, the respondents are nicknamed "Risk Averters."

The differences between the Risk Averters and other factors are evident if we check the images they most (dis-) agree with (Table 3) as well as this factor's "ideal" Q-sort (second column in Table 2). Of the 12 images included in our Q-sort which depict properly functioning onshore wind turbines, Risk Averters ranked half of them as being less representative, relative to all other respondents, of their opinion. Arguably, the proper functioning WF seems to them as a conscious attempt of the development's promoters to sugar-coat the issue: as one respondent mentioned, during his post-sorting interview, about an image (#26) showing flowers in the foreground and a wind turbine in the background, "They are trying to make [wind development] seem beautiful … no flowers, please!" Also, Risk Averters place a stronger emphasis on the local impacts of project implementation. They are more likely than others to classify images depicting local landscapes

**Table 1.** Lesvos' stakeholders loading on factors (* denoting a defining sort) after varimax rotation.

| Respondent Number, description and gender (F/M) | Factor A | Factor B | Factor C |
|---|---|---|---|
| 1, Village resident, F | −0.1056 | 0.5492* | −0.1049 |
| 2, University of the Aegean (UoA) employee, M | 0.4614 | −0.3167 | 0.5586 |
| 3, Member of municipal government, M | −0.5360* | 0.4344 | 0.2936 |
| 4, UoA professor, F | 0.8148* | 0.2249 | −0.2089 |
| 5, UoA affiliate, M | 0.1154 | −0.1492 | 0.6964* |
| 6, Mytilene resident and representative of political party, M | 0.0623 | 0.5828* | −0.0088 |
| 7, Village resident and environmentalist, F | 0.6409* | −0.3071 | 0.0595 |
| 8, Village resident, telecom company employee, M | 0.4423* | 0.3796 | −0.1407 |
| 9, Village resident, café owner, M | 0.5557* | 0.3345 | 0.2484 |
| 10, Village resident, sheep farmer, M | −0.5454* | 0.2662 | 0.3331 |
| 11, Mytilene resident and representative of political party, M | 0.6706* | 0.0162 | −0.0343 |
| 12, Regional council member, M | 0.6351* | −0.5217 | 0.0627 |
| 13, Regional government representative, M | −0.3822 | 0.2917 | 0.5768* |
| 14, Regional council member, M | 0.7350* | −0.2317 | 0.0974 |
| 15, UoA employee, M | 0.6449* | −0.3801 | −0.1204 |
| 16, UoA professor, M | 0.7505* | 0.3792 | 0.2209 |
| 17, Mytilene resident working in tourism sector, M | −0.1442 | −0.1846 | 0.3839* |
| 18, Mytilene resident working in tourism sector, M | −0.1152 | 0.1440 | 0.2934* |
| 19, UoA professor, M | 0.7653* | 0.1087 | −0.1869 |
| 20, Regional government representative, M | −0.0863 | 0.5931* | 0.2614 |
| 21, Member of municipal government, M | 0.7488* | 0.2360 | −0.1851 |
| 22, Mytilene resident, representative of political party, M | 0.7563* | −0.1552 | −0.2675 |
| 23, Village resident, retired, M | 0.0630 | 0.3408 | 0.5598* |
| 24, Village resident and environmentalist, M | 0.7038* | −0.2762 | 0.1039 |
| 25, Village resident, unemployed, M | 0.0912 | 0.1993 | −0.3701* |
| 26, Mytilene resident in Andissa village, F | 0.2653 | 0.6723* | −0.1842 |
| 27, Mytilene resident working in media, M | 0.2053 | 0.6938* | −0.0259 |
| 28, Village resident, women's collective volunteer, F | 0.5278* | 0.0058 | −0.1808 |
| Number of respondents loading on factor | 16 | 5 | 6 |
| Explained variance (%) | 27 | 14 | 9 |

without turbines as being *un*representative of their opinion about the project (e.g. image numbers 18, 3, 17, 33), suggesting that they are concerned that these landscapes will be changed during project implementation, a fact which is corroborated by statements made in post-sort interviews (see last column in Table 3). Also, Risk Averters more often highlight the large scale of the proposed turbines relative to local landmarks (#36). There is further evidence that they are particularly attuned to the consideration of local impacts; images which depict turbines in decidedly non-local, Northern European landscapes were ranked as being significantly less representative of Risk Averter opinions (#23, 21).

Risk Averters, however, are not only concerned with environmental and landscape risks, but also with operational and economic liabilities. Images depicting accidents during turbine use— problems with blades, fire, bird kills (#5, 14, 19)—are more representative of their opinions. Their concern over economic risk is encapsulated by stronger affinity with cartoons suggestive of economic exploitation, such as a cartoon criticizing green development (#41), a graphic showing a wind turbine with blades made of dollar signs (#15), and a drawing of a man running away from a row of turbines with money (#8), which—if coupled with their rejection of the positive-looking WF visuals as window-dressing— suggests that Risk Averters are not only concerned about the development's impacts but also suspicious of the developers' ulterior motives.

### *Factor B: Green Developers*

Factor B accounts for 14% of the variance in opinions recorded in our sample and it is defined by five Q-sorts; most of the respondents loading on this factor live on the island's capital town, Mytilene (Table 1). Factor B respondents' selection of images focus on the benefits of renewable energy development, suggesting that, in their evaluation of the project, the net benefits of green development

**Table 2.** Factor array of the visual statements per factor ("−5: worst represents own opinion" to "+5: best represents own opinion").

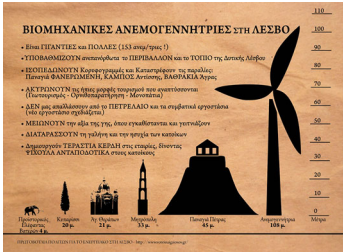| No. | Picture's description | Factor | | |
|---|---|---|---|---|
| | | A | B | C |
| 1 | Regional council meeting | −1 | −2 | −1 |
| 2 | Wind farm with building in foreground | 3 | 4 | −5** |
| 3 | Small field with horse in foreground | −4** | 1* | 3 |
| 4 | Turbine near sea | 1* | 4* | 2* |
| 5 | Nacelle with broken blades | 3** | −1 | 0 |
| 6 | Oil-powered Power plant, Mytilene | −1* | −4** | 1* |
| 7 | Celebrity singer Thalassinos | 0 | 0 | 0 |
| 8 | Cartoon character running with money from turbines | 4** | −5** | −2** |
| 9 | Turbine blade in transport | 3* | 1* | 5** |
| 10 | Row of turbines on hill ridge | 0 | 2* | 1 |
| 11 | Western Lesvos project map | 2 | 2 | 4 |
| 12 | Documentary film Windfall screening poster | 0 | −5** | 0 |
| 13 | Democratic Left party logo | −2 | −3 | −2 |
| 14 | Turbines with smoke | 4** | 0 | −1 |
| 15 | Turbine with dollar-sign blades | 2** | −3 | −3 |
| 16 | Speaker at podium (Communist party logo) | 0* | −2 | −2 |
| 17 | Group of walkers on country road | −4** | 1 | 3 |
| 18 | Beach | −4** | 1 | 3 |
| 19 | Picking up dead birds under turbine | 4** | −1 | −1 |
| 20 | Off-shore turbines and sailboat | −2** | 2** | −4** |
| 21 | Turbines in flat agricultural field | −3** | 2** | −1** |
| 22 | Turbines with people nearby and swing | −2** | 3** | −5** |
| 23 | Turbine with round bale | −2** | 3* | 2* |
| 24 | Aerial view of turbines in mountain ridge | 1** | 3* | 5* |
| 25 | Row of turbines in intense sunset light | 1 | 2 | −3** |
| 26 | Flowers with turbine in background | −5** | 4 | 4 |
| 27 | Limnos politician Vangelis Giarmadouros | 0 | −2 | −1 |
| 28 | Bird (Emberiza cinaracea) | −3** | 1 | 1 |
| 29 | University of the Aegean logo | 0 | −1 | 3** |
| 30 | Turbines with black blades on hill with wide dirt roads | 2** | 5** | −2** |
| 31 | SYRIZA party logo | −1 | −1 | −2 |
| 32 | Stacks of euro bills | 2 | 0 | −4** |
| 33 | Tourists at Lesvos Petrified Forest | −5** | −3** | 2** |
| 34 | Greek Green party logo | −2** | −4** | 0** |
| 35 | Multi-image depiction of construction damage | 5 | 0** | 4 |
| 36 | Graphic scaling turbines with local landmarks | 5** | 0* | 2* |
| 37 | Field of turbines in direct front view | 3 | 3 | −4** |
| 38 | Turbines and solar panels | −3** | 5** | 2** |
| 39 | Citizens and Wind NGO logo | 1 | −1* | 1** |
| 40 | Local politician/ professor Yannis Spilanis | −1 | −2 | 0 |
| 41 | Cartoon: "What Green development? I can't see anything through the black!" | 2** | −4** | −3 |
| 42 | Audience in meeting room | −1 | −2** | 1 |
| 43 | Lemnos map with target | 1 | −1** | 1 |
| 44 | Regulatory Authority for Energy, Greece (PAE) logo | −1* | 1 | 0 |
| 45 | Cartoon: "The installation of Wind turbines in the Lesvos municipality: Investment of the Rokas company" | 1 | −3** | −1 |
| 46 | Windmill nacelles | −3 | 0* | −3 |

* The particular image is statistically significant (i.e. it distinguishes the particular factor from others) at the 0.05 level.
** The particular image is statistically significant (i.e. it distinguishes the particular factor from others) at the 0.01 level.

outweigh/overshadow the potential environmental costs or landscape change. Stemming from their general support for renewable energy development, respondents in this category are nicknamed "Green Developers."

In examining the images that distinguish Green Developers from other factors (Table 4) one notes that, in most cases, images of completed wind parks or functioning turbines are ranked as being more representative of their opinions. All of the 13 images included in the Q-sort which feature properly functioning (on- or off-shore) wind turbines were ranked positively by Green Developers, that is, they were perceived to be at least somewhat representative of their opinions of the proposed Aegean Link project. Furthermore, nine of these 13 (positively ranked) turbine images were

**Table 3.** Images which best and worst represent opinions for Factor A: "Risk Averters."

| No. | Rank | Z-Score | Picture | Illustrative quotation (with respondent number) |
|---|---|---|---|---|
| Images best representing (ranked: +4 or +5) | | | | |
| 35 | 5 (n.s.) | 1.674 |  | Here they're building roads to get through, damaging the environment … I think something like this will happen. (11) We will have a serious, serious change of scenery … (16) This shows the damage cause by the installation of the turbines (12) |
| 36 | 5** | 1.545 |  *Graphic scaling turbines with local landmarks* | Very good … it makes people realize immediately the size differences. (4) This shows the size, the actual size of the turbines in relation to known places on our island … the people can understand the size of the turbines that we're talking about. (14) |
| 8 | 4** | 1.543 |  | [The project] will bring money, but not for everyone … only for a few people. (28) This will happen for sure … they will take the money and leave. (9) |
| 19 | 4** | 1.538 |  | When we see the turbines from far away, it looks like they are moving really slowly, but … the birds can be hurt very easily. (15) |
| 14 | 4** | 1.518 |  | This is a picture that illustrates all too well the brutal impacts that [this type of development] can have on the environment … the [Aegean Link project] will offer up similar cases [of environmental disruption]. (14) |

**Table 3.** Continued.

| No. | Rank | Z-Score | Picture | Illustrative quotation (with respondent number) |
|---|---|---|---|---|
| Images worst representing (ranked: −4 or −5) | | | | |
| 17 | −4** | −1.751 |  | Well, this won't be happening if the whole place is looking like [image 37, "an industrial wind farm"]. (7) |
| 3 | −4** | −1.692 |  | The proponents [of the Aegean Link project proposal] try to paint a romantic picture of undisturbed nature in wind parks, so I think this expresses that what they say is totally irrelevant. … it's totally misleading. (4). |
| 18 | −4** | −1.606 |  | |
| 33 | −5** | −1.802 |  *Tourists at Lesvos Petrified forest* | The logic of my placing [this image] in the negative is that it will not be like this afterwards … [we won't be able to use the petrified forest for tourism]. (15) [The Aegean Link project] has nothing to do with the development of the park, the Petrified Forest, which [however,] we think is very crucial for the development of Lesvos … if you remember that this is a UNESCO designated park, they [park and the Aegean Link project] don't go together at all, for me. (16) |

*(Continued)*

significantly more representative of Green Developers' opinions compared than other factors. Their focus on the "end-product" as far as the WF development is concerned, is further substantiated by the Green Developers' more dismissive stance towards images portraying potential impacts of the construction process. Thus, Green Developers de-emphasize the immediate impacts of construction,

**Table 3.** Continued.

| No. | Rank | Z-Score | Picture | Illustrative quotation (with respondent number) |
|---|---|---|---|---|
| 26 | −5** | −1.766 |  | They are trying to make [wind development] seem beautiful … no flowers, please! (4)<br>This is the opposite [of image 35]. The people that [show these types of images] … want to beautify the situation, to say that wind energy is a gentle and environmentally friendly form of energy. They want to say that it is compatible with the environment and that turbines can coexist next to the most beautiful flowers (12) |

Rank scores followed by: n.s.: not statistically significant ($p > .05$); **: $p < .01$.

Note: Copyright of the images rests with the original producers and the images are used herein under the principle of "fair use" (refer to: Code of Best Practices in Fair Use for Scholarly Research in Communication, http://www.cmsimpact.org/fair-use/related-materials/codes/code-best-practices-fair-use-scholarly-research-communication)

**Table 4.** Images which best and worst represent opinions for Factor B: "Green Developers."

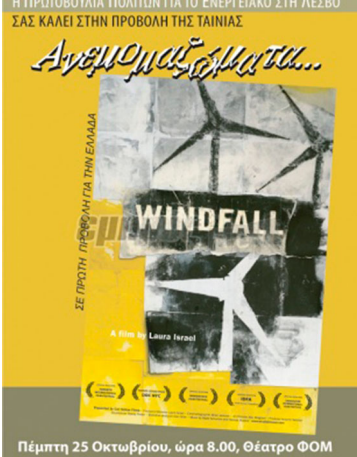| No | Rank | Z-Score | Picture | Illustrative quotation (with respondent number) |
|---|---|---|---|---|
| Images best representing (ranked: +4 or +5) | | | | |
| 38 | 5** | 1.789 |  | |
| 30 | 5** | 1.676 |  | These [types of images] show a pretty bare landscape, where you might put wind turbines … with that I can agree … to put them in areas that don't have very rich nature … there are lots of regions [on Lesvos] where you could [install turbines]. (6)<br>Where is this? It looks like [a local wind development already in operation]. (20) |
| 4 | 4* | 1.454 |  | Listen, I don't know anything about this project, but I'm for turbines … [and] green energy. (26) |

(*Continued*)

**Table 4.** Continued.

| No | Rank | Z-Score | Picture | Illustrative quotation (with respondent number) |
|---|---|---|---|---|
| 26 | 4 (n.s.) | 1.446 |  | |
| 2 | 4* | 1.321 |  | |

Images worst representing (ranked: −4 or −5)

| No | Rank | Z-Score | Picture | Illustrative quotation (with respondent number) |
|---|---|---|---|---|
| 34 | −4** | −1.712 | <br>*Greek Green Party logo* | Oh! This [party] is our problem … They don't let us make roads. (1)<br>[The Ecologists Greens] have a greater involvement with everything that has to do with environmental issues. … but I don't think that anyone is here to save us, to save the environment. (27) |
| 41 | −4 (n.s) | −1.508 | <br>*"I don't see any green development" cartoon* | This … doesn't have anything to do with the [specific] project. (20) |

*(Continued)*

with images showing the transport (#9) and construction (#35) of turbines being ranked significantly more neutrally. In lieu of this, they highlight potential gains. While Green Developers do seem to acknowledge that tourism in Petrified Forest areas (image #33) will be affected, they rank the image of the Lesvos' power plant (#6) as being significantly "less representative" of their opinions concerning the WF's effects; as it was made clear from their comments during the post-sort interviews, they feel that such power plants will be decommissioned, or utilized less, if renewable energy is developed and integrated into the local energy mix. This pattern of responses, which is

**Table 4.** Continued.

| No | Rank | Z-Score | Picture | Illustrative quotation (with respondent number) |
|---|---|---|---|---|
| 6 | −4** | −1.320 |  *Lesvos' oil-powered electricity plant* | |
| 12 | −5** | −1.881 |  *Documentary film "Windfall" screening poster* | I have seen this film but don't really agree [with its anti-wind development message]. (20)<br>I'm not interested in the parties and other organizations … that say no to wind turbines. (27) |
| 8 | −5** | −1.804 |  | This is provocative. (20) |

Rank scores followed by: n.s.: not statistically significant ($p > .05$); * $p < .05$; ** $p < .01$.

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characterized by an unwavering positive regard for images of up-and-running wind installations, suggests that Green Developers' are focused on the outcomes, rather than construction and management, of the project. As succinctly put by one respondent while commenting on his (positive) placement of an image (#4) showing a turbine by the sea, "Listen, I don't know anything about this project, but I'm for turbines … [and] green energy!"

Finally, Green Developers perceive more negatively than others the images alluding to anti-wind development interests or activities. Green Developers' opinions about the project are significantly less well represented by posters created by anti-development public information groups (#12, 45, 36) and by an image of a public informational meeting (#42); the same follows for logos of political parties (#34, the Green party logo) and non-governmental (#39) organizations with distinctly "anti-development" stances. Similarly, and in sharp contrast to the Risk Averter opinion type, images which connote exploitative relationships (#43, 8) are significantly less representative of the Green Developers' opinion.

### Factor C: Realists

Factor C accounts for 9% of the variance in responses (defined by six Q-sorts). The respondents characterizing Factor C come from all backgrounds and island areas (See Table 2) and their answers suggest that they are neither narrowly focusing on potential risks, nor especially enchanted by the green energy concept (Table 5). Their opinions contain a mix of practical consideration, hopeful positivism, and reasonable caution. These respondents seem to shy away from strong assertions about the project, and they are thus nicknamed "Realists."

Realists are distinguished from other factors by neutrality towards "extreme" visuals and deference for "objectivity." A quite clear-cut example of their emphasis on objectivity is demonstrated by their acuity in singling out digitally modified images, a trait which sets them apart from the other factors. Two images which have obviously been digitally modified to make WFs appear unrealistically dense (#37 and 2) are significantly less representative of the Realists' opinion similarly to an image clearly stylized using image modification software (#20).
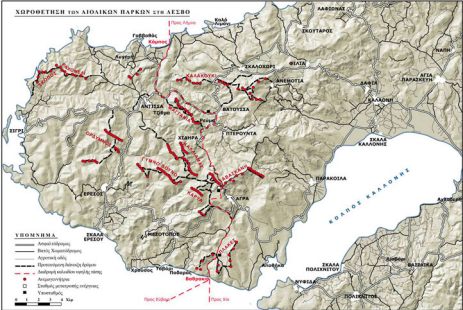
Furthermore, Realists seem to have more moderate expectations about the project. Thus, Risk Averters feel that tourism in the Petrified Forest will stop (#33) and Green Developers insinuate that the local power plant (#6) could be shut down if the Aegean Link is implemented, but Realists rank both those images as being somewhat representative of their opinion; that is, in contrast to the more dramatic views held by the other two factors, Realists seem to think that tourism will likely continue and that the power plant will stay on line: they seem aware to the objective facts that wind development is not going to occur in the specific tourist areas of the Petrified Forest and that the operation of the local power plant is in no official way linked to the Aegean Link project.

Realists acknowledge both potential benefits and practical impacts of the Aegean Link project, and are more likely to rank controversial images of impacts and actors more neutrally than the two other factors. Realists also react less strongly to the images' references of more abstract impacts and benefits. For example, Realists react more neutrally to images referencing green energy concepts (#4) and the local debate over turbine scale (#36), which polarized the Risk Averters and Green Developers. In a similarly moderate fashion, Realists place the image of a stack Euro notes (#32) as being significantly less representative of their opinions about the project while expressing concern over the magnitude and the distribution of economic benefits.

Realists also show a stronger affinity for images which are, in their opinion, more neutral and "academic," rather than political or distinctly environmental. Realists react more positively, placing it at the "neutral" column, to the logo of the Greek Green party (#34)—a party which has had reservations towards the particular development in question despite its broad pro wind-energy stance. At the same time, they rank the image of the University of the Aegean logo (#29) significantly more positively than other factors while they include the (technical and objective) project map of the development in western Lesvos (#11) amongst the visuals "most representing" their opinion.

These results set the Realists apart from both the Risk Averters and the Green Developers. Instead of assessing the visual stimuli on whether it "says" something good/bad about the project (as the Risk Averters and the Green Developers do respectively), the Realists seem to assess the "objectiveness" of the image and to use this assessment for determining their reception of the

**Table 5.** Images which best (+5) and worst (−5) represent opinions for Factor C: "Realists."

| No | Rank | Z-Score | Picture | Illustrative quotation (with respondent number) |
|----|------|---------|---------|-------------------------------------------------|
| Images best representing (ranked: +4 or + 5) | | | | |
| 9 | 5** | 1.875 |  | This is a problem [with the implementation of the Aegean Link project]. (5)<br>They want to make roads going up the mountain and say [these roads] will remain open afterwards. But what use is a road going up the mountain [to nowhere]? (23) |
| 24 | 5** | 1.756 |  | This investment will … alter the character of the landscape of the island and will damage very much [the landscape] … The mountains also have a certain place, a particular role in the Greek psyche, because until a few years ago, the Greeks lived in the mountains. [Lesvos has] mountainous region[s], so altering the character of the mountains will affect the mentality of … the inhabitants of Lesvos. So I chose this picture because it shows the [landscape] change, namely the alteration of the mountain ridges. (5)<br>This [type of turbine construction] is appropriate [for countries which have high mountains]. Here, it will happen high up in the mountains. (18) |
| 35 | 4 (n.s) | 1.745 |  | Without this [type of] work, nothing will happen. (23) |
| 26 | 4 (n.s) | 1.620 |  | I like the aesthetics of this … . I would like something like this to happen … nature and the turbines are ok together [in this image]. (23)<br>We want [in the "represents my opinion best" columns] images that show respect for the environment, but we also want projects that help us to develop, to have energy that is inexpensive and reliable, because today we have breaks in the power supply and voltage drops which burn our motors and this gives us a bad image [among tourists visiting the island]. (17) |
| 11 | 4 (n.s.) | 1.131 |  | |

*Western Lesvos project map*

Images worst representing (ranked: −4 or −5)

**Table 5.** Continued.

| No | Rank | Z-Score | Picture | Illustrative quotation (with respondent number) |
|---|---|---|---|---|
| 37 | −4** | −2.057 |  | [This is a] big park … the Rokas project will not be so big … (5) |
| 20 | −4** | −2.031 |  | This looks like a kind of utopia … a ship could not pass this close … this picture is definitely a montage [i.e. photo-editing]. (5) |
| 32 | −4** | −1.926 |  | The project will not bring this, but we want it … it is a myth that [the project] will bring money. (23) I choose this picture because, with such a project, I think when you start thinking about island development, you must first think about the human factor and after that the economic factor … the profit factor. Some think in purely economic terms. As for me, as an anthropologist, I don't think this way, not because it's not important to think about money, but [it should be thought about] after the human factor [has been considered]. (5) |
| 2 | −5** | −2.098 |  | This [WF] is too dense to be a picture of the Rokas project (5) |

(*Continued*)

particular visual "statement." As a case to the point, take, for example, images #30 (Turbines with black blades on hill with wide dirt road) and #37 (a "full frontal" image of a dense WF, which was actually Photoshop-ed© in order to increase the turbines' density). These images loaded positively

**Table 5.** Continued.

| No | Rank | Z-Score | Picture | Illustrative quotation (with respondent number) |
|----|------|---------|---------|-------------------------------------------------|
| 22 | −5** | −2.081 |  | Well what I see here is that it's basically a tourist park or something like that and wind turbines, which doesn't apply in any case to our islands … there could not be wind turbines, tourist sites, and … I even see some kids playing and a playground … all that could not be together. (5) |

Rank scores followed by: n.s.: not statistically significant ($p > .05$); * $p < .05$; ** $p < .01$.

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to both Risks Averters' and Green Developers' factors (i.e. they considered them representative of the Aegean Link project), albeit for different reasons: for the former, these images depicted the destruction of the island's landscape; for the latter, the images just showed the operational stage of the development. Realists, in contrast, ranked both images negatively, judging them as un-representative of the actual development plans. As one of the Realists' respondents, during his post-sorting interview, commented about image #37, "[This is a] big park … the Rokas project will not be so big … " (Table 5).

## Discussion and conclusions

This paper set out to describe and draw conclusions about the public viewpoints concerning the visual components of the debate around a wind farm development, a topic never researched before. Addressing this topic is important because images communicate meaning and are used as persuasive devices by the different sides in a debate, in a way which parallels verbal statements. However, unlike verbal statements, images do not have "an explicit propositional syntax" (Messaris & Abraham, 2001, p. 217) for articulating cause-and-effect relationships; thus what images (are supposed to) mean depends on the viewer's interpretation. This is what our research sought to clarify: what is the underlying nature of visual opinions held by the public in the context of a WF development conflict? Answering this will offer us a more comprehensive understanding of the local discourses around WF conflicts, since the verbal and the visual parts of the discourse over a particular issue need not be necessarily the same. Furthermore, it has clear implications for any wind development project, since images are routinely used for making people "see" how a particular project will "improve" or "degrade" their local environment, their locality and/or their livelihoods.

We found that some image types have little utility for distinguishing among the various viewpoints. All person-portraits and most party logos were ranked similarly across factors (i.e. they did not distinguish between the factors), and were usually ranked near the "neutral" (central) column of the Q-sort (see Table 2). In the case of political/public figures, this was largely due to the fact that they were either considered to be ineffectual or they were not recognized by the respondents. In the case of political parties, their placement seems attributable to a mixture of political

preferences and a difficulty in deciding the party's position and/or relevance. Only a single political entity's photo was found to distinguish between all three factors, that of the Greek Green party (#34). These results corroborate the findings by O'Neill et al. (2013) on the reception of photos of political leaders and public figures in the climate change imagery around the world: respondents argued that they could see little connection between these people (photos) and climate change (p. 419). This seems to be also the case for the Greek public figures and organizations and the WF development, with the exception of the Green party, a (political) entity which, be being widely recognizable as related to the environment, was considered as "relevant"—and thus was evaluated —to the particular environmental debate.

Moving on to those images which do distinguish between the different points of view, we found that, similarly to verbal Q-analyses of WF conflicts, the locals' viewpoints include one consisting of images which stress the potential risks, costs, and negative impacts of the proposed WF (the Risk Averters' factor). Also similarly, a second viewpoint consists of images suggesting the promise of clean energy and sustainability (the Green Developers' factor). Our results suggest that for these two stances the reception of the concourse's visual stimuli is a case of preaching to the converted, since the receivers welcome the visual messages *only* to the extent that the various images seem to agree with their positive (or negative) stance towards the WF development, as it is clearly underscored by the comments accompanying the image rankings (see Tables 3 and 4). In effect, when confronted with the visual stimuli, these two perspectives seem to focus primarily on the visual's underlying "causality," to ask themselves, "does this image say/mean something which is in line with my personal (positive/negative) idea about wind farms?"—and this *generic* rule-of-thumb settles the issue of agreeing (or not) with the particular image.

However, our analysis also revealed a third perspective for which the reception of the visual message does not depend on the latter's (positive or negative) *depiction* of the WF development but rather on whether the visual statement *itself* is deemed as trustworthy or not. As we have argued in the Introduction, in the case of a *proposed* WF development, the absence of existing and case-specific images would necessitate the (greater) use of proxy-images as visual statements, whose "analogy" (i.e. a real representation of reality) and "indexicality" (i.e. a relevant indicator of reality) (Messaris & Abraham, 2001) to the would-be-project also have to be determined by their audience. The third factor identified in this research seems to place particular emphasis on these two parameters of the visual concourse, and were thus were nicknamed as "Realists." As it is evident from their comments on the images' sorting (see Table 5), the Realist view (Factor C) is *not* just the middle ground between Risk Averters and the Green Developers. Rather, Realists approach the images themselves with a heightened degree of scepticism, and their rational over the images' implicit nexus/meaning is fundamentally different from the other two Factors. Instead of pondering on whether "this or that image is insinuating a 'positive' or 'negative' appraisal of WFs," Realists seem to ask themselves "to what extent is this or that image 'relevant' or 'real' regarding the *actual* project on western Lesvos?"—and it is this *particular* veracity and relevance which prompts them to accept (or not) the image, independently of their personal opinions about the project itself.

Our results raise two obvious questions: Do the identified viewpoints relate to some of the respondents' characteristics, and, are these results generalizable? Concerning the first question, Q-method does *not* result in data that is interpretable in relation to the proportion or characteristics of people holding a particular view (see Danielson, 2009) while the fact that certain types of individuals may be loading predominantly to one of the identified factors is not proof that (the majority of) this type of individuals will hold a similar view (see Cuppen, Breukers, Hisschemöller, and Bergsma (2010) for a recent demonstration of this point regarding the issue of energy from biomass in the Netherlands). Concerning the second point, Q-method's results are replicable (and thus generalizable) in the sense that "the same condition of instruction will lead to factors that are schematically reliable—that is, represent similar viewpoints on the topic—across similarly structured yet different Q samples and

when administered to different sets of persons" (Van Exel & de Graaf, 2005). In other words, different groups of the same population (P-sets) will return similar viewpoints vis-à-vis similar groups of statements (Q-sets). Yet what about a different privately owned, onshore WF development, say in another place or even in another country: would the results be similar? The simple answer is that one cannot know beforehand, and the results of this study cannot offer us such a clue. In the words of Watts and Stener (2012),

> Individual Q studies are probably better suited to the exploration of *specifics*; the viewpoints of specific people, specific groups, specific demographics, or the viewpoints at play within a specific institution. (p.54, emphasis in the original)

Thus, assessing the visual viewpoints around a different WF development would have to start by establishing the visual concourse of that, *specific*, development which may, or may not, be similar to the one identified in this study. Yet, even ascertaining the existence of a similar bunch of visual statements is no guarantee of a similar interpretation(s): as case to the point consider a recent study by van Exel, Baker, Mason, Donaldson, and Brouwer (2015) where the very same (verbal) Q-set (on health care priorities) was evaluated by respondents in 10 European countries, and returned 29 (partially correlated) national "points of view" (i.e. factors). In short, Q-method's strength is in capturing "deep" subjective data about the worldview of a particular individual or group in a way that makes it amicable to statistical analysis and intra-group comparisons. A Q-method study provides an organized method for *capturing subjective data in quantitative form* and using these data to generate a statistical description of a given subjective reality (which would otherwise be assessable only through tedious quantitative descriptions). When conducted by researchers with a deep understanding of the local context, Q-method statistical data can be used as a quantitative jumping-off point for making qualitative inferences about a particular discourse.

In conclusion, while more research is needed for establishing whether this holds true in other WF developments, this study established that visual statements in this particular WF conflict are processed by the public in two ways: one way focuses on whether the image is a favourable (or not) depiction of the project, the other on whether the image is an accurate depiction of the project. These results provide some food for thought concerning the potential role of visuals in the debates around WFs development in particular, but also concerning the public's evaluation of visuals in general. In any kind of a debate, both side use a host of statements *and* images which have the same overarching aim—to persuade the public that this or that side's version of the reality is the "true" one. Yet, for projects-to-be, such as a proposed WF, no actual visual devices are in place and both sides are forced to use proxies or secondary material from similar, existing, or related cases in order to help the public see into the future. Our study offers evidence that for a segment of the public these visual stimuli are evaluated based on the receiver's existing stance towards the project, thus arguably allowing the visuals lesser (compared to the—accompanying—verbal messages) elbow-space for having a distinct/different impact on the recipient. Nevertheless, some others critically evaluate the visual messages based on the latter's objectiveness. For this latter group, trying to press a point through inaccurate, misleading, or, out-of-proportion promotional visual stimuli reduces the visual message's reliability and, thus, may ultimately undermine the corresponding discourse's persuasiveness and appeal.

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