The Power of Images in Environmental Governance

A Review

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INTRODUCTION

The term "image", as defined by msn Encarta, encompasses "an actual or mental picture**:** a picture or likeness of somebody or something, produced either physically by a sculptor, painter, or photographer, or formed in the mind" (2009). Since an image can be formed into a physical entity or into a mental picture, it is important to distinguish the psychological and physical aspects of an image and their differing methods of influence. Additionally, it is important to keep in mind that images are open to a subjective interpretation by the viewer. As a result, the intended purpose of an image is not always explicit, making the study of imagery even more complex (Gamson et al. 1992). Despite of this complexity, images have been considered a powerful tool in the guidance and determination of both individual and group action throughout history (Cooperrider et. al. 2001).

However, as technology has advanced and images are better able to mirror reality, their power has also increased. "Unlike handmade images, such as drawings or paintings.., photographs and images on video are typically seen as direct copies of reality. This quality strengthens the viewer's illusion of interacting with real world people and places....and serves as evidence that what is being shown really did happen" (Messaris 2002) . This power to simulate reality has prompted many scholars to study the psychological effects of images used in advertising, the media, and in governance on the memory, emotions, and behavior of everyday citizens. Additionally, mental images, formed in the minds of individuals, have also been shown to produce large effects on individual and organizational development, prompting image-researcher Boulder (1959 cited in Schafer 1997) to note that, "it is always the image, not the truth that immediately determines our behavior".

This paper's aim is to provide an overview of the current research available on the role of images on individuals in various sectors of society, focusing primarily on the effects on memory, emotion, and behavioral change and leading up an overview and analysis of the current and potential role of images in environmental governance.

MENTAL IMAGERY, ORGANIZATIONAL DEVELOPMENT, AND POLICY PREFERENCES

Mental images, which are those that one forms of ones self and ones own potential, as well as of that of others and of organizations, are also important for moving society forward (Cooperrider 2001). After all, these images are so powerful that Cooperrider remarks that even our "reality is conditioned, reconstructed, and often profoundly created through [these] anticipatory images, values, plans, intentions, [and] beliefs". With such a strong potential effect of these images, it is no wonder that a significant amount of research has been done on the topic.

Although there are a number of competing theories on where and how mental images are formed and their exact definition, Richardson (1983) (as cited in Cooperrider 2001) provides a good description of the term: "Mental imagery refers to all those quasi-sensory or quasi-perceptual experiences of which we are self consciously aware and which exist for us in the absence of those stimulus conditions that are known to reproduce their sensory or perceptual counterparts". The power of mental imagery has been shown through various studies on the placebo effect, the productivity of prejudged individuals (positive vs. negative), and how positive/negative affectivity can result in the respective variations in individual and organizational performance (Neck & Manz 1992). Specifically, it has been found that negative affectivity often leads to feelings of helplessness and hopelessness, while positive affectivity

removes one from self-oriented preoccupation, increases focus on the potential good in the world, builds upon feelings of solidarity with others, and motivates one to act in more altruistic and pro-social ways (Brief and Motowildo1986 as cited in Cooperrider 2001). The power of positive imagery is arguably a major factor in the formation and implementation of every action (Cooperrider 2001), allowing the underlying images held by a civilization or culture to have an enormous influence on the fate of that civilization or culture (Morgan 1987 as cited in Cooperrider 2001). Although the creation of positive imagery can be difficult, through dialogue new knowledge and new images of possibility are constantly being made available (Cooperider 2001), enabling managers and organizations to continually improve and enhance their employees' and organizational moral, productivity, and development.

In addition to aiding in organizational development, images of "self" and "others" have been shown to shape attitudes and behaviour in public policy (Boulding 1993 as cited in Schafer 1997). An example of this is in dealing with international policy and perceptions of other nations in conflict (Schafer 1997). Since cognitive filtering is utilized to simplify situational information to a level that is reasonable to deal with, images play a role in determining the information utilized, can lead to the distortion of the situation, and thus impact decision-making. This occurrence was first thoroughly analyzed in the 1970's by M. Cottam, who noted that leaders tended to "behave perceptually in patterned ways" (Cottam 1977 as cited in Schafer 1997), from which he devised the Perceptual Inferential Scheme. He hypothesized that how a leader perceived his/her relations with another country, and thus how he/she delegated with that country, is based on the differing levels of perceived threat/opportunity in interacting with that country and similarities/differences in culture and in capability between the two countries. Participants were given information about historical interaction with and cultural information

about a fictional country and ask were asked to develop policies regarding interaction with that country. The results demonstrated that when the historical relationship was perceived as negative and the cultural differences were seen as high, more negative policy initiatives were formed. Although there is still debate on whether interactions with a country cause image formation or vice versa, Schafer's study demonstrates that the image of perceived historical relationship and cultural differences have an effect upon the attitudes and behaviour of one country towards another in a conflict situation (Schafer, 1997), further supporting the role of mental images in influencing attitudes and behaviour.

However, as was previously mentioned, mental images are not the only types of images that exist or that have the power to influence human cognition, psychology, and behaviour. Pictorial, or physical, images have also been shown to have this effect as well, and will be elaborated on in the coming sections.

THE EFFECTS OF PICTORIAL IMAGES ON MEMORY

Evidence has shown that pictorial images are easier to remember than words alone. One model used to explain this is the dual coding model, which states the enhanced ability to remember pictures, also known as the "picture superiority effect" is a result of an increased number of memory codes (verbal and imaginable) associated with pictures (whereas words only form verbal codes). This increase in alternative retrieval codes has been shown to be directly related to the likelihood of retrieval of a pictorial memory (Anderson and Reder 1979 as cited in Unnava & Burnkrant 1991). Additionally, as images closely mirror reality, it is likely that they are more easily encoded in the brain than verbal information, which must first be encoded into its symbolic meaning before it is able to produce an effect (Newhagen and Reeves 1992).

Additionally, already in 1972 the evidence supporting the ability of images to enhance memory was so extensive and convincing that Stanley Collyer and his colleagues chose to study which types of images enhance recall the most, in search for the most useful mnemonic device. By utilizing triplets of words (noun – verb – noun) associated with one another either in a "plausible" or "bizarre" way, the participants were asked to form images to remember the triplets. The study found that images formed from "plausible" word combinations were better recalled than those, which were only "bizarrely" related. The study was also repeated in a group using verbal strategies, to ensure that the increased memory of the word group was due to imagery used and not verbal devices. "Plausible" images formed were still remembered more vividly than "plausible" verbal strategies. The authors attributed their results to the likelihood that a more complete mental image, or perhaps multiple images, could be formed from the triplet, increasing recall capacity (Collyer et al. 1972).

The superiority of images in enhancing recall is an important attribute contributing to their strength as a visual tool in all realms of society. This reality is utilized in the media, advertising, organizations, and various campaigns in order to increase the likelihood that the general public will remember one's product or message (Askew & Wilk 2002, DeLuca 1999, Neck & Manz 1992).

Furthermore, and leading into the next section, the emotional response of an individual to an image also affects the memory of that image. This was demonstrated in a study conducted by Cahill and McGaugh in 1995, where subjects were shown two slide-show presentations. One presentation depicted an emotionally arousing story, while the other produced a neutral story. Two groups were formed, one that simply watched the presentation, and one that watched, while listening to emotional narration. Long term memory of the presentations was determined by

testing the subjects' retention of the stories two weeks later.   In both test groups, the subjects remembered the emotional slide show the most, with the narration group remembering the story in the most detail. As a result, one can conclude that still and moving images that elicit an emotional response are more easily remembered and therefore likely have a greater affect on individuals than do emotionally neutral images. It has even been discovered that these images are processed through a different part of the brain, the Amygdala, than neutral images (Hamann et al. 1999), further separating the processing of emotional versus neutral images. Moreover, emotional images, primarily negative ones, have been found to affect memory prior to, during, and following the viewing of that image. In a study testing memory before, after, and during a negative-image-enriched news cast, Newhagen and Reeves (1992) found that images shown before negative-images and verbal narrative information received during the display of these images were more likely to be forgotten, while information following the negative-image display was more easily recalled. This difference in memory was attributed to an increased level of arousal provoked by the negative images, needed to incorporate the images into ones memory to, evolutionarily speaking, help one learn from the information provided, in order to best adapt to possible future threats or environmental stressors. Newhagen and Reeves additionally found that the compelling images were remembered seven weeks later, indicating that with compelling (emotional) images, visual information was better retained than verbal information.

THE EFFECTS OF PICTORIAL IMAGES ON EMOTIONS, BEHAVIOR, AND SOCIETY

In addition to increasing memory to allow one to utilize information learned to better fight against a threat, emotional images guide behavior in other ways as well. The way in which

images are formatted can affect the emotional response of the viewer. For example, "iconic representations of people's physical appearance and interpersonal behavior [are used] to reproduce real-world visual cues that are associated with a variety of emotional responses" (Messaris 2002 throughout paragraph). For example, devices such a low/high angles, close-ups, color, and frontal/reverse orientations can be utilized to enhance one's feeling of engagement with the image, draw out feelings of inferiority or superiority, or elicit trust, curiosity or other emotions (Rafaeli and Vilnai-Yavetz 2004). Furthermore, product placement in popular movies or TV shows can be used to connect the feelings provoked by a scene during which the product is displayed with the product itself. Another strategy used in advertisement is the usage of subliminal messages. Subliminal messages are those that are not consciously received. Tachistoscopic subliminal messages involve a quick flash of information across the screen, while subliminal embeds are well hidden into the image itself. Interestingly enough, although not consciously noted, the messages hidden in images through these means are received and have been shown to influence behavior. The most well-known example is that of quickly flashing "buy popcorn" and "drink coca cola" in 1957 movie theaters, which launched a significant increase in both popcorn and cola sales that year (Messaris 2002).

In addition, advertising is a good example of utilizing emotions to motivate individuals to purchase a product, in particular by portraying products as a means to achieve personal happiness (Askew & Wilk 2002 throughout paragraph). Although multiple surveys have shown that material possessions have very little to do with feeling content, market society is based upon the idea that satisfaction should be achieved through goods and services, and institutions and structures serve to channel public behavior in that direction. While this image of happiness is connected to a particular product, the item itself does not actually provide happiness and leads to

the confusion of "having" and "being". This sometimes leads to what one has defining who one is. The danger of connecting goods with happiness, Askew and Wilk argue, is three-fold. First of all, such an image-commodity system leads to the inevitable problem of providing enough goods for everyone, as it is widely accepted that unlimited economic growth is impossible and unsustainable. Secondly, the use of images to promote this ideal, and public acceptance of images as facts, leads to a loss of substance (especially in politics) and self-discovery, allowing superficial claims and ideas to be accepted as facts. Thirdly, the knowledge of proper image use and representation is reserved to only a few parties, who are therefore able to have a great influence on society. Askew and Wilk argue that, "images are the dominant language of the modern world…[and] the struggle to reconstruct the existence and meaning of the world of substance has to [therefore] take place on the terrain of a [more democratized] image-system" (334).

As image set-up and content has been demonstrated to elicit emotional responses in viewers, affect behavior, and have a major influence on society, it would be interesting to investigate how these effects of images can best be utilized in the environmental policy sector. The next section serves to explore the topic in further detail.

THE POWER OF IMAGES IN ENVIRONMENTAL GOVERNANCE

As in every other field, images serve as a means to impact individuals in a way that will result in their support of a desired goal/cause, resulting in a favourable change in their behaviour towards that cause. Luckily in the environmental sector, "The potential of visual communication to accelerate social learning and motivate implementation of the substantial policy, technological, and life-style changes needed [to mitigate climate change and other environmental

problems], has begun to be recognized" (Sheppard, 2005). In fact, images have already been heavily and successfully used by the environmentalist movement (Sheppard, 2005). Visual media, particularly "posters, illustrated publications, greeting cards, and videos, as well as regular TV and print adds (Bower 1991 as seen in Messaris 2002) have all been utilized by the environmental sector.

Stephan Sheppard (2005) suggests that a good example of seizing such an opportunity is to create images which depict how landscapes will likely change as a result of climate change. This would be a quick and effective way to increase public awareness of the topic and to hopefully motivate people to adapt their behaviour and push for policies that would implement measures to combat climate change. Although there are few examples of using visualizations for this purpose, and the ethics of intentionally playing on ones emotions are questionable, Sheppard (2005) found that the use of such images is justified and could prove to be extremely effective in communicating the urgency of climate change. Further studies investigating this concept are also currently underway (Nicholson-Cole 2002).

In another study testing the potential power of images in encouraging environmentally-friendly behavior, Winett and his colleagues (1982 as cited in Gardner & Stern 1996) discovered that after viewing a video presenting energy-saving as a positive action and displaying how one could best save energy, people were shown to use less energy. Both this experimental group and the control group attended a 45 minute meeting, in which energy-saving techniques were also shown to them. The participants who saw the video used 10% less household electricity directly following the experiment, and 19% less three weeks later than the control group did. Interestingly enough, these results continued through the summer (10% savings) and into the following summer (5% savings), suggesting that the images in the video compelled the

participants to mend their energy usage behavior over a long period of time (Gardner and Stern, 1996).

Kevin Michael Deluca (1999) elaborates on the idea that images are able to influence people's decision making within environmental organizations, providing a special focus on the NGO Greenpeace. Greenpeace, arguably the world's first environmental organization, and definitely the first to utilize image events as the "primary form of rhetorical activity" (Deluca 1999), has grown into one of the largest environmental organizations in the world. The realization that image events could have a profound effect on environmental policy occurred in 1975, when two Greenpeace activists placed themselves in a small boat in between the Russian whaling boat, "Vlastny", and a whale. The whalers proceeded to shoot the whale despite of the activists close proximity. However, with the entire event on video, the organization distributed the video to major newscasters such as CBS, ABC, and NBC, eventually leading to a ban in commercial whaling. Deluca goes on to explain that "these tactical image events have driven numerous successful campaigns". In his book "Image Politics" Deluca goes on to give countless examples of similar organizations using images, particularly image events, to "transform the way people view their world" (Deluca 1999).

In addition to environmental organizations utilizing the media to change the beliefs and behaviors of the public, the media itself is a huge force for environmental governance. As news stories are viewed by huge masses of people and are visually "choreographed to underwrite or help authenticate the words and deploy a crafted succession of iconic and symbolic images" (Allan et al. 2003), the images displayed during stories about environmental degradation can be very effective in stirring up environmental sensibility and emotions and aid in symbolizing the overall scale and impact of environmental degradation. As with the concept of governance itself,

images can be utilized in a variety of sectors to aid in changing attitudes and behaviors towards sustainable development and environmental governance (Nicholson-Cole 2002).

CONCLUSION

The term "image" encompasses a broad scale of mental and pictorial visions and visual aids (msn Encarta 2009). The effects of an image result in an even greater array of influence, ranging from effects on memory, emotion, behavior, interactions with others, and views on society (Askew & Wilk 2002, Newhagen & Reeves 1992, Deluca 1999). Although there is currently little research on the specific role of images in environmental governance, it is clear through the power of images in general, prompting Askew & Wilk (2002) to deem them as "the dominant language in the modern world", has a huge influence on the local, national, trans-, international, and non-governmental scale and influences relations between each of the different levels (Deluca 1999, Askew & Wilk 2002). The research that has been conducted concerning the effect of images on provoking behavioral changes towards sustainability has provided the public with a preview of the research that is to come and an insight into the overwhelming implicit and potential power images have to aid in climate change mitigation, adaption, and environmental protection (Schafer 1997, Deluca 1999). Thus, images should not be underestimated or taken for granted. More educational programs teaching the best methods to utilize and formulate images should be implemented to give more people a voice in impacting the ideals, behaviors and decisions of tomorrow (Askew & Wilk 2002).

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