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Five lessons to guide more effective biodiversity conservation message framing

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Abstract

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Because the conservation of biodiversity is a social and political process, conservation policies are more effective if they can create shifts in attitudes and/or behaviours. As such, communication and advocacy approaches that influence attitudes and behaviours are key to addressing conservation problems. It is well established that the way an issue is 'framed' can influence how people view, judge, and respond to an issue. Furthermore, responses to conservation interventions can be influenced by subtle wording changes in statements that may appeal to different values, activate social norms, influence a person's affect or mood, or trigger certain biases, each of which can differently influence the resulting engagement, attitudes and behaviour. We contend that by strategically considering how conservation communications are framed, they can be made more effective with little or no additional cost. In this article, we provide an overview of key framing considerations as five 'lessons' to help communicators think strategically about how to frame their messages for greater effect.

Introduction

Building community support for biodiversity is crucial for achieving successful conservation outcomes. We know that how we talk about or 'frame' information can have a big impact on the way people understand it, and how they respond to messages (e.g. Kahneman and Tversky 1984; Entman 1993). This has been long understood by advertisers and politicians and is increasingly appreciated by ecologists and conservation scientists (Kidd et al. 2019a).

'Framing' refers to the way an issue is described or how a problem is conceived, articulated and approached and can relate to various aspects of the communication; from the semantic (e.g. referring alternatively to 'global warming' or 'climate change' (see Lakoff 2010; Schuldt and Roh 2014)); to the use of different descriptions for fees (e.g. 'levy' versus 'tax' or 'surcharge' versus 'convenience fee'); to the framing of entire issues (e.g. alternatively framing climate change as an environmental issue, a public health issue or a national security issue (see Myers et al. 2012)).

Although 'framing' defies precise definition, different frames serve either to emphasize or obscure

different aspects of a given reality. Because people respond differently to different frames, there is opportunity for those who seek to promote conservation to strategically consider how they frame their messages to be more effective for their target audience.

Much scientific communication, including within conservation, has assumed that people will adopt the targeted behavior if they can simply be informed about the benefits of that behavior. This perhaps reflects the instinct of conservation (and other) scientists who, being trained to follow the data, assume that facts will 'speak for themselves' (see Nisbet and Scheufele 2009 for a discussion of this 'deficit' model in the context of science communication). This approach has limited utility given that human behavior is not strictly rational but results from the interaction of numerous factors, including a person's values, attitudes, relevant social and personal norms (e.g. Azjen 1991) and other contextual factors (Steg and Vlek 2009). This understanding is increasingly being used to inform the way government and business seek to influence specific behaviours through so-called social 'nudges' (Thaler and Sunstein 2008; Akerlof and Kennedy 2013)) and 'behavioural insights' more broadly. We contend that by considering key aspects of 'framing' when communicating about conservation, that conservation scientists and practitioners can easily leverage this knowledge to enhance the effectiveness of their conservation messages.

While framing has been considered in health promotion campaigns (see Keller & Lehmann 2008 for a meta-analysis of framing approaches in health communication) and increasingly in energy and water conservation (e.g. van de Velde et al. 2010; Steinhorst, Klöckner and Matthies, 2015), there are fewer studies specifically related to biodiversity, although this is a growing area of research (e.g. Verissimo et al. 2011, Verissimo 2019). And although there exists good general information on designing communication campaigns (for example www.resource-media.org), including for engaging people in conservation (e.g.

<https://cdn.naaee.org/sites/default/files/eeopro/resource/files/toolsofengagement.pdf>), these are broad and seek to cover communication strategies as a whole, providing only limited guidance on

message framing itself. The Nature Conservancy has produced some 'recommendations on how to communicate effectively to build support for conservation' (Metz and Weigel 2013), based on polling data in the US context. This provides some good advice for how to (re)frame conservation issues, although the identified 'rules' are likely to be both contextually and temporally specific.

While valuable, this information is not in a form easily accessible for ecologists, conservation scientists and others to apply to their communications (Bekessy et al. 2018). The goal of this paper is to articulate key framing considerations identified from previous research across relevant disciplines (including communications, behavioural sciences and conservation), and to make them easily accessible by conservation researchers, practitioners and others who seek to communicate effectively about conservation (herein 'conservation communicators').

Here we provide a short introduction to framing and present five 'lessons' to help guide conservation communicators to think strategically about framing their messages for greater effect. Because framing is so dependent on context, it is difficult to synthesize any absolute rules that can be applied across all contexts. However, there are key considerations that are always worth bringing to your strategic message framing. These provide good general heuristics for effective framing, but should always be considered in light of the given context and not be followed blindly. We have outlined key considerations for the application of each lesson below, although not all will be relevant in every circumstance. These will be helpful to all who seek to communicate about conservation with influence, even those who may not seek to actively use framing, as it is necessary to be aware of framing effects in order to avoid inadvertently creating counter-productive effects.

Lesson 1. How you say something can be as important as *what* you say

The term 'framing' is used differently across disciplines (Cappella and Jamieson 1997; Druckman 2001), but is generally used to refer to the way that emphasizing different aspects of the world

influences how people understand and respond to information. For example, a glass half-full and a glass half-empty are alternative ways of describing the same glass of water, but each emphasizes a different aspect of the 'reality'. Almost anything can be the subject of framing, including situations, attributes, choices, actions, issues, responsibility and news (Hallahan 1999). Frames influence people's preferences "because a substantively different consideration is brought to bear on the issue at hand" (Druckman 2001, pp 235) (see Fig. 1 for an illustration of framing).

Social surveys, for example, have demonstrated that minor differences in phrasing can result in significantly different answers. When asked "How long was the movie?", the average response of movie-goers was 30% higher than when asked "How short was the movie?" (Harris 1973). While some may be tempted to dismiss these effects as the simple artefact of leading questions, their influence can be far from trivial. For example, when asked "Do you think the US should allow public speeches against democracy?", 62% of respondents answered negatively, but when the same question was alternatively framed "Do you think the US should forbid public speeches against democracy?", only 46% answered in the affirmative (Rugg 1941). Although answering 'no' to the proposition in the first question is equivalent to answering 'yes' to the second, many fewer people supported the proposition when framed in terms of a *prohibition* than as a *permission*. This demonstrates the potential influence that alternatively framed, yet objectively equivalent, language can have on people's response to information. Words and phrases used to deliver information are more than stylistic considerations.

Framing is not limited to generating preferences between differently framed choices. For example, appeals that emphasize personal benefits of taking climate action (e.g. lifestyle and quality of life improvements) rather than the need for making sacrifices (e.g. drive less, use less power) were associated with increased engagement and behavioural intentions (Gifford and Comeau 2011). That the way an author frames information can influence how it is understood by the audience is seen in the way politicians frame issues to serve their own agenda. For example, President Obama's claim

that opening up new areas to offshore drilling “will move us from an economy that runs on fossil fuels and foreign oil to one that relies more on homegrown fuels and clean energy” (New York Times 2010) frames an environmentally-unfriendly policy (offshore drilling) as being instrumental to a clean energy strategy.

‘Framing’ can also refer to the way issues are conceptualized (Zhou and Moy 2007) and the framework with which people understand the world (Goffman 1974). Such frames are routinely manipulated through the deliberate actions of political and media ‘elites’ for their own means (Entman 1993; Hallahan 1999; Lakoff 2004), and are generally shaped over a long period of time (Lakoff 2010).

Because all information necessarily exists in some kind of a frame, there is no option to simply avoid framing. This means that when we communicate about conservation, we can either try to be strategic about how we frame messages, or we can continue to be uninformed about framing and persevere with less effective messaging.

[Fig. 1 about here]

Lesson 2: Emphasize the things that matter to your audience (not necessarily the things that matter to you)

Messages can frame issues to strategically engage different audiences and to achieve different goals.

Typically, a message should be tailored for the audience and framed in a way that is most likely to resonate with their interests or concerns. Just because *you* care about protecting the habitat of a threatened species doesn’t mean that your audience will, but other aspects of the issue may resonate with your audience (e.g. retaining natural areas for human recreation or wellbeing).

Strategically framing a message therefore includes identifying the target audience, and how to best engage them, being clear about what you want the audience to do once you have engaged them, and understanding who the best messenger could be for a particular audience (This is useful for any communication and does not relate specifically to framing).

Identify your target audience

A central principle of effective communications is the clear identification of the context and audience (e.g. Noar 2006). Particularly relevant to framing is a consideration of what is likely to engage or motivate the intended audience and how that audience will be reached. In conservation, the goal may be to mobilize committed supporters, or raise awareness amongst the unengaged; other times it will be to win over those who are inherently antagonistic to conservation.

Unfortunately, there is rarely one frame to suit all of these situations.

While it is tempting to think that one might craft a single perfect message to be broadcast to positively influence everyone simultaneously, this is naïve. Most audiences will comprise a broad range of people, and thus messages may be more effective if they are tailored to the different interests and needs of the audience. Audience segmentation, a process in which demographic information (e.g. age, gender, income, etc) and psychographic information (e.g. attitudes, interests, opinions etc.) is used to divide the general public into discrete and uniform groupings to facilitate communication that best matches each subgroup, is a commonly used approach, particularly within marketing (see Maibach, Roser-Renouf and Leiserowitz (2009) for an example of market segmentation for climate change and Verissimo et al. (2014) that uses segmentation to prioritise the selection of a bird species as the flagship of a campaign). Where a communication is constrained to a single mode of broadcast or dissemination, communicators should think carefully about the audience with whom they most wish to reach and influence, and frame it with that group in mind.

Understand what you want your audience to do

In the context of biodiversity conservation, communication and advocacy is sometimes about providing information and seeking to influence attitudes over time and is not always about motivating a particular behaviour or choice. Often the goal will be to generate popular support or acceptance of particular policies or interventions, or to help make people more receptive to future

messages targeted at a particular behaviour. To most effectively frame your message, you should first ensure that you have a clear idea of what you are trying to achieve with your communication.

Consider what to emphasize (or not) to engage your audience

Perhaps the most intuitive approach is to highlight (or omit) those attributes that will appeal to (or turn-off) an audience. The environmentally framed marketing of hybrid vehicles such as the Toyota Prius provides a good example. By emphasising the environmental benefits of lower fuel consumption, and not the greater energy required to produce the hybrid drive system, these can be framed as an environmentally responsible choice to an audience with an existing environmental concern. Other audiences may be financially constrained, and therefore more likely to resonate with messages that emphasise the reduction in fuel costs. This highlights the importance of understanding who a message is aimed at and framing it accordingly. Strategically considering audiences in this way is not often done well in conservation, where all too often messages are pitched primarily to those who already support the cause (e.g. Kusmanoff et al. 2016). Interestingly, it seems that the distinctive shape of the Prius was intentionally (and successfully) devised to appeal to environmentally conscious consumers who also wanted to make a public statement about their 'environmental bona fides' (Sexton and Sexton 2014).

Tailoring a message to different audience 'segments' is useful because different audiences typically respond differently to different frames. Where it is not possible to target individual audience segments with tailored messages, the strategic approach may be to seek a frame that avoids eliciting a counter-productive response within any audience segment. For example, Myers et al. (2012) found that framing climate change as a national security issue resulted in backlash from an audience already dismissive of climate change. In contrast, framing climate change as a public health issue and emphasizing the benefits of action was effective across numerous audience segments.

There are many ways to segment an audience, but a useful starting point can be to consider the things an audience values. Broadly speaking, people tend to act in ways that either maximize their own payoff (i.e. they are motivated by self-interest), or maximize the payoff to society (i.e. are motivated by altruism) (Garling 1999), and in the context of pro-environmental behaviour, to maximize payoff to the biosphere (i.e. an environmental motivation) (De Groot and Steg 2007). Considering an audience segmented on this basis is likely to be helpful for framing conservation messages, because many of the behaviour changes advocated in conservation are about sacrifice. Messages that motivate people to consume less are important (Schultz 2011), but likely to be less effective for a self-interested audience. Strategically framing a message to highlight personal benefits as opposed to social or environmental benefits may help engage such an audience more effectively (Kusmanoff et al. 2016).

Emphasis of one type of value can suppress opposing values (Maio et al. 2009); for example the often 'sacrificial' actions required to promote biodiversity conservation (and environmental protection more broadly) may be harder to promote when competing self-enhancing motives (e.g. pursuit of pleasure, wealth, etc.) are activated (Maio et al. 2009). Because of this, some environmental advocates argue that communicators should generally avoid making self-interested appeals at all (e.g. Blackmore et al. 2013). A useful starting point to considering how to engage different segments about biodiversity is provided by Christmas et al. (2013).

Consider the messenger

There's much evidence that the weight we give information is influenced by the characteristics of the messenger (Dolan et al., 2012). This can occur both consciously and sub-consciously. A common example of a conscious judgement is the way politically contentious issues often evoke an 'us versus them' attitude where *who* says something is more important than *what* is said. People who strongly support one side will simply not engage with the information presented by the other side. This is not limited to politics and can occur especially where there is a miss-match in identity and values

between a messenger and an audience. However, even when you successfully engage an audience, the more subtle **messenger effect** can influence how people perceive the quality of the information, based on judgements of the messenger's credibility, rather than the content of the information (Kassin 1983). Its therefore important to think about how your target audience will judge a message that comes from you or your organisation, and whether it might be possible to partner with another person or organisation in order to better engage your target audience (See Dolan et al. (2012) for a useful and succinct summary of messenger related factors that influence the judgement of information).

[Fig 2 about here]

Lesson 3: Use social norms

Social norms have successfully been used to promote a range of pro-environmental behaviours (Farrow Grolleau and Ibanez 2017). Social norms are the informal rules of 'normal' behaviour within a particular social group and can strongly influence behaviour. For example, people are more likely to litter in an environment that is already littered because the discarded litter signals that this is normal behaviour in that environment (Cialdini et al. 1990). Norms include *descriptive* norms which indicate what behaviour is appropriate, and also *injunctive* norms which indicate the social approval (or disapproval) of the behaviour. Both can strongly influence behaviour. Therefore, a message that emphasises the social acceptance of particular behaviour (e.g. recycling) can help promote the behaviour. Similarly, where the target behaviour is already prevalent, messages in the form of '*the majority of [people in the relevant social group] undertook [the target behaviour]*' have proven effective in a range of settings (e.g. Schultz et al. 2007; John, Sanders & Wang 2014). For greatest effect, a message should use both descriptive and injunctive norms (see fig. 3).

However, if the prevalence of an undesirable behaviour is highlighted, this can indicate that such behaviour is 'normal' and unintentionally promote that behaviour (see fig 3). For example, electricity bills that include information about neighbours' average use can be effective at reducing

consumption of higher-usage customers, but simultaneously influence lower-consumption customers to consume more (Schultz et al. 2007). Creating a norm around a particular consumption figure (i.e. the neighbours average) acts as an anchor, driving consumption towards that level.

The emerging use of 'dynamic norms' offers a way to leverage a normative influence even where the desired behaviour runs counter to the relevant global norm for a group. Messages that use dynamic norms differ from those containing 'static' norms by providing information about how people's behaviour may be changing over time. For example, despite a context in which meat consumption was the normal behaviour, Sparkman and Walton (2017) used a message which read in part "over the last 5 years, 30% of Americans have started to make an effort to limit their meat consumption" (i.e. a dynamic descriptive norm) to double meatless orders at a café.

Whether or not norms are deliberately used to enhance the effectiveness of a message, it is important not to accidentally create an unhelpful norm by emphasizing the prevalence of an undesirable behaviour. Communicators should emphasize both the prevalence of the desirable behaviour (where applicable), and the social approval of the behaviour (or disapproval of the undesirable behaviour) (Cialdini et al. 2006) (see fig 3).

[Fig. 3 about here]

Lesson 4: Reduce psychological distance

Psychological distance is the level of cognitive separation or sense of distance people feel from themselves to another person, event, or issue. When this is larger, people tend to think about the matter in a more abstract fashion (Bar-Anan et al. 2006) and may be less motivated to take action (Spence et al. 2012). Psychological distance includes geographic, temporal or social distance, and is also affected by the relative certainty of an event occurring (greater certainty reduces psychological distance) (Bar-Anan et al. 2006). Re-framing a message to reduce the psychological distance can help engage the audience with an issue (Jones et al. 2016). A message framed to emphasise that a

problem will affect people like the audience themselves; occur nearby; and will be highly likely to occur sometime soon, will help reduce this distance (fig 4).

[Fig. 4 about here]

In a conservation context, communicators might typically aim to *decrease* psychological distance (see fig 4), for example, by framing messages to decrease the distance between the audience and the effects of, say land clearing, in order to make the consequences of habitat loss more tangible. However, in some cases it may actually be advantageous to *increase* psychological distance to some issues, such as in advocating feral animal management to promote a more abstract perspective (e.g. that feral cats are *pests*, and not *pets*).

Increase vividness with emotion

One approach to increasing the vividness of a message is to evoke emotion. Emotive messages can be effective at motivating an audience, and may often have greater influence than cognitive appeals (Shiv and Fedorikhin 1999). This can be aided through the use of narratives that relate to people and experiences, rather than reporting on numbers and statistics (Loewenstein et al. 2001). Both positive and negative emotional appeals can be effective at influencing attitudes. Negative appeals, such as those based in fear, tend to be used more often in conservation campaigns. These can be counter-productive as they tend to reduce the audience's agency and can lead to avoidance of the fear inducing information in the future (Loewenstein et al. 2001). However, Kidd et al. (2019b) highlight the lack of broad consensus about the use of positive and negative messages in conservation; like all framing issues, the effectiveness will depend on audience and context.

Avoid undermining agency

When reducing the psychological distance, one must be careful not to make the distance so small that it becomes counter-productive for promoting behavior (McDonald et al. 2015) and undermines a person's sense of agency. Personal agency (similar to self-efficacy) is the sense of power regarding

a person's ability to influence their own actions (Ajzen 1991), and is related to 'response efficacy', the sense that their actions will achieve an intended outcome. Empowering agency is important for motivating behaviour. This is a particular challenge for biodiversity conservation given the complex and diffuse nature of many such problems. Unfortunately, many conservation messages undermine agency by focussing on the dire situation of many conservation issues.

Hope-based appeals are well suited to promoting efficacy (Myers et al. 2012). However, this does not work in all cases; Hornsey and Fielding (2016) found that an optimistic message about progress in curbing carbon emissions was less effective than a pessimistic message because emphasising 'good news' increased complacency. This highlights the role that context plays in framing, and underlines the value of testing your messages wherever possible.

Lesson 5: Leverage useful biases

There are many cognitive biases that influence how we think and behave, and messages can be strategically framed to either take advantage of, or to avoid, particular biases. For example, **prospect theory** (Kahneman and Tversky 1979, 1984), which results in a tendency for people to weigh losses more heavily than equivalent gains, has often been used to demonstrate framing effects. For example, alternatively framed environmental policy options are viewed more favourably when framed as a 'restored loss', rather than as a 'new gain' (Gregory, Lichtenstein and MacGregor 1993). (However, also see O'Keefe and Jensen 2008 which suggests gain-framed messages may actually be more effective than loss-framed messages). Although there are numerous explanations for this tendency to give greater attention and weighting to negatively framed information (Cialdini et al. 2006), the upshot is that negative framing is often more effective than equivalent positive framing (Baumeister et al. 2001). This includes positive statements framed in terms of 'please do' compared to equivalent negatively framed statements in the form of 'please don't do'. Winter (2006) demonstrated that such negatively worded signs were much more effective at encouraging park visitors to remain on established paths (fig 5).

[Fig. 5 about here]

There are many cognitive biases that could be used to inform strategic framing. One example is the **endowment effect**; this is the tendency for people to value something more highly when they own it than if they do not, even if they have only owned it for a brief period (Kahneman et al. 1990). This bias explains the framing effects observed by Nash and Stern (2009) in the context of selling laptop computers; by framing the concept of ownership as a collection of separate rights about use of the laptop, purchasers were more agreeable to subsequently imposed restrictions in their use of the laptop. This example highlights the capacity for strategic framing to improve the effectiveness of a message not only by emphasizing resonant frames, but also by identifying potentially unhelpful framing effects. In a conservation example, framing a message designed to promote a policy that involved restrictions on vegetation clearing in such a way that it highlighted the implications for property use rights would risk evoking the endowment effect in landholders and adversely influencing their attitude towards the policy (Kusmanoff 2017). Understanding how this framing can generate an unhelpful bias can alert the communicator to use language that avoids or minimizes the endowment effect.

Another well-known bias is **status quo bias**, or the preference to avoid change, such that among alternatives, people display a bias for the status quo (Samuelson and Zeckhauser 1988). Thus, it may be advantageous, where possible, to frame a conservation policy as the continuation of existing and already accepted policies or principles. The **scarcity heuristic** is another potentially useful bias; here items or commodities perceived to be in short supply are considered more desirable and therefore more valuable, particularly where this is a result of high demand (Worchel et al. 1975), though it may also arise where time also is scarce. This is an approach often used to promote sales, with such refrains as "Hurry, while stocks last". Given the increasing scarcity of threatened species and habitat, and the genuine need to act quickly to avoid extinctions, activating this bias may be a strategy well-suited to conservation messaging. A commonly used marketing 'trick' is to evoke the **norm of**

reciprocity (e.g. Cialdini 2008); this is the feeling of obligation people feel to return in kind a nice gesture or gift, and one reason why salespeople give free product samples. Perhaps an imaginative conservation communicator could highlight the ecosystem services that a species or ecosystem provides and evoke a reciprocal obligation in their audience?

There are many cognitive biases and other behavioural effects that strategic framing could potentially leverage to enhance conservation messages. Even if a conservation communicator has no desire to leverage biases, it is still important to be aware in order to avoid accidentally evoking biases in a way that is counter-productive to their message. This codex of over 180 cognitive biases (available at: [https://commons.wikimedia.org/wiki/File:The_Cognitive_Bias_Codex_-_180%2B_biases,_designed_by_John_Manoogian_III_\(jm3\).png](https://commons.wikimedia.org/wiki/File:The_Cognitive_Bias_Codex_-_180%2B_biases,_designed_by_John_Manoogian_III_(jm3).png)) may provide a useful starting point for those considering which cognitive biases might be relevant to their context and why.

Test your message for effectiveness and unintended framing effects

By considering these five simple lessons, conservation communicators can readily apply framing insights drawn from across the literature at little or no cost to enhance the effectiveness of their messages. These concepts apply equally to everyday communications as they do to broader messaging campaigns. However, there is always a chance, even for carefully considered messages, that unintended effects may result. Some examples of well-known potential 'boomerang effects' to watch out for are outlined in fig. 6. Therefore, we suggest that messages intended for wide dissemination should be tested beforehand wherever possible. A common method for this is the use of focus groups (for which there is much guidance in the literature, e.g. Morgan (1996)), however the advent of highly capable web-based survey platforms (e.g. www.qualtrics.com; www.surveymonkey.com) provide convenient alternatives. General information on testing messages can be found online, for example at: <https://publicinterest.org.uk/TestingGuide.pdf>.

Conclusion

Attitudes and behaviours are key drivers of biodiversity conservation outcomes. Therefore, the effectiveness of conservation messages that seek to influence attitudes and behaviours can be critical to the successful implementation of policy interventions and campaigns. With this in mind, there are relatively easy and low-cost gains to be had by putting more effort into strategically framing messages.

Here we have provided five key lessons to help guide strategic framing. Not all elements will be relevant at all times, and neither are the elements of strategic framing necessarily limited to those outlined here. Although we have discussed these concepts as discrete factors, most conservation messages will include numerous framing elements that employ a variety of approaches targeted to different aspects of the message. Part of the process of strategic framing is to consider how a message sits together as a whole.

We note that message framing is but one ingredient to consider within the broader goal of persuasion, and there are no absolute rules when it comes to this artform. We do not promise that simply by heeding our lessons that readers will automatically arrive at more persuasive messages. However, these offer a foundation for conservation communicators to begin to understand and apply the benefits of strategically framing their messages.

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Figs

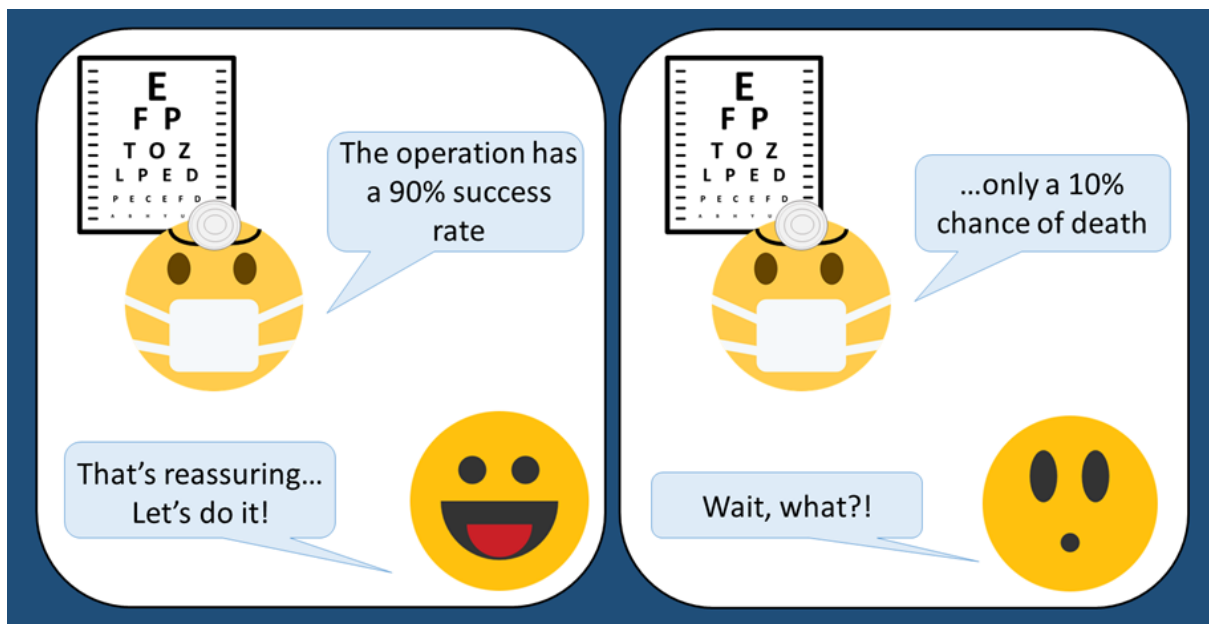


Fig. 1. An illustrated example of how alternatively framing information can influence the ways an audience may respond.

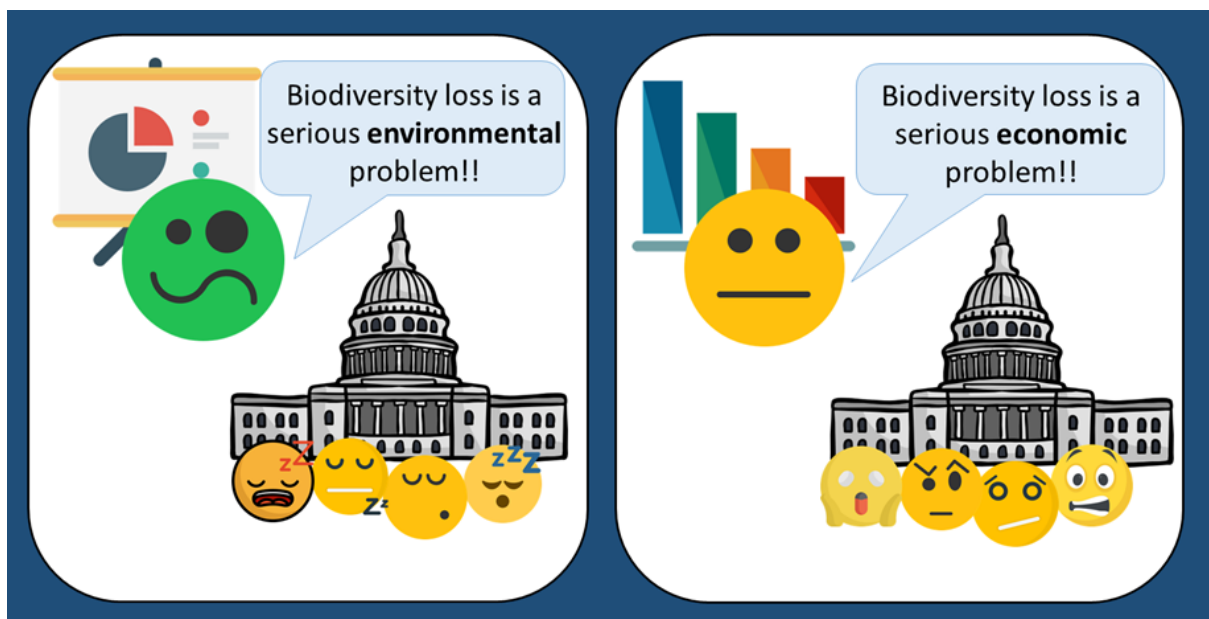


Fig. 2. Issues can be framed to suit different agendas and audiences. Where possible your message should be tailored for your target audience. Characteristics of the messenger can also influence audience response. Note that this figure is based on an original climate change cartoon attributed to Felix Schaad.

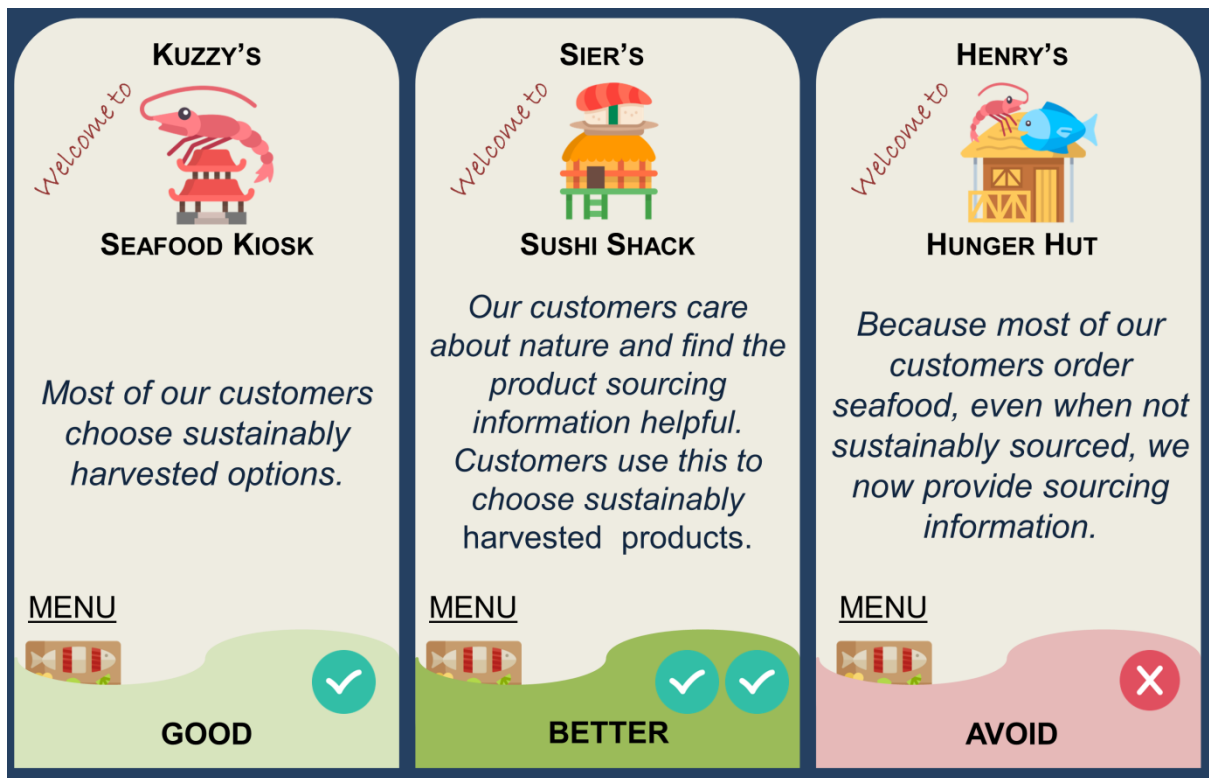


Fig. 3. These hypothetical menu excerpts illustrate how information can be framed to activate norms, either helpfully or unhelpfully. The excerpt from Kuzzy's establishes the making of sustainable choices as a normal behaviour for customers. At Sier's this norm is paired with information about the social approval of this behaviour, likely enhancing the influence of the message. Although the information conveyed by Henry's menu is substantially the same as Sier's, Henry's establishes a norm of eating seafood regardless of how it is sourced, potentially encouraging this undesirable behaviour.

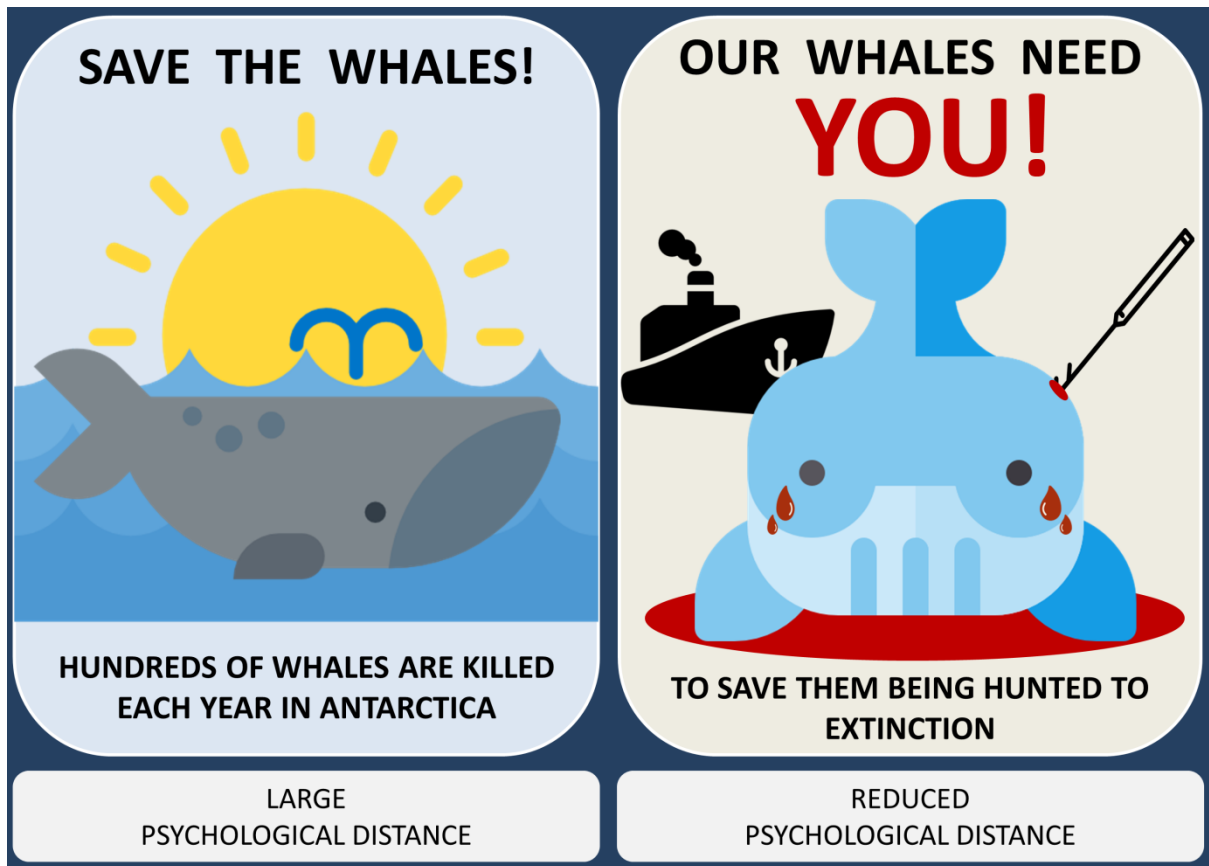


Fig. 4. The hypothetical campaign poster on left does nothing to reduce the psychological distance between the threat to whales and the reader; the image is of a whale in its natural state (abstract for most people) and emphasizes that the threat to whales is far away (Antarctica). In contrast, the poster on the right seeks to reduce psychological distance by increasing the vividness, making the whale relatable to humans (i.e. the whale is making a plea for help, has tears), avoiding mention that the hunt occurs far away, and seeking to engender a connection to the reader by referring to 'our whales'.

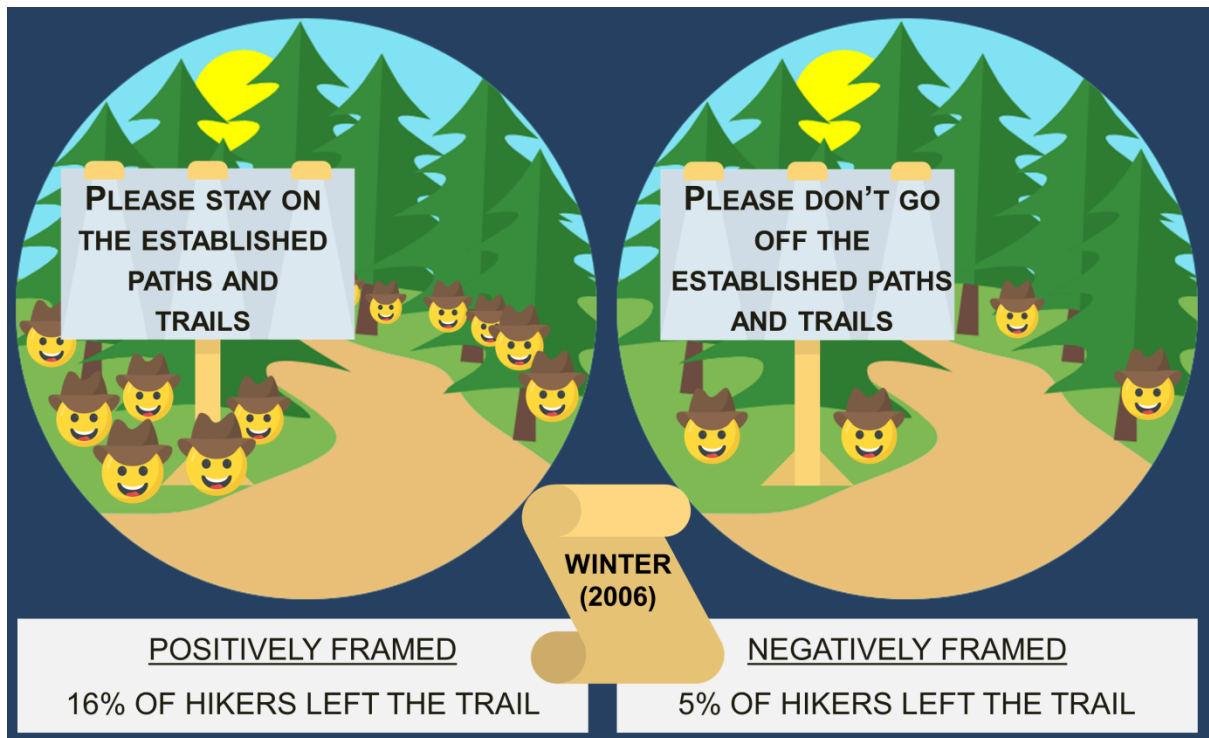
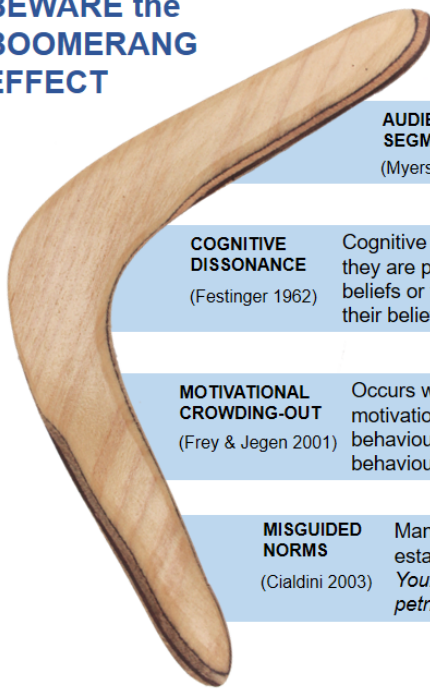


Fig. 5. One common bias that may be leveraged by strategic framing is the greater influence of negatively worded messages. In a study by Winter (2006) more than three times as many hikers that encountered the positively framed sign disobeyed the request to stay on the path.

Author Man

BEWARE the BOOMERANG EFFECT



AUDIENCE SEGMENTATION (Myers et al. 2012)

Framing climate change as a national security issue aroused unintended feelings of anger and backlash in skeptical segments of the public.

COGNITIVE DISSONANCE (Festinger 1962)

Cognitive dissonance is the discomfort that arises within an individual when they are presented with new information or actions that conflict with their beliefs or values. People may seek to avoid such inconsistency, or change their beliefs or behaviours in order to restore consistency.

MOTIVATIONAL CROWDING-OUT (Frey & Jegen 2001)

Occurs when the offer of a reward (e.g. money) causes intrinsic altruistic motivations to be replaced by extrinsic, self-interested motivations for certain behaviours. Over time, incentives may actually reduce the targeted behaviour in segments of the audience that value nature intrinsically.

MISGUIDED NORMS (Cialdini 2003)

Managers at Arizona's Petrified Forest National Park inadvertently established theft as a social norm by putting up a sign that read: *Your heritage is being vandalized every day by theft losses of petrified wood of 14 tons per year, mostly a small piece at a time.*

Fig. 6. Four examples of unanticipated 'boomerang' effects of messages that can work against the aim of communicators.

Author Wai

Figure Legends

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