RESEARCH INFORMING PLANNING AND PRACTICE



PROMOTING PERSUASION in Protected Areas

A GUIDE FOR MANAGERS WHO WANT TO USE STRATEGIC COMMUNICATION TO INFLUENCE VISITOR BEHAVIOUR Sam H Ham, Terry J Brown, Jim Curtis, Betty Weiler, Michael Hughes, Mark Poll



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PREFACE

The purpose of *Promoting Persuasion in Protected Areas* is to help protected area managers (PAMs) make better decisions and to achieve greater success in their use of communication to influence visitor behaviour. Visitation to protected areas has increased steadily in recent decades, and among these visitors is a special subset of individuals who engage in behaviours that are at odds with management objectives. Yet many of their most problematic behaviours are the product of naiveté or misconception rather than malicious intent. PAMs have long considered interpretation an effective and appropriate strategy for dealing with these kinds of problems, but success in using it to influence visitor behaviour has been mixed.

One of the challenges commonly faced by PAMs is that they've not been given tools or guidelines for analysing visitor behaviour or about making decisions respect to communication with approaches that would be best suited to influence it. However, recent advances in communication theory and research tell us that if we understand what visitors think about a given behaviour, we'll have a better chance of influencing them to adjust their actions in line with management goals. Our primary aim in this manual is to help you see visitor behaviour through the eyes of substantiated theory and to make better strategic decisions as you develop and deliver messages aimed at influencing visitors to behave in particular ways.

Some of the methods described in this manual have been published elsewhere, though mostly in academic publications and technical documents. The most prominent works are by Professor Icek Ajzen at the University of Massachusetts (USA) who originated the theory of planned behaviour that forms the basis of our approach in this manual. We have listed some of these works in our bibliography. However, this manual distinguishes itself from previous publications by adopting an applied 'how-to' approach, using nontechnical language and avoiding where possible academic citations that might interrupt the flow of ideas for an applied reader uninterested in such documentation. This does not mean, however, that the methods we outline lack a theoretical basis or research foundation. On the contrary, the methods are modelled from lessons learned in literally hundreds of published studies. If you would like to know more about these studies or the theories they're based on, we encourage you to contact one of us or access some of the selected works listed in the bibliography.

The intended audience for the manual is PAMs and staff with responsibility for visitor interpretation and who have a strong interest in communication research and theory. The manual has been designed to accompany Professional Development Workshops (PDWs) that will explain and demonstrate the described procedures.

Our main goal at each one-day PDW will be to show participants how they can achieve greater success in their use of communication to influence visitor behaviour. We'll briefly consider the cornerstones of the theory of planned behaviour. This well-established theory will draw our attention to the kinds of information we actually need to have in order to be more effective in communication programs. From there, we'll spend the rest of the day practicing a basic methodology for collecting this information and using it to make good decisions about message content and communication strategy. Participants will leave the PDW feeling current in their understanding of the persuasive communication process and confident in their ability to apply what they've learned in the protected areas they manage. The manual will serve as a reminder of the workshop demonstrations and provide a valuable reference for future use.

We hope you find the advice contained in these pages both relevant and useful in your work, and above all, that it contributes to better management of protected resources and to the enhancement of visitor experiences.

Sam H Ham Terry J Brown Jim Curtis Betty Weiler Michael Hughes Mark Poll

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We also extend thanks to the additional members of our IRG for their keen interest and valuable advice regarding the content and coverage of the manual: Ms Claire Savage, South Australia Department of Environment & Heritage; Ms Prue Daley, Parks Victoria; and Mr Rod Hillman, Ecotourism Australia.

Finally, we owe a special debt of gratitude to the many hundreds of proteced area visitors who have willingly participated in our studies and given us the opportunity to fine-tune the methods presented here. We are grateful for their time, cooperation and good will.

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INTRODUCTION TO PERSUASIVE COMMUNICATION THEORY

If you're interested in influencing the behaviour of visitors to protected areas, this manual is for you. Many managers, and some tourism operators, see this as an important part of their job. While others can learn and apply the approach outlined in this manual, and while the methods can be adapted for influencing many different kinds of behaviours, this manual is written for protected area managers who want to influence the behaviour of people who visit their sites.

You'll note that we use the term *influencing* behaviour rather than *changing* it, since a lot of visitors are already doing what we want them to do, and still others arrive with no established behavioural tendencies at all. So although communication sometimes succeeds in changing a particular visitor's behavioural intention, the same communication might serve more to reinforce how another visitor already intends to behave, and for a third visitor it might suggest a new behaviour the person had never before considered. When we say we want to influence visitor behaviour, we're talking about all three of these possibilities—changing, reinforcing, or creating a new behaviour.¹

You might think that getting a visitor to behave in a particular way is relatively straightforward, and indeed sometimes it can be. All of us have had the experience of trying to influence the behaviour of other people in our lives, and most of us have had at least some success in doing it. Sometimes, for example, we use so-called 'carrot' approaches in which we *encourage* certain behaviours by educating people about them and by providing rewards for doing the things we want. Carrots are indirect approaches since they ask visitors to comply voluntarily.

Other times we use 'stick' approaches where we *discourage* undesirable behaviours by establishing and enforcing rules or policies, or by otherwise using our authority. Sticks are direct approaches to influencing behaviour in PAs and include such

management strategies as law enforcement, road closures, site hardening, and the erection of barriers.

In the context of parks and protected areas, direct management can be quite effective. For example, if you want visitors to put their rubbish in bins, you might not only provide the bins where you think they'll be convenient for visitors, but you might issue a fine to visitors who simply throw their rubbish on the ground. Similarly, if you want trail bike riders to stay off of certain tracks, you might close those tracks and provide information and maps to direct riders to areas you want them to use.

When we say we want to influence visitor behaviour, we're talking about three possibilities changing, reinforcing, or creating a new behaviour.

You may find you're using direct management approaches quite successfully, but that they sometimes don't work or aren't the most desirable way to influence behaviour. First, policing of behaviour and enforcement of regulations can be expensive, not only because of the staff time it requires but because of the costs you sometimes pay in damaged public relations.

Second, such direct approaches can rob visitors of their sense of freedom and sometimes have the potential to intrude visually on the landscape they came to enjoy. For example, most visitors won't object to tossing their rubbish in a rubbish bin, but they may not want to see rubbish bins in the backcountry. Many visitors feel that their experience is compromised if, as they enter your park, they're issued with a long list of do's and don'ts along with warnings that they'll be punished for noncompliance. Indeed, many of us have cringed at one time or another at the sheer proliferation of regulatory signs in protected areas.

It is for these reasons that PAMs increasingly supplement their direct management programs

¹ Occasionally we use the term 'change', but only when it's clear that an established behavioural pattern is already in place.



with less direct 'carrot' methods. These include especially the use of persuasive communication as a means of influencing visitor behaviour.

In attempting to influence the behaviour of protected area visitors, we can learn a lot from research that has been done in other fields, as well as from successful applications of persuasive communication in recreation and tourism settings.² The approaches in this manual draw on a range of social science research and theory, but as a PAM you mainly need to be aware of the two overarching theories that inform the processes described. The first is Ajzen's theory of planned behaviour (TPB), and the second is Petty's and Cacioppo's elaboration likelihood model of persuasion (ELM)-³

Theory of planned behaviour (TPB)

Seeing behaviour through the eyes of the TPB will lead us to make good decisions about the messages that will be most effective in persuading visitors to behave as we want. According to the TPB

(Figure 1), we can influence how others behave in a given situation by impacting three categories of beliefs they have about the behaviour we desire of them:

- behavioural beliefs, or what they believe to be the likely outcomes or consequences of the behaviour and their positive or negative judgment about each of these outcomes;
- normative beliefs, or how they believe other people of importance to them want them to behave and their motivation to comply with the wishes of these important others; and
- control beliefs, or their beliefs about the presence of situational and internal factors that make the behaviour easy or difficult to do, and how much each factor facilitates or inhibits performing the behaviour.

Consider the case of a young woman who arrives at a site where off-track walking is a persistent problem. We'll call it the 'problem behaviour' since it's the one you want to decrease. The behaviour you want from this visitor is to stay on the designated track. We'll call this the 'target behaviour' since

² You can find reviews of applications of persuasive communication in recreation and tourism settings in Absher & Bright (2004), Curtis (2007), Ham & Weiler (2005), Manfredo (1992), Manning (2003), and Roggenbuck (1992).

³ See Ajzen (1991) and Petty & Cacioppo (1986).

Seeing behaviour through the eyes of the TPB will lead us to make good decisions about the messages that will be most effective in persuading visitors to behave as we want.

it's the one your communication will be targeted to encourage. According to the TPB, this visitor may have all three types of beliefs about the target behaviour of staying on the designated track.

Behavioural beliefs

The woman's *behavioural beliefs* include what she thinks are likely to be the outcomes or consequences of staying on the track and whether she thinks each of these outcomes is good or bad. Although a visitor may have any number of beliefs about a given behaviour, only a few of them will be truly pertinent and important at the time s/he decides how to behave. This subset of truly pertinent beliefs is called 'salient beliefs.' For example, our female visitor may hold the salient belief that staying on the designated track will reduce her impact on the environment. For each behavioural belief, we need to know how likely the visitor believes it is that this outcome will actually occur, and how good or bad she feels the outcome is. If this were the woman's only salient behavioural belief, combining these two things would tell us her *attitude* toward the behaviour of staying on the desgnated track. If she believes staying on the track is very likely to reduce her environmental impact and if she evaluates this as a good outcome, then she would have a positive attitude to your target behaviour. That's what you want. When visitors believe that good outcomes are likely and bad outcomes are unlikely, then there's a tendency to see the target behaviour as desirable.

Normative beliefs

In addition to behavioural beliefs, our visitor may also have salient *normative beliefs* about what important others (for example, other bushwalkers or you as the manager) think about her staying on the designated track. Alternatively, or in addition, she may have beliefs about what others in her group (parents, children, friends) think about the behaviour.



Figure 1. Theory of planned behaviour model (source: Ajzen 1991).

Here you need to find out who these important others are and whether they would approve or disapprove of the target behaviour. The TPB calls these 'social referents'. In addition, you need to find out how important it is to the visitor to do

When visitors believe that good outcomes are likely and bad outcomes are unlikely, then there's a tendency to see the target behaviour as desirable.

what each of those people wants. This is called the visitor's 'motivation to comply'. Visitors usually will vary in how motivated they are to comply with the wishes of each social referent. A normative belief is a combination of the two (a belief about the degree to which a particular social referent approves or disapproves of the behaviour and the degree to which the visitor wants to do what the important other wants). If this were our visitor's only salient normative belief, combining these two things would tell us the amount of social pressure (or subjective norm) she feels to perform or not perform the behaviour. Say, for example, that other people on the track are an important social referent for our visitor. If she believes they would approve of her staying on the track, and if she is strongly motivated to comply with their wishes, then she would feel social pressure to stay on the track. A strong motivation to comply with referents that approve of the behaviour creates social pressure to carry it out.

Control beliefs

Our visitor's salient *control beliefs* have to do with whether she feels she to stay on the track. This sort of belief combines the degree to which she feels she's personally capable (i.e., has the physical ability, intelligence, time, resources and opportunity) to stay on the track and the degree to which she feels she has volitional control over whether or not to do it (e.g., if she's part of an organised tour group and the tour guide leads the group off-track, she might feel she has little control over the behaviour even if she personally objects to doing it). Control beliefs focus on the presence or absence of 'facilitators' (things that make doing the behaviour easier) and 'inhibitors' (things that make doing the behaviour more difficult). For each facilitator and inhibitor, the visitor has beliefs about whether it is, in fact, present (i.e., relevant to the situation), and how easy or difficult it makes doing the behaviour. Taken together, these two things will tell us how much control our visitor feels she has over the behaviour. If she feels she has a lot of control (i.e., that facilitators are prevalent and inhibitors are minimal), there will be a tendency for her to stay on the designated track. When a visitor perceives the presence of more facilitators than inhibitors, then the target behaviour is easier and therefore more likelv.

A strong motivation to comply with referents that approve of the behaviour creates social pressure to carry it out.

On the right-hand side of the TPB model are behavioural intention and behaviour. As the diagram shows, the combination of our visitor's attitude toward staying on the track, her sense of social pressure to stay on the track (subjective norm), and whether she feels she has sufficient control over performing the behaviour (*perceived behavioural control*), will lead to an intention either to stay on the track or walk off-track. If her intention is strongly in favour of staying on the track, then she's likely to do just that. However, if her intention is negative (i.e., she intends to walk off-track), then the chances are good that she won't stay on the track.

Generally speaking, strong intentions are more predictive of actual behaviour than weak ones, and intentions that are formed just a short time before the opportunity to behave are more predictive than intentions that are made farther in advance. Obviously, the briefer the period between intention and behaviour, the less likely it is that unanticipated factors can *intervene*. So if our visitor strongly intends to stay on the designated track at the time she embarks on her walk, she's probably going to stay on the track. When a visitor perceives the presence of more facilitators than inhibitors, then the target behaviour is easier and therefore more likely.

Measure, don't guess

You can see that all the factors leading up to a behavioural decision are internal to the visitor, meaning we can't observe them directly; yet, somehow we need to know what they are. You might think that as a park manager you have a pretty good understanding of your visitors, and therefore, that you can more or less guess or intuit what your visitors believe or feel. However, experience shows that this usually is not the case. First of all, most protected areas have a great diversity of visitors; so what one group of visitors (or *audience*) *believes* about a behaviour can be very different from what another group thinks.

Second, studies show that what your visitors may think (and even say to you) about a behaviour is almost certainly context-specific. So even if you've chatted with many visitors over the years about a particular problem behaviour, for example, feeding wildlife in parks, their beliefs are not the same for every species of animal, nor for every park, nor for every wildlife-feeding situation in that park.

Finally, and probably most important, because we managers have a specialised background, trained eyes, and a view of the protected area based on our professional experience, we usually aren't very representative of the visitors whose behaviour we want to influence. In short, they think and reason differently than we do. So it's usually wise for us just to accept the fact that 'we' are different and to make more concerted efforts to understand our perspectives on the behaviours we want to influence.

For these reasons, if you want to be successful in your ultimate goal of influencing behaviour, you'll need to begin by asking visitors what *they* think and feel. If you ask them carefully and in very precise ways, you'll increase your chances of understanding what they *really* think and *really* feel about the behaviours you wish to influence. The rest of this manual shows you how to do this.

TPB summary

The theory of planned behaviour provides a very well accepted framework that can be applied to protected area settings where managers want to use communication to persuade visitors to behave in particular ways. Hundreds of studies have applied the TPB to predict human behaviour, and it's being used all over the world in persuasive communication programs that successfully influence behaviour. Its range of applications is impressive: health, medicine, nutrition, safe sexual occupational safety, transportation practices. choice, energy use, consumer purchasing, voting, jury decision making, and many visitor behaviours in parks and protected areas (including camping practices, low-impact backcountry use, choice of tracks, wildlife feeding, dogs off-lead, mode of transport, tourist philanthropy, visitor safety, and other behaviours).

If you want to be successful in your ultimate goal of influencing behaviour, you'll need to begin by asking visitors what *they* think and feel

Of these myriad applications of the TPB, the ones that are most successful are the ones that are careful and precise about linking people's beliefs to a specific behaviour. While achieving a high level of precision in certain aspects of TPB research requires a background in psychological measurement theory, other aspects of it are more straightforward and require only a general understanding of the TPB framework as presented in the previous pages. These are the methods this manual will present. If your situation requires more advanced research experience, you might want to contact one of the authors or the psychology department at a nearby university.

Elaboration likelihood model (ELM)

We've seen so far that the TPB leads us to make good decisions about the message content of our persuasive communication, that is, which beliefs to target. It will now help to apply a little common sense and some basic guidelines from a second theory, the elaboration likelihood model of persuasion (ELM), to most effectively get the message across.

In psychology, 'elaboration' is a term for effortful thinking about a message. The main lesson from the ELM is that if you want your communication to have a strong and enduring impact on visitors' beliefs, attitudes and behaviour, you'll need them to invest significant mental effort in engaging with and processing your messages. In ELM lingo, this is called the 'central route to persuasion'. The more visitors think in agreeable ways about what a message asks of them, the more likely they are to form a positive attitude about your target behaviour. Assuming your message doesn't put them 'off-side' or alienate them, it will generally be the case that the more they think about it, the stronger and more enduring will be its influence on them.⁴

If visitors give less mental effort to thinking about your message, the impact it can have on them will be weaker and shorter-lived. But since many behavioural problems in protected areas occur in a relatively brief timeframe (for example, during a few hours walk or one-day or overnight visit), it's possible for you to achieve a persuasive effect on certain short-term behaviours even when visitors don't think a lot about the message itself. The ELM calls this the 'peripheral route to persuasion'.

Both routes to persuasion can be useful for a PAM, the difference being that visitors persuaded through the central route might continue behaving as you want long into the future, whereas visitors persuaded via the peripheral route might only behave as you want in a more immediate timeframe or during the time they're in your area. For many PAMs, however, this will be a very satisfactory compromise.

The main lesson from the ELM is that if you want your communication to have a strong and enduring impact on visitors' beliefs, attitudes and behaviour, you'll need them to invest significant mental effort in engaging with and processing your messages.

Since some visitors will process a given message centrally and others will process it peripherally, it makes sense that you'll increase your chances of success if you're able to reach both kinds of audiences, regardless of whether they invest just a little or lot of mental effort in processing and thinking about your message. For example, for a non-personal or self-guided communication device (such as a sign or wayside exhibit) to reach a peripheral-route audience, it needs to have a strong provocative title and subtitles that quickly communicate the desired behaviour, and which show visitors that the request is coming from a source they like and respect. If this brief message is accepted by these visitors, you'll increase the likelihood of them complying with your request in the immediate to short-term timeframe.

For visitors who are motivated to invest more mental effort, a strongly relevant message that presents compelling evidence for the behavioural request will be needed to get them to behave as you want. Studies show that if visitors see your message as easy to process and they feel motivated to engage with it, it will have a stronger and more enduring influence on them, not only in the short-term, but possibly into the future. This is because the more a visitor thinks about your message, the greater its potential impact on the beliefs it targets.

Combining the TPB and ELM

In summary, the TPB and ELM work together to point the PAM not only to the *content* of messages that stand the greatest chance of influencing a given behaviour, but to the communication *strategy* that will give those messages their greatest impact. If

⁴ You'll find a very similar view of persuasive communication in the 'heuristic-systematic processing model (HSM) developed by Chaiken (1980). Both the ELM and HSM enjoy strong research support.

The more a visitor thinks about your message, the greater its potential impact on the beliefs it targets.

your messages target visitors' salient beliefs about the behaviour you, as a manager, desire, they will be far more persuasive than messages you simply make up or intuit. As the large arrows in Figure 2 illustrate, if you can connect those messages to things that are strongly relevant to your visitors (i.e., which truly matter to them), you'll attract their attention to what you're asking of them. If visitors engage with a message and give a lot of mental effort to thinking about it, the message can impact the beliefs it targets, thereby having a stronger and more enduring impact on the visitors' attitude about the behaviour, and ultimately the behaviour itself. However, even if some visitors give comparatively little thought, the message might still achieve a persuasive impact on them in the short-term. Yes, its effects would be shorter-lived for these visitors because their beliefs were not as strongly impacted. But even if your persuasive influence lasts no longer than the time they spend in your park or protected area, you'll probably be happy with the results. This possibility is depicted by the 'weaker path' arrow in Figure 2.

The TPB and ELM work together to point the PA manager not only to the *content* of messages that stand the greatest chance of influencing a given behaviour, but to the communication *strategy* that will give those messages their greatest impact.



Figure 2. Pathways for influencing visitor behaviour in the TPB and ELM (source: Ham 2007).

Where is all of this going? A look ahead

So far, we've talked about influencing behavioural intentions and behaviour by targeting beliefs with persuasive messages. Generally, we know that to strongly influence a behaviour, we first need to have a pretty good idea (not just a guess) about the visitors' salient beliefs (behavioural, normative and control) with respect to the behaviour we desire of them, and then we need to target some of those beliefs with messages that are strongly relevant to the audience and easy to process. But how do we know which beliefs to target? Obviously, it would be inefficient and prohibitively expensive simply to target them all. So we must have some way of deciding which ones would be best to target. That's what the rest of this manual is about. Here's a preview of what's ahead:

Let's say you want to get your bushwalking visitors to pack out everything they pack into a remote section of your protected area. In this case, the audience we're targeting is bushwalkers who aren't doing what we want them to do. So let's call them the 'non-compliers'. To be successful in our communication with these non-compliers, we'll need to know not only their beliefs about packing out everything, but also the beliefs held by bushwalkers who already do pack out everything (the 'compliers'). Comparing the beliefs of the noncompliers with those of the compliers will help us see which ones we would be wise to target in our communication to the non-compliers. As you'll see in later sections, the salient beliefs that differ most between the two groups are the ones we'll want to focus our messages on. So our strategy in this example would be to determine which salient beliefs are most different between the compliers and non-compliers and then target those beliefs with strongly relevant messages that promote the 'pack it in-pack it out' target behaviour. If, after exposure to our messages, visitors have the opportunity to engage in the target behaviour in a fairly short timeframe, we ought to see increased compliance compared to the status quo.

Taken in its entirety, the TPB model not only shows us the pathways through which communication can influence visitor behaviour, it also shows us where to start, and what we need to know in order to be The main thing our messages must do is make each targeted belief strongly relevant to the visitors whose behaviour we want to influence.

successful. When we add the ELM to the mix, we can see that the main thing our messages must do is make each targeted belief strongly relevant to the visitors whose behaviour we want to influence. According to many TPB and ELM studies, when these cornerstones of a communication strategy are in place, successfully influencing behaviour is more likely than it would otherwise be.

In the following pages we'll explain this reasoning in a bit more detail and outline a process for building it into a persuasive communication strategy aimed at influencing visitor behaviour. This process includes five steps:

Step 1: Identifying problem behaviours

Step 2: Understanding visitor beliefs about the desired behaviour

Step 3: Identifying beliefs to target with persuasive communication

Step 4: Designing your persuasive message

Step 5: Implementation, evaluation and adaptive management

A SUCCESSFUL COMMUNICATION STRATEGY

- √ identifies visitors' *salient beliefs* related to the behaviour (i.e., salient behavioural, normative and control beliefs);
- √ determines which of these salient beliefs are *most different between* compliers and non-compliers;
- $\sqrt{}$ delivers strongly relevant messages that *target* these selected beliefs (whether to change them, reinforce them, or to create them anew in a visitor's mind);
- $\sqrt{}$ provides an opportunity in the *immediateto short-term* timeframe for visitors to act on their beliefs.

STEP 1: IDENTIFYING PROBLEM BEHAVIOURS

The fact that you're reading this manual suggests you want to address one or more management problems resulting from visitor behaviour in your park or protected area. This section will help you clarify which of those behaviours can be addressed using the method described in this manual, and which ones are not appropriate candidates for this method. It will also provide guidance in terms of identifying behaviours associated with a given problem and what you need to know about the behaviour and the visitor in order to influence both.

Throughout this manual, we'll use the term 'target behaviour' to refer to the *desired* behaviour, whether this is to get visitors to start doing something, or to do something more consistently, or more often, or in a particular place or at a particular time (e.g., to stay on designated tracks or to practice a lowimpact camping technique near a particular river). A target behaviour can also involve getting visitors to stop doing something, or not to do something in a particular place or at a particular time (e.g., not feed wildlife or not leave rubbish on the track).

Any visitor who carries out the desired or target behaviour in the way we want them to with respect to consistency, frequency, location and timing is called a *complier*. Visitors who don't do what managers want them to do are referred to as *noncompliers*. *People who think like non-compliers are always our target audience* in persuasive communication.

Behaviours this manual *can't* help you with

Before we go any further, it's important to mention the types of behaviour that are *not* suitable for the methods in this manual. For example, persuasive communication based on the TPB will not be very effective in stopping visitors doing malicious acts or acts based on criminal intent. Behaviours such as graffiti, vandalism, destruction of property, intentional killing of animals, theft and petty criminal acts fall into this category. Criminal acts are usually carried out in a planned or opportunistic way with knowledge that the behaviour is unacceptable to management authorities. People

People who think like non-compliers are always our primary target audience.

performing malicious or criminal acts have no intention of complying with what management sees as desirable behaviour at that time and place. Messages attempting to deter such acts will usually have little influence simply because the messages will be dismissed by the target group (and possibly even vandalised, stolen or destroyed to prove this). Similarly, addictive behaviour such as illicit drug taking and smoking are special cases requiring an approach outside the scope of this manual.

Behaviours that require decision-making and commitment to a course of action prior to arrival at a site are also not suitable for treatment using the method in this manual. For example, a visitor arriving at a site fully prepared and equipped for a previously planned activity such as off-road driving, or a hiker arriving at a remote trailhead inadequately equipped, are best addressed before the visitor leaves home. Messages received once at the site are probably too late. This manual is designed for targeting actions over which visitors have at least some personal or 'volitional' control, and it will not be as useful when visitors lack this control. For example, anyone who visits a national park as part of an organised group such as a school or tour group may not have control over what they do. The manual will have limited use in targeting these visitors, although it may prove useful in targeting the organisers and leaders of such groups. Similarly, anyone who is a passenger in someone else's vehicle may be unable to influence decisions about driving off the track, but an attempt to use this manual to target drivers may be of some value.

Finally, because the methods outlined in later sections of the manual require you to make comparisons between the beliefs of visitors who already behave as you want (compliers) and those who don't (non-compliers), you must be able to readily identify visitors in each group. *If you can't directly observe who is currently*

doing the 'right' and 'wrong' thing, the procedures in this manual will be difficult to use.

Behaviours this manual can help you with

The methods outlined in this manual will have the greatest chance of success if they're used to address problems caused by intentional behaviours that are uninformed or misguided. The methods are most appropriate when visitors' decisions to commit to the behaviour are made on-site rather than before they arrive. This includes behaviour resulting from visitors' misconception that they're actually doing something helpful or positive, behaviour stemming from their lack of knowledge of regulations, and behavior based on naiveté or ignorance about actual impacts.

Examples of problems this manual addresses

If you can't directly observe who is currently doing the 'right' and 'wrong' thing, the procedures in this manual will be difficult to use.

include feeding wildlife, littering, human waste disposal, trampling vegetation, inadvertently disturbing sensitive cultural sites, touching cave formations, and a host of dangerous or high-risk behaviours. Such behaviours usually result from an information gap rather than from malicious intent.

Finally, you'll have the greatest chance of success if you define your behaviour precisely with respect to what you want specific visitors to do, and the place and time you want them to do it. For example, defining a target behaviour as 'Bushwalkers will clean their shoes before entering the wilderness at the Black Lake trailhead' is going to be far more useful to you than defining it simply as 'Visitors will practice low-impact bushwalking.'

Identification of visitor-induced problems

The following questions will help you clarify the behaviour associated with the problem you want to address and what you would like visitors to do to reduce the problem. You might want to discuss the questions with other relevant members of your organisation.

What is the specific visitor behaviour associated with the management problem?

For effective treatment of a visitor-induced management problem, it's important to identify a specific, observable behaviour associated with the problem. You need to be confident that, by getting visitors to more consistently engage in the desired behaviour, you'll reduce the problem.

As a manager, the problem you have in mind may have a range of behaviours associated with it. For example, the problem of litter may result from: people dropping rubbish, people not picking up litter, not putting rubbish in a bin, not storing their rubbish properly, and so on. Wildlife feeding may result from people offering their own food, bringing specially prepared food (for example, bird seed), carelessly leaving food scraps lying around after a meal, not storing food properly, and so on. The problem of trampled vegetation may be a result of visitors leaving the designated walking track, walking off-track under certain soil moisture conditions, taking vehicles off-track, or camping in sensitive areas.

In order to address a problem with persuasive communication informed by the TPB, a *single specific* behaviour needs to be identified. This is important, as you will ultimately create messages targeted at getting visitors to perform a specific behaviour in order to reduce the problem.

Identifying which behaviour contributes to a particular problem is best done by managers and 'on-the-ground' staff such as rangers, perhaps in a group discussion format.

In order to address a problem with persuasive communication informed by the TPB, you need to define a *single specific behaviour*.

Where does the problem behaviour occur?

It's important to determine the prevalence of the problem and the number and types of visitors behaving in a way that contributes to the problem. This helps you determine later whether it's practical to survey visitors, observe them, and deliver messages to them effectively.

If a behaviour occurs over a large area it will be more difficult to observe and survey visitors. Problem behaviours that occur at specific, identifiable locations are ideal but not always the case. For example, the problem of visitors being swept off coastal rocks while fishing (because they use locations known for dangerous waves without securing themselves in harnesses) could occur over hundreds of kilometres of coastline. Choosing one or a few popular but dangerous fishing locations might be necessary in this case.

Who's performing the problem behaviour?

Knowing who carries out the problem behaviour will help you to survey the right people. A behaviour such as dropping litter might be done by visitors in general. Problems such as mountain bike riders using unauthorised trails can be linked to an obvious and specific group (mountain bike riders). Participants in other activities such as feeding wildlife might not be so obvious. They might be visitors in general or perhaps a more specific group such as picnickers, while other visitors such as bushwalkers are not contributing to the problem. Identifying the type of visitor performing the behaviour means you don't waste time surveying visitors not involved in the behaviour and who don't need to be influenced by your messages. Remember, messages will always be aimed at non-compliers. So identifying who they are is important.

Is the behaviour regular?

Ideally, the behaviour should happen on a fairly regular basis at the site where the problem occurs. This makes it easier for you to get enough responses to the surveys in order to have meaningful results to work with in later sections of this manual. For example, it will be important to get enough survey responses to make sure you identify the beliefs that are really associated with the target behaviour. We'll come back to this point later.

Is the visitor behaviour easily observable?

As mentioned previously, to use the procedures in this manual, you must be able to actually see visitors engaging in the problem behaviour. This is important because comparison of survey responses between compliers and non-compliers is needed to identify the important beliefs. Behaviours such as feeding wildlife, walking off tracks and not storing food properly will often be easy to observe. However, behaviours such as toileting in inappropriate locations on a remote hiking trail are more difficult to observe. If you can't observe the problem behaviour, you'll have difficulty later when

To use the procedures in this manual, you must be able to actually **see** visitors engaging in the problem behaviour.

trying to divide survey responses into compliers and non-compliers and then deciding which beliefs are most important to target in persuasive communication messages.

Some managers might be tempted to simply ask visitors whether they comply with behaviours that cannot be readily observed. However, if the behaviour is illegal, against park policy, or socially sensitive, asking visitors about what they have or haven't done is not a reliable alternative. This is especially so if the behaviour has some sort of embarrassment factor associated with it (such as toileting in the bush). Visitors will generally tell you what you want to hear in a visitor survey or play down things they think might not be condoned. So being able to observe the behaviour is key.

What behaviour do you want visitors to engage in?

Having identified a specific behaviour causing the problem, you now need to decide on the behaviour you'd like visitors to do in order to reduce the problem. For example, if the problem of dune erosion is caused by visitors not following the marked walking track to the beach, the desired behaviour might be 'always staying on the walking track'. If the behaviour associated with the problem of wildlife feeding is people giving food to birds, then the desired behaviour might be 'not feeding the birds'. If the problem of litter is caused by people dropping rubbish on the ground, the desired behaviour might be 'putting rubbish in the bin'.

Once you've decided on your target audience and precisely what the desired or target behaviour is, and you're confident about its suitability and practicality based on the other questions raised here, then you're ready to proceed to Step 2, identifying the beliefs associated with the behaviour. You need to define your target behaviour in terms of *what* you want your visitors to do, as well as *where* and *when* you want them to do it.



STEP 2: THE ELICITATION STUDY— UNDERSTANDING VISITOR BELIEFS ABOUT THE DESIRED BEHAVIOUR

Once a target behaviour and audience have been selected, the real fieldwork begins. The first stage is to identify your audience's salient beliefs about the desired behaviour, or what we refer to here as a 'pool' of salient beliefs. These are the most commonly held beliefs visitors have about the behaviour you want them to engage in.

This first phase of research is called an 'elicitation' study because you're asking visitors to tell you about their beliefs in a free-response, open-ended fashion, as opposed to giving them a checklist of beliefs to select from. We suggest you do this in the form of short individual interviews conducted in the location where the problem actually occurs.

It's possible to do an elicitation study using group interviews, but because the questioning method involves open-ended responses, it's probably best to interview a sample of your visitors face-to-face and one-on-one.

Ideally, you'll conduct interviews separately with known compliers and non-compliers. This will make decision making a little easier for you later. But if circumstances make it difficult to separate them at this stage of the process, you can still make good decisions from a combined list of their beliefs.

As mentioned earlier, you probably could sit at your desk and come up with your own list of beliefs for most behaviours, or you could possibly generate a list of beliefs based on somebody else's research. But experience shows that doing either of these would be a mistake^{.5} Ultimately, your attempts to persuade visitors to behave appropriately will be far more successful if you get their beliefs about the behaviour directly from *them*. As a group, they think and reason differently than managers do. If they thought like we do, we wouldn't need to communicate with them at all. You probably could sit at your desk and come up with your own list of beliefs for most behaviours, or you could possibly generate a list of beliefs based on somebody else's research. But experience shows that doing either of these would be a mistake.

The importance of this first step cannot be overstated since everything else in the process will be influenced by the accuracy of the beliefs you identify as being salient. Ultimately, the success or failure of your communication efforts will depend on the foundation you build from your elicitation study. If you identify beliefs that are not in fact salient to the behaviour you want to promote, then your messages will miss the mark and you can expect little improvement over the status quo.

It's therefore important that you interview visitors who are representative of the audience you want to influence. This doesn't mean you need a random sample, but simply that you need visitors who are typical of the ones you'll later target with your persuasive communication. If possible, you should conduct interviews with roughly equal numbers of observed compliers and observed non-compliers.

You need to conduct the elicitation interviews onsite. In other words, if you're aiming to influence visitor behaviour at a particular location within

If you identify beliefs that are not in fact salient to the behaviour you want to promote, then your messages will miss the mark and you can expect little improvement over the status quo.

⁵ A recent study by Curtis, Ham & Weiler (2007) found that even when the target behaviour was the same (in this case, taking a shuttle bus rather than driving a car in a national park), visitors at two different parks in Tasmania and Victoria varied considerably in their salient beliefs about the behaviour.

a particular protected area, then you'll want to conduct your elicitation study at that specific site.

The number of visitors you need to interview in this stage of research depends in part on how variable they are in their beliefs. It's common that after interviewing only about 25 people in each group (compliers and non-compliers), you'll be hearing a lot of duplication. That is, the beliefs they're mentioning are identical or very similar to ones previous interviewees mentioned. This is called 'saturation' and indicates that you'd probably gain little from conducting additional interviews. However, if you're still hearing new beliefs with each new interview, then you should continue until saturation is reached. Rarely would more than 40 or 50 interviews be required.

An elicitation interview will ask three pairs of questions, each pair pertaining to one of the three categories of beliefs identified by the TPB (behavioural beliefs, normative beliefs, and control beliefs). Appendix A provides a typical interview schedule for an elicitation study:

Behavioural belief questions

- What do you see as the advantages or good things that could occur by [INSERT THE TARGET BEHAVIOUR] today? [PROBE]
- What do you see as the disadvantages or bad things that could occur by [INSERT THE TARGET BEHAVIOUR] today? [PROBE]

Normative belief questions

- Who (individuals or groups whose opinions you consider personally influential) do you think would support or approve of you [INSERT THE TARGET BEHAVIOUR] today? [PROBE]
- Who (individuals or groups whose opinions you consider personally influential) do you think would object or disapprove of you [INSERT THE TARGET BEHAVIOUR] today? [PROBE]

Control belief questions

 What factors or circumstances enable or make it easy for you to [INSERT THE TARGET BEHAVIOUR] today? [PROBE] What factors or circumstances make it difficult for you to [INSERT THE TARGET BEHAVIOUR] today? [PROBE]

The interviewer should give each visitor enough time to list her or his thoughts in response to each question, and should continue probing until the visitor has nothing more to add (see Appendix A). The interviewer needs to write down precisely what the visitor says in response to each question, and in the *visitor's own words*.

When you've completed the interviews, you'll have the *pool of salient beliefs* for the behaviour you are targeting. But because this list of beliefs will be very long and unwieldy, you'll need to do some organising before you can make much sense of it.

The interviewer needs to write down precisely what the visitor says in response to each question, and in the *visitor's own words*.

Organise your results and prepare to make decisions

After the interviews are completed, you need to transcribe all the responses to each question. You might want to do this in a Word document or Excel spreadsheet as this makes it easy to copy and paste responses and to later reorder and group common responses.

At this stage, you should have a list of visitors' verbatim responses under each of the six questions (two questions each for behavioural, normative and control beliefs). Since visitors often will give more than one response to each question, you could end up with dozens of responses to each of the six questions. These might look something like the example shown in Appendix B and in abbreviated form in Figure 3 where the target behaviour was picking up rubbish found on the Russell Falls walking track in Mt Field National Park, Tasmania. (For illustrative purposes Figure 3 shows the results only for compliers. If you're interested, Appendix B contains the comprehensive results for both groups.)

Behavioural Belief Responses

ID (date)	Q1. What do you see as the advantages or good things that could occur if you pick up rubbish from the track?	Q2. What do you see as the disadvantages or bad things that could occur if you pick up rubbish from the track?
1 (18 Feb 06)	 Retains the park's natural beauty Prevents an accumulation of rubbish, which can lead to a health hazard 	It is something extra to carry
2 (18 Feb 06)	 Stops the place from becoming ugly I can model good behaviour for other people on the track Prevents pests from coming (e.g. wasps are attracted to soft drink cans) 	 There may be a dangerous animal inside the rubbish Rubbish may be dirty or unhygienic (I would not pick up tissue, but rather kick it off the track)
3 (18 Feb 06)	 As a tour guide, it allows me to show people to do the right thing, to set an example By removing non-biodegradable material, it reduces potential damage to the flora and fauna Removes rubbish that is not very becoming to the site (ugly) 	Depends on the type of rubbish – if the rubbish has become part of nature (e.g. an old car) and animals have made it their home, then picking up the rubbish could disturb the animals
Etc.	• Etc.	• Etc.

Normative Belief Responses

ID (date)	Q3. Who (individuals or groups whose opinions you consider personally influential) do you think would support or approve if you pick up rubbish from the track?	Q4. Who (individuals or groups whose opinions you consider personally influential) do you think would object or disapprove if you pick up rubbish from the track?
1 (18 Feb 06)	My wifeMy childrenMy neighbours	People who would accuse me of being a tree-hugger
2 (18 Feb 06)	 My partner All my friends (if they did not approve, they would not be my friends) 	Nobody
3 (18 Feb 06)	People I take on tour	 Nobody (people who disapprove don't matter—I have no faith in humanity)
Etc.	• Etc.	• Etc.

Control Belief Responses

ID (date)	Q5. What factors or circumstances enable or make it easy for you to pick up rubbish from the track?	Q6. What factors or circumstances make it difficult for you to pick up rubbish from the track?
1 (18 Feb 06)	Nothing	Nothing
2 (18 Feb 06)	If I had my daypack to carry it out	• If I did not have anywhere to put it
3 (18 Feb 06)	Presence of a rubbish bin	 Nothing (doesn't matter how awful the rubbish is)
Etc.	• Etc.	• Etc.

Figure 3. Abbreviated example of preliminary elicitation results for compliers only (behaviour: picking up rubbish on Russell Falls track, Tasmania).

Group and label the salient beliefs according to shared meanings

Now you need to classify the responses for each question according to what you think are common or shared meanings. To do this, you (or a member of your staff with some research experience) acts as a 'judge', eyeballing the responses first to questions 1 and 2 (which relate to behavioural beliefs) and identifying some common themes that appear to emerge from the responses. As you work through this process, you give each grouping of like beliefs a label or heading. In this way, you begin to put similar responses to each question together, so that you end up with groups of responses under each question that seem to be saying the same thing. The label you decide to give each group of belief statements will come from the meaning you think the beliefs share.

For example, you can see in Figure 3 that person 2 and person 3 both believe that if they pick up a piece of rubbish they'll be setting a good example for other people. Seeing this, you'd probably want to establish a belief category labelled something like 'Sets a good example'. Similarly, all three visitors mentioned that removing rubbish helps preserve the track's natural beauty or prevents it from becoming ugly. These responses might lead you to establish another belief category labelled 'Keeps the park beautiful/not ugly'. You simply continue in this way, establishing and labelling categories, and grouping similar beliefs into them.

When you've finished classifying the behavioural beliefs, just repeat these procedures for questions 3 and 4 (normative beliefs) and questions 5 and 6 (control beliefs).

Avoid redundancy from the same visitor

Be aware that a given visitor might state the same belief more than once. To avoid artificially inflating the percentage of time each labelled category is used, be sure to count only *one* of these comments, or combine them all in a single statement. For example, if a visitor says that 'picking up rubbish helps keep the track beautiful' and then later in the interview says, 'the walk to the falls would be appalling to the eye,' you would count these as just one comment in the 'Keeps the park beautiful/ not ugly' category. To capture this visitor's actual words, you might even combine the two statements as 'keeps the track beautiful and not appalling to the eye.'

The label you decide to give each group of belief statements will come from the meaning you think the beliefs share.

The idea is simply to look through all the stated beliefs for each question and to make some decisions about which ones seem to go together. This is a subjective process. You certainly want to be as accurate as you can be, but you also know it's possible that someone else might do things a little differently. So before making any decisions about the beliefs you'll take forward to Step 3, you'll want to check your classifications against the opinions of a couple of other people. Fortunately, there's an easy way to do this.

Make sure your grouped belief labels are reliable

It's not easy to be objective and unbiased in doing these classifications, so take care to ensure that the labels you assign to each group of responses make clear sense. Having done this, you'll now want to check your initial classification scheme against other people's ideas for how the various responses should be grouped. One way to do this is in a group discussion in which two other people are invited to independently classify each visitor's statements under the labels you've provided. Any disagreements in how the three of you have classified a given statement should be discussed. If consensus is reached on how that statement should be classified, then it remains in the pool. However, when discussion doesn't reach consensus, you should consider that statement as

If a visitor expresses the same belief multiple times, you should *count it only once*. ambiguous and delete it from the pool. In some cases, you and your two colleagues may see the need to establish one or more new belief categories in order to resolve disagreements, and that's fine.



Following these procedures helps ensure the reliability of the group labels and increases the likelihood that the beliefs targeted in future messages will be accurately expressed. Once your labels and belief groupings are acceptable to the three of you, you're ready to make final decisions about which beliefs should be taken to the next step.

Identifying beliefs for further measurement

The result of this sort of classification could look like the example in Figure 4. Take a moment to look through the results for each type of belief. Notice in the behavioural belief category that relatively large percentages both of compliers and non-compliers expressed the belief that picking up rubbish keeps the park beautiful/not ugly. Although the belief is commonly held, it appears to be equally common among compliers and non-compliers. The same is true of the beliefs that picking up rubbish prevents harm to wildlife and that it prevents contamination other than to water. All three of these beliefs are of interest to us because they're commonly held. But later (in Step 3) if we discover that both groups (compliers and non-compliers) already hold these beliefs strongly, we would probably not want to include them in future messages since we would gain little by telling non-compliers what they already think. Nevertheless, for the moment we decide to carry these three commonly held beliefs to the next stage of research. It's then that we'll determine more precisely whether they'd be useful to emphasise in a persuasive communication message.

Continuing our 'eyeball' analysis of the beliefs, we note the large percentage of compliers who believe that picking up rubbish sets a good example for other track walkers. It seems to be a commonly held belief among compliers, but comparatively few non-compliers mentioned it. This catches our attention because we know that later (in Step 3) we'll be looking for beliefs to target that are different between the two groups. While we really can't determine the importance of any belief until then, we can see from these elicitation results that 'setting a good example for others' might well prove useful in a message since it seems to distinguish compliers from non-compliers. So we decide to add it to the other three beliefs we'll take to Step 3.

You're wise to pay special attention to the beliefs that most people say they have, and to pay less attention to those that are rarely or infrequently mentioned.

From this analysis, we've identified four salient behavioural beliefs to carry forward to the next step in our decision making process:

Picking up rubbish encountered on the Russell Falls track:

- helps keep the park beautiful/not ugly
- prevents harm to wildlife
- prevents other kinds of contamination (not water)
- sets a good example for others

Behavioural Beliefs

Question 1: What do you see as the advantages or good things that could occur if you pick up rubbish from the track?

	Belief label:	Compliers (n=14)	Non-compliers (n=15)
1.	It keeps the park beautiful/not ugly (aesthetics)	11 (79%)	9 (60%)
2.	Avoids health hazards	1 (7%)	1 (7%)
3.	Prevents harm to wildlife	8 (57%)	11 (73%)
4.	Prevents water contamination	3 (21%)	2 (13%)
5.	Sets a good example for others	10 (71%)	1 (7%)
6.	Prevents other kinds of contamination (other than water)	8 (57%)	8 (53%)
7.	Good for park management	1 (7%)	0 (0%)
8.	Prevents pests	1 (7%)	0 (0%)
9.	Prevents fire hazards	0 (0%)	3 (20%)
10.	I will make money from recycling	0 (0%)	1 (7%)

Question 2: What do you see as the disadvantages or bad things that could occur if you pick up rubbish from the track?

	Belief label:	Compliers	Non-compliers
1.	Inconvenience of having to carry the rubbish	3 (21%)	1 (7%)
2.	I could injure myself/others (e.g. children)	4 (29%)	3 (20%)
3.	It's dirty/messy	4 (29%)	3 (20%)
4.	Disturbance of rubbish that has become part of the environment	1 (7%)	0 (0%)
5.	Nothing	1 (7%)	6 (40%)

Normative Beliefs

Question 3: Who (individuals or groups whose opinions you consider personally influential) do you think would support or approve if you pick up rubbish from the track?

	Belief label:	Compliers	Non-compliers
1.	Spouse/children/grandchildren/partner/parents	4 (29%)	4 (27%)
2.	Neighbours/friends (not with me)	2 (14%)	1 (7%)
3.	Friends/others with me or who can see me	4 (29%)	1 (7%)
4.	Parks staff	4 (29%)	5 (33%)
5.	People I work with	1 (7%)	0 (0%)
6.	Nobody	4 (29%)	3 (20%)

Question 4: Who (individuals or groups whose opinions you consider personally influential) do you think would object or disapprove if you pick up rubbish from the track?

	Belief label:	Compliers	Non-compliers
1.	Spouse	1 (7%)	0 (0%)
2.	Nobody	12 (86%)	13 (87%)
3.	Other track users	0 (0%)	1 (7%)

Figure 4. Example results when salient beliefs are classified under common labels (behaviour: picking up rubbish on Russell Falls track, Tasmania).

Control Beliefs

Question 5: What factors or circumstances enable or make it easy for you to pick up rubbish from the track?

	Belief label:	Compliers	Non-compliers
1.	Nothing	2 (14%)	2 (13%)
2.	A means to pick-up and carry the rubbish	4 (29%)	4 (27%)
3.	Knowledge/presence/visibility of rubbish bins	6 (43%)	7 (47%)
4.	Convenient/easy access to rubbish	2 (14%)	1 (7%)
5.	Physical ability	1 (7%)	1 (7%)

Question 6: What factors or circumstances make it difficult for you to pick up rubbish from the track?

Belief label:		Compliers	Non-compliers
1.	Nothing	4 (29%)	6 (40%)
2.	No rubbish bins (or not close by)	3 (21%)	1 (7%)
3.	Rubbish is inaccessible	3 (21%)	5 (33%)
4.	Physical incapability	4 (29%)	2 (13%)
5.	No means of carrying the rubbish	0 (0%)	2 (13%)

Figure 4 (continued).

At this point, we would probably eliminate all the remaining beliefs from the pool simply because they don't appear to be as commonly held by either group.

Recap

Your goal at the end of this process was to have a fairly clear idea about which of the visitors' salient beliefs would be best to use in the remainder of the study. The decisions you made were ultimately subjective, but you gave yourself some reassurance by making sure your classification was agreeable and acceptable to two other people.

Using this classification, you then looked mainly for belief categories that were the most commonly mentioned by the visitors you interviewed. These were fairly obvious choices. And as you further examined these commonly held beliefs, you were especially interested in the ones that were more prevalent among one of the groups than the other (compliers vs. non-compliers).

You were not as interested in belief groupings that had very few responses because the beliefs contained in them were not very commonly held. You shouldn't be guided entirely by the percentages, as your sample was not a random one. But generally speaking, you're wise to pay special attention to the beliefs that most people say they have, and to pay less attention to those that are rarely or infrequently mentioned.

Reasoning this way, you'll be able to select which beliefs from each category to take to Step 3. And you can say goodbye to the rest.

Don't worry if you don't find at least one belief in each of the three categories (behavioural, normative and control) to be worthy of further analysis. This is unimportant. In fact, experience in PA settings has shown that behavioural beliefs usually dominate. That is, it's very common to find that one or more behavioural beliefs turn out to be important for further measurement.

Don't worry if you don't find at least one belief in each of the three categories (behavioural, normative and control) to be worthy of further analysis. This is unimportant. Normative beliefs sometimes, but not nearly as often, also emerge as being potentially important. The reasons for this vary, but a lot of times it simply depends on the behaviour you're after. In the case of some behaviours, visitors just don't feel much social pressure at all, but other behaviours might be very sensitive to social influence. Control beliefs rarely turn out to be important in PA settings, mainly because managers usually don't ask on-site visitors to do things they feel incapable of doing. That is, the behaviours PAMs want their visitors to engage in are almost always easy to do, as long as pre-arrival knowledge and preparation weren't required.



STEP 3: IDENTIFYING BELIEFS TO TARGET WITH PERSUASIVE COMMUNICATION

Now that you've identified visitors' salient beliefs about a target behaviour, you need to determine which of them would be best to include in persuasive communication messages. As mentioned earlier. these will be the beliefs that are most different for people who already behave appropriately (the compliers) and those who don't (the noncompliers). To identify these most discriminating beliefs, you have to conduct a second study that measures each salient belief and then compare these measures between a sample of compliers and a sample of non-compliers. You'll get these measures using a questionnaire that you give to visitors to fill out.

Any TPB questionnaire asks two questions for each salient belief. These questions correspond to

the two parts of each belief that were discussed on pages 2-4. For all three kinds of beliefs there's a measure. Then, depending on whether you're measuring a behavioural belief, a normative belief, or a control belief, there will respectively be an evaluation measure (good-bad), a motivation to comply measure (important-not important to do), or a power measure (makes it easier-more difficult).

In the shaded box below are examples of the kinds of question pairs that could be used to measure selected salient beliefs about staying on a designated walking track (Appendix C shows an example of a full questionnaire):

FOR BEHAVIOURAL BELIEFS:

Belief strength: If I always stay on this designated walking track, I will have less impact on the

natural environment. EXTREMELY UNLIKELY ___ ___ ___ ___ EXTREMELY LIKELY

Evaluation: Lessening my impact on the natural environment is:

BAD ____ GOOD

FOR NORMATIVE BELIEFS:

Belief strength: I believe that other track walkers think:

I SHOULD NOT ____ I SHOULD

always stay on the designated walking track.

Motivation to comply: When it comes to always staying on the designated walking track, doing

what other track walkers want me to do is: NOT AT ALL IMPORTANT TO ME ____ ___ ___ ___ VERY IMPORTANT TO ME

FOR CONTROL BELIEFS:

Belief strength: There is a high fence along the track that could influence whether I stay on the track.

FALSE ____ TRUE

Power: The high fence along the track makes staying on the track:

MORE DIFFICULT FOR ME ____ ___ EASIER FOR ME

Developing a TPB questionnaire

Notice in the example on page 21 that one of the salient beliefs you identified under the behavioural belief category is that the behaviour will lessen impact on the environment. To determine the strength of this belief, you need a question that measures how likely a visitor believes the behaviour will actually have this consequence. And you need a second question that measures how good or bad your visitor believes this outcome to be.

Of course, you'd then craft questions for any salient beliefs you identified under the normative belief category and the control belief category. Appendix C shows an example questionnaire that includes each type of belief—questions 1 through 8 correspond to behavioural beliefs, questions 9 through 12 correspond to normative beliefs, and questions 13 through 16 correspond to control beliefs. While there are other ways to word the questions and response options, we've considered a wide range of issues before settling on this format, and we strongly recommend that you follow the model given here and in Appendix C.

Once you've developed question pairs for each salient belief you want to measure, you can add any socio-demographic questions you think would be useful to include. You now have a draft belief measurement questionnaire, designed for selfcompletion by visitors in protected area settings. Before taking it to the field, however, it's a good idea to pre-test the questionnaire in order to make sure each question is clear to respondents and that the amount of time they need to complete the questionnaire isn't excessive.

TIP! Sometimes visitors adopt a patterned 'response set' and just go down the list of questions giving the same response to each one without really thinking about what the question is asking. A good way to prevent this is to alternate the positive and negative ends of successive questions so that visitors have to read and consider each one carefully. You'll see this technique in the questionnaire in Appendix C. Note the reversing of 'Likely,' 'Unlikely,' Good,' 'Bad,' Should,' 'Should not,' etc. in successive questions. See also pages 59–62.

In most cases, you should find that you have a questionnaire that takes a visitor no more than 10 minutes to complete. If it takes more than 10 minutes, you might delete some of the sociodemographic questions you added. If after doing this the questionnaire still takes more than 10 minutes, you might want to consider reducing the number of beliefs you're measuring. You can always include them in a future questionnaire if none of the remaining beliefs turn out to be good discriminators between compliers and non-compliers.

You should find that you have a questionnaire that takes a visitor no more than 10 minutes to complete.

Field methods

It's now time to take your questionnaire to the field and collect real data from real visitors. There really is no standard or best way to do this, but whichever approach you adopt, just make sure you do it that way *consistently*, using the same methods every day you're in the field. Being consistent ensures that you won't unknowingly bias your results.

Who should hand out the questionnaires?

Any adult with good interpersonal skills who is well-groomed and knows how to smile can collect the data. For obvious reasons, we recommend against uniformed staff handing out questionnaires because of the bias it could exert, but nonuniformed staff and volunteers make good data collectors. If there's a university nearby, you might even contact a staff member in one of behavioural science departments to request student help. Being part of a real study is great experience and many academic staff would be happy to get their students involved.

Approach each visitor at a time and in a place that are convenient for them to fill out the questionnaire. There's no single best way to make the request but it's important, especially when approaching noncompliers, that you don't inadverently express disapproval of their behaviour. One method for avoiding this sort of bias is shown in Appendix D which includes the verbal instructions for data collectors in a TPB study in Tasmania. Note how data collectors are careful not to judge the behaviour of non-compliers.

Which visitors should I ask to complete the questionnaire?

It's important that you select visitors using random sampling methods and that you get an adequate sample size, say 50 completed questionnaires for both compliers and non-compliers (100 total). To do this, you must be able to identify compliers and non-compliers readily, since you'll want to select a separate sample from each group. (If you find it difficult to get an adequate sample of the noncompliers in a reasonable time period, then it's quite possible the problem you identified isn't as pressing as you first thought.)

The easiest way to get separate random samples of compliers and non-compliers is to designate different data collection days for each group. On each day, you would approach every nth visitor who crosses some reference point or imaginary line, and ask them to fill out your questionnaire. You yourself set the value of 'n' according to how frequently you're able to observe the behaviour of interest that day (compliance or non-compliance). On days when the behaviour isn't very frequent, you might want to set n at 2 (that is, approaching every other visitor). On especially slow days, you might even want to approach every person (i.e., n = 1). On busy days, you might set n at 5 or higher to give yourself time for a breather between contacts.

It's important that you select visitors using random sampling methods and that you get an adequate sample size, say 50 completed questionnaires for both compliers and non-compliers (100 total).

Coding and making sense of your results

Once you have the completed questionnaires in hand, you'll want to assign numbers to each visitor's responses so that you can calculate the average scores for each question. This is called 'coding.' In the end, you'll compare compliers' and non-compliers' mean scores for each belief as a way to determine which of those beliefs you should target in your messages.

We recommend coding each question on a sevenpoint scale as shown on page 24. Note that the seven numbers you actually use in the scale will vary depending on the kind of belief, and which part of it you're measuring.⁶ Although the reasons for this are important in psychological measurement, they won't affect how you interpret and make sense of the results. Consequently, we won't discuss them here. But if you're interested in the rationale behind the coding scheme for each type of question, you'll find an explanation in Appendix E.

To obtain the score for any belief, just multiply its first measure by its second measure. The result of each multiplication is called a 'cross-product'. For example, you get the cross-product for each *behavioural* belief by multiplying its strength measure (unlikely-likely) by its evaluation measure (bad-good). Similarly, you calculate a *normative* belief cross-product by multiplying its strength measure (I should not-I should) by the motivation to comply, and a *control* belief cross-product is obtained by multiplying its strength measure (truefalse) by its power measure (easier-more difficult).

You can see in the example on page 24 that the range of possible cross-products is from -18 to +18, with 0 exactly halfway between the two extremes. The general way to interpret a cross-product is that the higher (more positive) the number, the greater the person's tendency to carry out the behaviour, and conversely, the lower (more negative) the number, the greater the person's tendency *not* to carry out the behaviour. If the cross-product approaches zero, the belief doesn't have an effect either way on the person's behaviour.

⁶ We show the numerical values on page 24 only so you can see how to code each visitor's responses. But note on page 21 and in Appendix C that the questionnaire your visitors see would not show these numbers. They are literally your secret code.

FOR BEHAVIOURAL BELIEFS:

Belief strength:

If I always stay on this designated walking track, I will have less impact on the natural environment. EXTREMELY UNLIKELY <u>0 1 2 3 4 5 6</u> EXTREMELY LIKELY

Evaluation:

Lessening my impact on the natural environment is:

BAD <u>-3</u> <u>-2</u> <u>-1</u> <u>0</u> <u>1</u> <u>2</u> <u>3</u> GOOD

FOR NORMATIVE BELIEFS:

Belief strength:

I believe that other track walkers think:

I SHOULD NOT <u>-3</u> <u>-2</u> <u>-1</u> <u>0</u> <u>1</u> <u>2</u> <u>3</u> I SHOULD

always stay on the designated walking track.

Motivation to comply:

When it comes to always staying on the designated walking track, doing what other track walkers want me to do is:

NOT AT ALL IMPORTANT TO ME 0 1 2 3 4 5 6 VERY IMPORTANT TO ME

FOR CONTROL BELIEFS:

Belief strength:

There is a high fence along the track that could influence whether I stay on the track.

FALSE <u>0 1 2 3 4 5 6</u> TRUE

Power:

The high fence along the track makes staying on the track:

MORE DIFFICULT FOR ME <u>-3</u> <u>-2</u> <u>-1</u> <u>0</u> <u>1</u> <u>2</u> <u>3</u> EASIER FOR ME

In other words:

-18	0	+18
Belief strongly	Belief has	Belief strongly
<i>disfavour</i> s the	no influence	<i>favours</i> the
behaviour	on the behaviour	behaviour

Remember that when you multiply a positive number by a negative number, the result is always negative. Consider, for example, the behavioural belief of a visitor who rated the likelihood of a particular outcome as 1 (i.e., the outcome is possible but *very unlikely*) and who also evaluated that outcome as extremely *bad* (-3). The person's cross-product (1 X -3) would be -3, which indicates

To obtain the score for any belief, just multiply its first measure by its second measure. The result of each multiplication is called a 'cross-product'.

a slightly negative attitude to the behaviour. Similarly, a person who rated the outcome as *extremely likely* (6) and *extremely bad* (-3) would have a cross-product of -18 (which indicates a strongly negative attitude to the behaviour).

Take a moment to look at the possible reasons for extreme cross-products shown in Figure 5.

	Reasons for an extremely negative cross-product -18	Reasons for a zero cross-product 0	Reasons for an extremely positive cross-product +18
Behavioural belief	- Person believes it's <i>extremely likely</i> that a <i>bad</i> outcome will occur (6 X -3)	 Person believes there's no chance that the outcome will occur (0 X any number), or Person believes that the outcome is neither good nor bad (any number X 0) 	- Person believes it's <i>extremely likely</i> that a <i>good</i> outcome will occur (6 X 3)
Normative belief	- Person believes that a given social referent would strongly <i>disapprove</i> of the behaviour and is extremely <i>motivated</i> to do what the social referent wants (-3 X 6)	 Person believes that the social referent <i>doesn't care</i> one way or the other about the behaviour (0 X any number), or Person is extremely <i>unmotivated</i> to do what the social referent wants (any number X 0) 	- Person believes that a given social referent would strongly <i>approve</i> of the behaviour and is extremely <i>motivated</i> to do what the social referent wants (3 X 6)
Control belief	- Person believes strongly that a given <i>inhibiting factor</i> <i>exists</i> (6 X -3), or	 Person believes that the <i>factor doesn't exist</i> (0 X any number), or Person <i>isn't sure</i> whether the factor would make the behaviour easy or difficult (any number X 0) 	- Person believes strongly that a given <i>facilitating factor</i> <i>exists</i> (6 X 3)
Influence on behaviour	Creates a strong tendency not to carry out the behaviour	Belief has little or no influence on the behaviour	Creates a strong tendency to carry out the behaviour

Figure 5. How to interpret cross-products.

As you look at the scenario described in each cell of the table, try to put yourself in the position of the person whose beliefs are being described. Imagine a behaviour for which your beliefs would be the same as that person's. In this way, you can convince yourself that the magnitude of any cross-product actually tells you something about the thinking of the person. This will be important shortly when we compare and try to make sense of the differences between compliers' and noncompliers' beliefs.⁷

An abbreviated example

Here's how it works:

Let's say that the young woman in our earlier example was one of the compliant visitors (i.e., she stayed on the track) and that you randomly selected her to fill out your questionnaire. Imagine now that she answered the six belief questions as shown in Figure 6. You would code her responses this way:

Behavioral belief strength = 6

Evaluation = 3

Behavioral belief cross-product= 6 X 3 = 18 (she believes the outcome is both very likely and very good)

Now say that three other compliers⁸ also filled out the questionnaire and that you ended up with the results shown in Figure 7 (note that Visitor 1 is the young lady in our example).

For now, the most important results are the three mean cross-products since these are the numbers you'd compare to a sample of non-compliers in order to see if any of them were obviously quite different. Since the range of possible cross-product scores is from -18 to +18 (with a mid-point of 0), you can see that the mean behavioural belief cross-product of this small sample of visitors (16.50) is quite strong, indicating that their belief about reducing environmental impact figures prominently in their decision to stay on the track.

Normative belief strength = 0 Motivation to comply = 2

Normative belief cross-product = $0 \times 2 = 0$ (she doesn't believe other walkers care very much whether she stays on the track, and even if she did, she is little motivated to do what they want)

Control belief strength = 5 *Power* = 1

Control belief cross-product = $5 \times 1 = 5$ (she's fairly certain the fence exists and that it makes on-track walking only slightly easier, presumably by inhibiting off-track access)

For any given belief, the higher and more positive its crossproduct, the more that particular belief leads the person to comply with your target behaviour

Their normative belief about other track walkers is moderately strong (9.25), indicating that they feel some but not a great degree of social pressure to stay on the track.

By comparison, however, their control beliefs are weak (3.25, which is only slightly above the midpoint). The facilitator (a high fence in this case) doesn't seem to have much influence on whether these visitors think it's easy or difficult to stay on the track.

If these same average cross-products resulted from the responses of 50 or more visitors, you would probably be safe in assuming that the people who choose to stay on the track do so in part because they believe that it will lead to a very desirable result (reducing their impact on the environment), and because they see it as a socially desirable thing to do.

⁷ As you can see in Figure 7, when you sum all the behavioural belief cross-products for a given person, you've calculated that person's attitude to the behaviour. Summing the normative belief cross-products gives you the person's subjective norm. And summing the control belief cross-products gives you the person's perceived behavioural control.

⁸ Of course, we're saying 'three additional people' here only as an illustration. In a real study, you'd want to have at least 50 compliers and 50 non-compliers to get meaningful results.

FOR BEHAVIOURAL BELIEFS:					
Belief strength:					
EXTREMELY UNLIKELY X	EXTREMELY LIKELY				
Evaluation:					
Lessening my impact on the natural environment is:					
BAD X (GOOD				
For normative beliefs:					
Belief strength:					
I believe that other track walkers think:					
I SHOULD NOT X I	SHOULD				
always stay on the designated walking track.					
Motivation to comply: When it comes to always staying on the designated walking track, do me to do is:	bing what other track walkers want				
NOT AT ALL IMPORTANT TO ME X	VERY IMPORTANT TO ME				
FOR CONTROL BELIEFS:					
Belief strength:					
I here is a high fence along the track that could influence whether I s	стау оп тпе тгаск.				
FALSE	TRUE				
Power: The high fence along the track makes staving on the track:					
	EASIER FOR ME				

Figure 6. One visitor's answers to the six questions.

	Behavioural belief strength	Evaluation	BB Cross- product	Normative belief strength	Motivation to comply	NB Cross- product	Control belief strength	Power	CB Cross- product
Visitor 1	6	3	18	0	2	0	5	1	5
Visitor 2	5	3	15	2	5	10	6	-1	-6
Visitor 3	6	3	18	3	4	12	5	2	10
Visitor 4	5	3	15	3	5	15	4	1	4
Average (mean)	5.50	3.00	16.50	2.00	4.00	9.25	5.00	0.75	3.25

NOTES: BB denotes 'behavioural belief'; NB denotes 'normative belief'; CB denotes 'control belief.

Figure 7. Mean belief scores and cross-products of compliers (people who stay on the track).

Recap

In summary, you can see that cross-products can range from -18 to +18. For any given belief, the higher and more positive its cross-product, the more that particular belief leads the person to comply with your target behaviour (+18 is ideal in this sense). A cross-product of -18 would tell the opposite story, of course. When the cross-product hovers around 0 (the mid-point), the belief isn't having much of an effect on the person's thinking either way.

A more complete example—isolating beliefs to target with persuasive messages

The foregoing example showed you how to develop a belief measurement questionnaire, code visitors' responses, and calculate cross-products. In a real study, of course, there might be more than one belief in each category, and so you'd need to do this same analysis for each belief.

In addition, recall that the main reason we're even calculating these mean cross-products is to compare them to the same cross-products for a sample of non-compliers. So while the results we've looked at so far are of some value, they don't yet tell us whether any of the beliefs we've measured would actually be worth targeting in a persuasive communication message. That's what the next example (adapted from a real TPB study of off-track walking) will show you how to do.

Continuing our ongoing example, let's say that your ultimate aim is to persuade visitors to stay on a particular walking track at your park. Your elicitation study revealed four commonly held behavioural beliefs as being potentially important to target. However, it identified no normative or control beliefs of possible interest. That means you can forget the other beliefs and focus your full attention only on these four behavioural beliefs.

Collect separate random samples of compliers and non-compliers

Following the guidelines on the previous pages, you developed a questionnaire to measure the strengths and evaluations of each of the four behavioural beliefs. You then randomly selected 50 known compliers and 50 known non-compliers and obtained responses from each of them. Finally, you coded their responses as described on pages 23–27. At this point, you're ready to analyse your data and make decisions about which, *if any*, of the four beliefs would be best to target in persuasive messages.

Calculate mean cross-products for each belief

Since you're going to be comparing the crossproducts of compliers and non-compliers, you'll need to keep their questionnaires apart from one another and do separate analyses. It doesn't matter which you start with, but for the sake of example, let's say you start with the questionnaires from the 50 compliers.

Starting with the first of the four beliefs, you multiply each complier's belief strength and evaluation in order to get every person's cross-product for that belief. You then add up all the cross-products and divide by the number of people (50 in this case) to get the mean cross-product. Of course, you'll now repeat this procedure for the second, third and fourth beliefs.

When you're done, you'll have the compliers' four mean cross-products as well as their average belief strengths and average evaluation scores for each of the four beliefs.⁹ As above, to calculate a mean for any belief or cross-product, just add up everyone's scores and divide by the number of people.

⁹ As mentioned previously, if you now added up just the crossproducts, you'd have a quantitative measure of the compliers' attitude to the behaviour. If you did the same thing with the noncompliers' cross-products, you should find that the compliers' attitude to the behaviour is more positive (a larger number) than the noncompliers' attitude. If it isn't, then your elicitation study in Step 2 probably didn't do a very good job of identifying actual salient beliefs, or perhaps you weren't very accurate in deciding who was a complier and non-complier when you collected your data in Step 3. Either way, you're advised to start over with a new elicitation.

To calculate a mean for any belief or cross-product, just add up everyone's scores and divide by the number of people.

Now repeat these steps using the questionnaires completed by the non-compliers. Once you have the four mean cross-products, the four average belief strengths, and the four average evaluations for both samples (compliers and non-compliers) you're ready to make comparisons and determine whether any of the four beliefs would be good to target in your persuasive communication messages.

Compare compliers with non-compliers and decide on target beliefs

The average belief strengths, evaluations and cross-products for the four behavioural beliefs are shown in Figure 8. Comparing the mean crossproducts of compliers and non-compliers, you can see that there's very little difference between the two groups in three of the four beliefs (reducing environmental impact, being safer, and feeling more crowded). This means that compliers and non-compliers think alike with respect to these consequences of staying on the track. So obviously, targeting these beliefs in messages would have little benefit since the messages would be telling visitors what they already believe.

However, a wide difference in cross-products does show up in one of the beliefs. Specifically, the non-compliers have a much more negative cross-product for the belief that staying on the track will cause them to miss out on good views (-10.98 versus just -2.31 for compliers). You can see in these results that the compliers' cross-product for this belief is essentially neutral (approaching zero) whereas the non-compliers' cross-product is decidedly negative. The difference between the two (8.67) is large whereas the differences in the other cross-products are very small. This tells us that this behavioural belief has more potential than any of the others in a persuasive communication effort. Of all the salient beliefs we identified in the elicitation. and of the four we selected for measurement in this phase of the research, it's the only belief that actually distinguishes compliers from noncompliers. Remembering that our communication strategy will always be to persaude potential noncompliers to think more like compliers, you can see that it's the only belief worth targeting in a

	Mean Belief Strength (range 0 to +6)		Mean Evaluation (range -3 to +3)		Mean Cross- product (range -18 to +18)		
Belief							Difference
If I stay on the designated track	С	NC	С	NC	С	NC	and NC
' I will reduce my environmental impact'	5.62	5.66	2.89	2.88	16.70	17.10	.40
' I will be safer'	5.28	5.22	2.81	2.79	15.06	15.02	.04
' I will miss out on getting good views'	1.16	5.35	-1.91	-2.07	-2.31	-10.98	8.67
' I will feel more crowded'	1.88	1.98	1.78	1.78	5.04	5.10	.06

Figure 8. Strengths, evaluations and cross-products of salient beliefs about staying on the designated track for compliers (C) and non-compliers (NC).

persuasive communication message.

Pinpoint your message by looking at both parts of each belief

Since any behavioural belief measurement is made up of two parts (its strength component and its evaluation component), we'll get additional help in deciding on message content by looking at the means associated with each component. Comparing compliers' and non-compliers' strengths and evaluations for this belief, you can see that although both thought the outcome of getting inferior views was fairly negative (-1.91 and -2.07, respectively), the large difference in cross-products is due to the fact that compliers didn't believe missing out on good views was nearly as likely a consequence of staying on the track as did non-compliers (just 1.16 versus 5.35). Our communication strategy would therefore be to persuade potential non-compliers that the best views are indeed available to them from the designated track (i.e., that they don't have to give up the best views by staying on the track). Obviously, we would gain little by trying to convince them that getting inferior views is a good outcome. Even the compliers don't believe that.

You can see from this example that finding such differences between the beliefs of compliers and non-compliers is the main way for you to identify beliefs to target in a persuasive communication effort. Studies indeed show that if you can influence these discriminating beliefs then you increase your chances of influencing the behaviour. In this case, it's clear that if we can persuade track walkers that they won't miss good views by staying on the track, their attitude toward staying on the track should be more positive, which would increase the likelihood of their actually doing it. This type of reasoning will be important when you decide on message content and persuasive appeals. Generally you'll want your messages to emphasise to all visitors what compliers already believe.

You might be interested to know that messages targeting this belief (that staying on the track will lead to great views) were experimentally tested in a

Finding differences between the beliefs of compliers and noncompliers is the main way you identify beliefs to target in a persuasive communication effort.

real study at Port Campbell National Park, Victoria in 2005^{.10} The results showed that some of the messages had a strong positive impact on walkers' attitudes to staying on the designated track.

Of course, if your elicitation study led you to include normative and/or control beliefs in your questionnaire, you would do the same kind of comparisons with each of them. That is, you would first compare compliers' and non-compliers crossproducts on each normative and control belief. By comparing the cross-products visually¹¹ you can identify beliefs that are the most discriminating between compliers and non-compliers, and these will be the beliefs you should target in your messages. Where large differences occur you would then compare the compliers' and noncompliers' belief strengths and motivations to comply (for normative beliefs) and their belief strengths and power ratings (for control beliefs) to try to pinpoint the source of the difference between the two groups.

¹⁰ Ham & Weiler (2005).

¹¹ We emphasise 'visual' here to indicate that you can see wide discrepancies between the mean cross-products of compliers and non-compliers without the need for further statistical analysis. However, an experienced social scientist would probably want to determine whether any observed differences in means were statistically significant. When differences are not as conspicuous to the eye, being able to do this can be advantageous. However, large differences are usually detectable with the eye alone. As long as you have enough people in your sample and they were randomly selected, visual inspection of the two means will usually be adequate to identify beliefs with persuasion potential.

STEP 4: DEVELOPING YOUR PERSUASIVE MESSAGES¹²

Now that you've identified the target beliefs associated with the behaviour of interest, you can begin to think about how to communicate a message to persuade visitors to comply with it. In this step, we turn our attention to crafting message content to influence visitor behaviour.¹²

In practice, it's best for a number of people to be involved in the message creation process, perhaps in a brainstorming workshop format. Write out the target belief(s) you identified in Step 3 and the desired behaviour stated in Step 1 so that everyone can see them and constantly refer to them through the message creation process. This will keep you focused on what you need to accomplish.

Targeted beliefs and the desired behaviour are the message foundations

The preferred behaviour you identified in Step 1 and the target belief(s) you identified in Step 3 form the foundation for the messages you create. Generally, the preferred behaviour is used as the basis for communicating to visitors *what* you want them to do (how to behave). However, the belief you're targeting will tell you what sort of benefits or rationale for the behaviour to include in your message. That is, *why* visitors should behave as you want.

For example, the managers of a regional park in Western Australia wanted to persuade people not to let their dogs off the lead in an on-lead area. Results both from the elicitation and belief measurement surveys found the target belief to be that other dogs and people in the park could be annoyed by dogs being off the lead. It was also found that dog walkers thought that other dogs and people being annoyed was a bad outcome. So the managers developed a signboard message targeting this belief. This was accomplished both in the title and main text of the sign (Figure 9). The bold text at the bottom of the sign reinforces both the target belief and the desired behaviour.

It's best for a number of people to be involved in the message creation process.

🗞 'My dog a nuisance?'

Dog walkers here at Yellagonga Regional Park are complaining about unrestrained dogs. Even if your dog is cute and friendly, it can still annoy other dogs and people when you allow it to run free.

Yellagonga is part of Perth's regional park system where dogs have to be on a lead at all times.

Avoid irritating other dogs and people. Please keep your dog on a lead!

Environment and Conservation

Figure 9. Example of a sign that targets a salient belief.

Elaboration is the ideal

A central part of writing a persuasive message is ensuring it encourages visitors to give considered thought to what you're saying, that is, to elaborate. Elaboration is simply the process of thinking hard about and processing a message. When visitors process a message about a behaviour, they may think of arguments in favour of the message, but they may also think of arguments against the message. The more we're able to stimulate visitors to think favourably about the message, the better chance we'll have of influencing their beliefs in the desired direction, and the stronger will be our impact on their attitude and behaviour.¹³

¹² The technical design and layout of a message (e.g., font, graphics, imagery, sound, etc.) aren't addressed in this manual. Your organisation probably requires specific design standards or offers guidelines. You should enquire about these. Two very good books on design principles and signage are Moscardo, Ballantyne & Hughes (2007) and Trapp, Gross & Zimmerman (1991).

¹³ Of course, the 'weaker path' influence shown in Figure 2 remains possible even when effortful thought doesn't occur. But our goal in developing the message would always be to provoke as much thinking as possible.

Encouraging visitors to elaborate

There are two main ways we can get visitors to think about and process what we're telling them. The first is to make it *easy* for them to process the message. The second is to motivate them to engage with the message by making it strongly *relevant*, that is, connecting it to what matters to them at the moment.

Making messages easy to process

You can make a message easy to process by keeping it short and by using language and sentence structure that are easy to read and digest. Try to keep sentences to no more than 20 words each, and maintain readability at about the ninth grade level for adult audiences. You can use the readability results in Microsoft Word's spell check to view these statistics and make adjustments according to what they tell you.

Making messages relevant

Making messages highly relevant to visitors will motivate them to think about and process what you're saying. One way to achieve this is to personalise your message. Making generous use of personal words such as 'you', 'my' or 'your' is a good method. For example, if a message to dogowners about keeping dogs on a lead contains the words 'you' and 'your dog', it puts the reader in the picture and focuses attention on his or her pet, giving even more reason to think about the message. Include mainly information that's likely to be familiar or known to the visitor. For example, if you want experienced bushwalkers to think more about carrying out their rubbish from an overnight bushwalk, you might want to talk about the kinds of rubbish they're likely to have with them, and what it looks and feels like, thereby connecting with what they already know are the challenges of packing it out. In addition, references to universally-relevant emotions such as sadness, joy, anger, hate, fear, love, and awe will motivate engagement and thinking.¹⁴

You can also strengthen the relevance of a message by appealing to a *personal norm* or a *subjective norm*. The two types of norms are different and involve different kinds of appeals.

A personal norm is a person's self-imposed moral obligation to act according to her or his sense of what is 'right' to do in a given situation, irrespective of what other people might think. When your message appeals to a personal norm, it's asking visitors to do what their conscience or scruples tell them is 'right'. The titles of the two signs in Figure 10, 'If not you, who?' and 'Need a good night's sleep?' are examples of ways in which personal norms have been used in persuasive communication messages in Australian national parks. Note that the personal norm is also reinforced with the last sentence in each sign.

Appealing to a subjective norm (as in the TPB)¹⁵ is another way to strengthen the relevance of a message. Subjective norms refer to perceived social pressure to behave in a certain way, or what a visitor feels is 'best' to do based on what other people think. When your message appeals to a social norm, it's reminding visitors that important others have an opinion about how they act. For example, a message to bushwalkers might remind them that other bushwalkers want and expect them to carry out their rubbish. In this way, you activate the norm in the bushwalker's mind.

In Step 3, you learned which normative beliefs were strongest among your visitors and which social referents were most influential (e.g., park staff, other visitors, spouses, etc.). Any of these might make good candidates for a normative appeal in your message.

Figure 11 shows examples of how a subjective norm appeal was used in two different signs, the first to promote on-track walking and the second to deter bird feeding. In the track walking study,

¹⁴ Ham (1992), Larsen (2003) and Moscardo (1999) offer additional ideas on how to design thought-provoking messages.



Figure 10. Signs appealing to a personal norm.

park staff were found to be an important social referent for visitors. In the bird feeding study, other picnickers were found to be an important referent. (If you look back at the sign shown Figure 9, you'll probably see that its message also appeals to a subjective norm—in this case, connected to other dog walkers).

Provocative titles attract interest and encourage thought

Using a provocative title that promises new information or delivers a new twist on something your visitors already know can draw attention to your message. This method can also encourage people to elaborate and perhaps take in the rest of the message to satisfy roused curiosity.

Titles that ask a question (such as both signs in Figure 10) encourage elaboration as visitors try

to think of an answer. They also encourage (but don't guarantee) further reading as visitors seek a reason for the question being asked. Remember though, that even if visitors read nothing but the titles of your signs or exhibits, you still have a chance of influencing their behaviour, especially if the behaviour you're trying to persuade them to carry out is close (in time and space) to the message.

Even if visitors read nothing but the titles of your signs or exhibits, you still have a chance of influencing their behaviour, especially if the behaviour you're trying to persuade them to carry out is close (in time and space) to the message.

Knowing you did the right thing always makes you sleep better. Please, *please* stay on the designated walking track.

The combined impact of visitors who step off the track ensures that future generations of track walkers will miss the beauty you are seeing today.

Thanks for doing the right thing by staying on the designated track.





Figure 11. Signs appealing to a subjective norm.



Final design and delivery of your messages

We've presented just a few ways you might approach development of your persuasive messages. Although myriad other possibilities are available to you, virtually all will focus in one way or another on the key considerations we've outlined: (1) provoking *effortful thought* is a key goal; (2) to achieve this, you must make your message *easy* for visitors to process, and you must *motivate* them to engage with it; and (3) strengthening the *relevance* of a message is the best way to motivate visitors to engage.

At this point, you're ready to take your messages to final design, and from there, to on-the-ground delivery. Although it's beyond the scope of this manual to offer details on these final considerations, their importance cannot be overstated. As was mentioned previously, it's a very good idea for you to consult with your organisation's design office about any standards or guidelines they require, and to work with a professional designer who is experienced in the medium of communication you'll be using (e.g., signs, exhibits, posters, or personally-delivered programs).

¹⁵ See Figure 1 in the introduction.

In carrying out any visitor management strategy, including the use of persuasive communication, you'll be faced with a series of important considerations that will affect how you do things. Since each decision you make influences the ones that follow it, the process is iterative and cyclic. If the management action addresses visitor-induced problems of the kind we've discussed in this manual, it's likely you'll pass through the six stages of the management planning cycle shown in Figure 12.

Steps 1 to 4 in this manual have covered the first three stages in the management planning cycle. Following your own management objectives and the guidelines presented in the preceding pages, you identified a visitor management problem to be addressed through persuasive communication (Step 1). Then, relying on the reasoning of two wellsupported theories, you worked towards developing persuasive messages that target selected visitor beliefs about the behaviour you're hoping to influence (Steps 2 and 3). Finally, you considered various approaches and communication appeals for making your messages as persuasive as possible and then worked with designers on the appearance and delivery of a final communication device (Step 4). This is where the technical advice offered in this manual comes to an end.

However, having now arrived at good decisions about the final communication strategy and delivery system, you still need to implement them and monitor their effectiveness. After onthe-ground implementation, if the percentage of visitors behaving as you want appears to increase, you can take credit for some or all of this success. However, if the problem persists or continues at an unacceptable rate, then you may need to consider making some changes in your implementation



Figure 12. A protected area management planning cycle.

strategy or in the communication intervention itself. This is what 'adaptive management' is all about—monitoring things and making incremental adjustments in management strategies as you go, rather than simply doing a one-off 'final evaluation.'

In the spirit of adaptive management, we want to conclude this manual by offering a few tips for how you might implement and evaluate a persuasive communication intervention. In doing so, we'll make some assumptions. First, we assume that the communication medium you've chosen is a sign, poster or other printed form of communication (in most cases, however, you could easily apply the guidelines to other forms of communication); second we assume you aren't a social scientist and that you don't have easy or affordable access to social science expertise.

Tips for implementing a persuasive communication intervention:

- $\sqrt{}$ Place signs close to where the problem behaviour is occurring.
- ✓ Ensure good coverage so that all visitors are exposed to your messages. In most cases, one or two signs should be sufficient, but this depends on the setting.
- ✓ Start with a fresh communication environment. Remove old and damaged signs that address the same problem. If they weren't working before, there's little reason to leave them in place.

Tips for monitoring outcomes:

- \checkmark The best and easiest approach to monitoring is one that allows rapid assessment at minimal cost.
- $\checkmark\,$ Basic observation by rangers during regular visits can be invaluable.
- √ Some ongoing counts of infringements of the behaviour (e.g., feeding birds), or indirect measurements of impacts (e.g., area of trampled vegetation) could be made to indicate changes over time.

- $\sqrt{}$ Involve volunteers in the monitoring process to save staff time. But train your volunteers well so that they give you good data.
- ✓ Encourage input and feedback from a range of potentially interested parties (e.g., tour operators, adjacent landowners, advisory).

Tips for making changes

- $\sqrt{}$ Make changes based on the results of monitoring, not whim or guesswork.
- ✓ Be prepared to make changes, but not too many at once. When you make a single change, it's easier to monitor and isolate any influence it might have. But if you make many changes at the same time, you won't know which of them was responsible for any observed differences.
- $\sqrt{}$ Signs may need to be better located or increased in number for better coverage.
- ✓ The design of the sign may need to be more striking, or 'vivid,' and less like more conventional signage that might be familiar to visitors.
- ✓ Be open to the possibility that you might need to repeat the persuasive message outside your protected area (e.g., through local tourist accommodations, visitor information centres, or in general park information contained in brochures or the park agency's website).
- Although control beliefs don't often turn out to be important, some behaviours may seem inconvenient to visitors. Watch for this, and be prepared to work harder at convincing visitors that compliance with the desired behaviour is more convenient than they may initially think. Consider flexible or more temporary looking signs that report updates on incidents or which post current levels of compliance. For example, 'Yesterday 96% of all visitors walking this track used the rubbish bin. Let's see if we can do even better today.'
- $\sqrt{}$ Consider producing messages in multiple languages if significant numbers of non-native English speakers visit the site.

- √ Where possible, offer visitors viable and attractive alternatives to the behaviour you're discouraging (e.g., ask them to continue further down the track to a constructed viewing platform rather than walking off the track to get a better photograph).
- Consider flexible or more temporary looking signs that report updates on incidents or which post current levels of compliance. For example, 'Yesterday 96% of all visitors walking this track used the rubbish bin. Let's see if we can do even better today'.
- ✓ Consider producing messages in multiple languages if significant numbers of non-native English speakers visit the site.
- ✓ Where possible, offer visitors viable and attractive alternatives to the behaviour you're discouraging (e.g., ask them to continue further down the track to a constructed viewing platform rather than walking off the track to get a better photograph).

- √ If particular groups of visitors seem to be the main offenders (e.g., children, campers, bushwalkers, etc.), then methods that specifically target them might be considered. The more specific your audience, the more effective you can be in reaching it.
- $\sqrt{}$ Try a completely different and possibly more direct management strategy, such as enforcement or restriction of use. Sometimes direct management is the best approach to take.



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APPENDIX A: SAMPLE ELICITATION INTERVIEW

Target Behaviour: Picnickers not feeding Currawongs at Lake Sinclair Date: ID: Location: Weather: Interview Start Time: Interview Start Time:

Behavioural Belief Questions

1. What do you see as the *advantages* or *good things* that could occur by not feeding Currawongs today? [PROBE]

[ANYTHING ELSE?]

2. What do you see as the *disadvantages* or *bad things* that could occur by not feeding Currawongs today? [PROBE]

[ANYTHING ELSE?]

Normative Belief Questions

3. Who (individuals or groups whose opinions you consider personally influential) do you think would *support* or *approve* of you not feeding Currawongs today? [PROBE]

[ANYTHING ELSE?]

4. Who (individuals or groups whose opinions you consider personally influential) do you think would *object* or *disapprove* of you not feeding Currawongs today? [PROBE]

[ANYTHING ELSE?]

Control Belief Questions

5. What factors or circumstances *enable* or make it *easy* for you to not feed Currawongs today? [PROBE]

[ANYTHING ELSE?]

6. What factors or circumstances make it *difficult* for you to not feed Currawongs today? [PROBE]

[ANYTHING ELSE?]

Socio-Demographic Profile Questions

- 7. Observe and CIRCLE respondent's gender. Male Female
- 8. What is your age, as of your last birthday? Years
- 9. Which best describes the highest level of education you have ever reached? [Mark ONE only]
 - Primary/Some Secondary
 - ____ Completed Secondary
 - _____ Tertiary (e.g. university, college)
- 10. Where do you live? [Mark ONE only]
 - _____ This state
 - Interstate
 - ____ Overseas

11. What is your nationality? [Mark ONE only]

_____Australian

_____ Other (Please specify): ______

12. In which country were you born?

13. How many times have you visited this particular park over the past 12 months, including this visit?

_____ Number of times

Interview Finish Time:

APPENDIX B: EXAMPLE OF PRELIMINARY ELICITATION STUDY RESULTS (BEFORE CLASSIFICATION)

Responses from Compliers ('visitors who pick up rubbish on Russell Falls Track')

Behavioural Belief Responses

ID	Q1. What do you see as the advantages or good things that could occur if you pick up rubbish from the track?	Q2. What do you see as the disadvantages or bad things that could occur if you pick up rubbish from the track?
1 (18 Feb 06)	 Retains the park's natural beauty Prevents an accumulation of rubbish, which can lead to a health hazard 	It is something extra to carry
2 (18 Feb 06)	 Stops the place from becoming ugly I can model good behaviour for other people on the track Prevents pests from coming (e.g. wasps are attracted to soft drink cans) 	 There may be a dangerous animal inside the rubbish Rubbish may be dirty or unhygienic (I would not pick up tissue, but rather kick it off the track)
3 (18 Feb 06)	 As a tour guide, it allows me to show people to do the right thing, to set an example By removing non-biodegradable material, it reduces potential damage to the flora and fauna Removes rubbish that is not very becoming to the site (ugly) 	• Depends on the type of rubbish—if the rubbish has become part of nature (e.g. an old car) and animals have made it their home, then picking up the rubbish could disturb the animals
4 (18 Feb 06)	 The park looks more natural and clean—shows less interference by humans Less dangerous for the animals I set a good example for foreigners, who can appreciate our nature in all its natural beauty 	 I might pick up a disease from the rubbish (I don't want to have to wear gloves) Having to carry rubbish for an hour before being able to dispose of it
5 (18 Feb 06)	 Prevents rubbish from polluting waterways It makes the park experience a cleaner experience It sets a good example for other tourists Prevents injuries to wildlife 	 Rubbish could be dangerous—if it was something like a needle, I would instead inform the park staff rather than picking it up Picking up rubbish could be dangerous for children, who are not aware whether the rubbish is safe or unsafe

6 (18 Feb 06)	 I hopefully influence other people, especially my kids, to do the same thing Reduces the rubbish load in the park Reduces the visual impact 	 I might cut myself on the rubbish The rubbish might leak in my backpack
	Prevents animals from eating wrappers	
7 (19 Feb 06)	 Park stays looking natural Keeps the park clean and tidy I want other tourists to pick up rubbish as well (setting an example) 	I might get dirty hands
8 (19 Feb 06)	Keeps the environment tidy	• Might be some bacteria or germs (but this would not bother me)
9 (19 Feb 06)	 Rubbish will no longer pollute the environment Sets a good example to others 	The rubbish might be 'pooey'
10 (19 Feb 06)	 Keeps the environment clean Saves animals and the waterways from the impacts of rubbish such as plastic bags 	 I might get a needle-prick injury (I would need to pick up the rubbish very carefully) Having to carry the rubbish around with me
11 (19 Feb 06)	 Rubbish will no longer impact on the environment Rubbish will no longer detract from the natural beauty Personally being seen as doing the right thing (hope other people do the same) 	 Depends on the rubbish—it may be unhygienic (e.g. needles)
12 (19 Feb 06)	 Keeps the park tidy Wildlife will not get injured by the rubbish Prevents rubbish from entering the waterways 	Nothing
13 (19 Feb 06)	Creates a cleaner environment	Rubbish could be dangerous (e.g. a syringe)
14 (19 Feb 06)	 Keeps the park clean Better aesthetically Plastic bags that don't biodegrade can impact on the environment and animals If the public picks up rubbish, money can go elsewhere in park management (e.g. track maintenance) 	I might cut myself

Normative Belief Responses

ID	Q3. Who (individuals or groups whose opinions you consider personally influential) do you think would support or approve if you pick up rubbish from the track?	Q4. Who (individuals or groups whose opinions you consider personally influential) do you think would object or disapprove if you pick up rubbish from the track?
1 (18 Feb 06)	My wifeMy childrenMy neighbours	People who would accuse me of being a tree-hugger
2 (18 Feb 06)	 My partner All my friends (if they did not approve, they would not be my friends) 	• Nobody
3 (18 Feb 06)	People I take on tour	 Nobody (people who disapprove don't matter—I have no faith in humanity)
4 (18 Feb 06)	 The national park staff Other tourists—especially foreigners as I want to set a good example 	NobodyMy wife (sometimes)
5 (18 Feb 06)	Nobody	Nobody
6 (18 Feb 06)	 My mother A Canadian canoeist that promoted taking all your rubbish with you was very influential on my in my earlier years 	• Nobody
7 (19 Feb 06)	 National park staff Other tourists (not personally influenced by them, but I want to set and maintain a standard) 	• Nobody
8 (19 Feb 06)	Nobody (it just comes naturally to me)	Nobody
9 (19 Feb 06)	 Nobody (I don't care what other people think) 	 Nobody (I don't care what other people think)
10 (19 Feb 06)	My daughtersMy friends	Nobody
11 (19 Feb 06)	My friendsMy mother	The person who dropped it, as they might feel guilty [generalised other]
12 (19 Feb 06)	 Greenpeace (they are VERY influential on me, as I work for Greenpeace) National park staff Local community groups 	• Nobody
13 (19 Feb 06)	 Organisations such as CALM and other local government organisations [the respondent, who is a member of the WA 4WD association, has worked a lot with CALM in the area of rubbish removal] Nobody 	Nobody

Control Belief Responses

ID	Q5. What factors or circumstances enable or make it easy for you to pick up rubbish from the track?	Q6. What factors or circumstances make it difficult for you to pick up rubbish from the track?
1 (18 Feb 06)	Nothing	Nothing
2 (18 Feb 06)	If I had my daypack to carry it out	If I did not have anywhere to put it
3 (18 Feb 06)	Presence of a rubbish bin	Nothing (doesn't matter how awful the rubbish is)
4 (18 Feb 06)	Rubbish bins (and more of them)	Lack of bins
5 (18 Feb 06)	The rubbish being clearly visibleThe rubbish being easily accessible	 If the rubbish is not accessible or is somewhere where I may disrupt an animal's habitat
6 (18 Feb 06)	 Having pockets, a bag or some other means of carrying the rubbish My fitness to retrieve the rubbish 	Nothing
7 (19 Feb 06)	The fact that the rubbish is there	The rubbish might be too big to carry
8 (19 Feb 06)	Nothing	Nothing
9 (19 Feb 06)	 If the rubbish is accessible If the rubbish is clean	If the rubbish is inaccessibleIf the rubbish is 'pooey'
10 (19 Feb 06)	Seeing rubbish bins close by	Lack of bins close by
11 (19 Feb 06)	 The rubbish being obvious Rubbish bins nearby, making it easy to dispose of the rubbish 	If I am physically incapable (e.g. having a sore back)
12 (19 Feb 06)	 Rubbish bins for disposing of the rubbish Having hands! 	If the rubbish is inaccessible
13 (19 Feb 06)	 Knowing where and how to dispose of the rubbish If I had a bag for putting the rubbish in 	 If the rubbish was something along the lines of dirty nappies
14 (19 Feb 06)	If I have gloves and a plastic bag	Old age (it is a long way to bend down and come up again)

Responses from Non-compliers ('visitors who do not pick up rubbish')

Behavioural Belief Responses

ID	Q1. What do you see as the advantages or good things that could occur if you pick up rubbish from the track?	Q2. What do you see as the disadvantages or bad things that could occur if you pick up rubbish from the track?
1 (18 Feb 06)	The park would stay clean and tidy; presented well	Nothing
2 (18 Feb 06)	 It would stop rubbish from damaging the ecosystem If picking up food rubbish, it would prevent animals from eating food that they are not supposed to eat 	Nothing
3 (18 Feb 06)	 It improves the aesthetics—enjoy nature at its best Animals won't get caught up in the rubbish 	 Health factors—I might cut myself on the rubbish (depends on the type of rubbish) Awkwardness of carrying rubbish—it might stain my clothes
4 (18 Feb 06)	 If picking up food scraps, it would prevent animals from eating something bad Reduces potential fire hazards— paper rubbish can cause a fire Removes something that does not belong in nature Good for future generations—keeps the park healthy for the future 	 I would need to wash my hands afterwards Rubbish might be poisonous (hazardous) I might fall over when picking up the rubbish
5 (18 Feb 06)	 It would keep the park clean You would not see any rubbish Removes rubbish that is an eyesore— it doesn't look natural 	Nothing
6 (18 Feb 06)	The park stays cleanerPrevents harm to animals	I might hurt myself/contract a disease from the rubbish
7 (18 Feb 06)	 Park is more pleasing to the eye if there is no rubbish Avoid pollution of the waterways Better for the animals 	 I might receive a needle-prick injury if I pick up a needle/syringe Rubbish might be contaminated—I might get contaminated I might get bitten if, say, a spider was in the rubbish
8 (18 Feb 06)	 Prevents rubbish from becoming a fire hazard Animals won't get hurt (by eating rubbish or getting trapped in it) 	Catching germs from the rubbish
9 (18 Feb 06)	 Keeps the park and forest clean and tidy—the way it should be Prevents fire hazards 	Nothing

10 (19 Feb 06)	 Stops rubbish from clogging up rivers Animals less likely to be injured by rubbish Removes rubbish that does not biodegrade 	I might get an infectionI might cut myself
11 (19 Feb 06)	 Protects the animals Maintains the natural forest Makes you feel good Protecting the park for future generations 	Nothing
12 (19 Feb 06)	 Appearance of the park is better If picking up cans, you can get money from recycling (in South Australia) Prevents injuries to wildlife Removes rubbish that does not biodegrade It feels like the right thing to do 	May cause me to catch a disease
13 (19 Feb 06)	 Stops the park being spoilt for other people It will prevent rubbish from building up and making the situation worse Prevents wildlife from being injured 	Nothing
14 (19 Feb 06)	 The animals will have a better environment It makes the park look better Keeps germs out of the park I show other people that I care 	I might pick up some germs
15 (19 Feb 06)	 Removes rubbish that does not belong in the park Prevents the park from looking untidy 	 I don't know where the rubbish has been (it could be foul)

Normative Belief Responses

ID	Q3. Who (individuals or groups whose opinions you consider personally influential) do you think would support or approve if you pick up rubbish from the track?	Q4. Who (individuals or groups whose opinions you consider personally influential) do you think would object or disapprove if you pick up rubbish from the track?
1 (18 Feb 06)	National park staff	 Occupational Health and Safety Officers ['generalised other']
2 (18 Feb 06)	National park staff	• Other track users, saying that I should not pick up the rubbish
3 (18 Feb 06)	 National park staff (I have had previous experiences with them that have established a personal connection) 	• Nobody
4 (18 Feb 06)	National park staffMy grandchildren	Nobody

5 (18 Feb 06)	• Nobody	Nobody
6 (18 Feb 06)	My familyNational park staff	 Nobody Paris Hilton!! [I left this one in for a laugh]
7 (18 Feb 06)	 Any bushwalking club (I am a member of such a club) People who I walk and mix with 	• Nobody
8 (18 Feb 06)	My parents	Nobody
9 (18 Feb 06)	My sonMy grandson	Nobody
10 (19 Feb 06)	Older people [generalised other]	Nobody
11 (19 Feb 06)	 National park staff Local residents (they are influential on me because this is their home) 	Nobody
12 (19 Feb 06)	• Nobody (I am the only important one)	Nobody
13 (19 Feb 06)	• National park staff [it took me a while to probe this response, so it may not be that influential]	Nobody
14 (19 Feb 06)	• Nobody (I do it only for myself)	Nobody
15 (19 Feb 06)	My motherMy wife	Nobody

Control Belief Responses

ID	Q5.What factors or circumstances enable or make it easy for you to pick up rubbish from the track?	Q6.What factors or circumstances make it difficult for you to pick up rubbish from the track?
1 (18 Feb 06)	Nothing	If people didn't drop any rubbish
2 (18 Feb 06)	Presence of rubbish bins	If there were no rubbish bins
3 (18 Feb 06)	 Having a backpack to put the rubbish in (rather than having to use my pockets) 	Nothing
4 (18 Feb 06)	Presence of rubbish bins	My own physical ability/limitations
5 (18 Feb 06)	NothingI am physically able to do it	Having pockets full of food—no room for carrying rubbish
6 (18 Feb 06)	 When the rubbish is obvious (when there is not much rubbish around, it is easier to see the rubbish that is present) Rubbish bins 	My own lazinessIf the rubbish is not accessible
7 (18 Feb 06)	 As a bushwalker, I always carry gloves and a plastic bag to pick up rubbish 	 Nothing If the rubbish is in a dangerous position to access
8 (18 Feb 06)	If the rubbish is accessible	If the rubbish is soiledIf the rubbish is inaccessible

9 (18 Feb 06)	Rubbish bins in close proximity	My own physical abilityIf the rubbish is inaccessible
10 (19 Feb 06)	 Rubbish bins It would be best if you were advised that there were rubbish bins on the way (e.g. with signage) Rubbish bins should be clean, at regular intervals, and located next to seats at stopping points along the track 	 Not having anything to carry the rubbish in
11 (19 Feb 06)	The fact that the rubbish is there	Nothing
12 (19 Feb 06)	Having a bag and stick to pick up the rubbish	Nothing
13 (19 Feb 06)	Somewhere close by to deposit the rubbish	Nothing
14 (19 Feb 06)	Having somewhere to put it (e.g. rubbish bins)	If the rubbish is inaccessible
15 (19 Feb 06)	 Having something to pick the rubbish up with Having somewhere to get rid of it 	Nothing

APPENDIX C: SAMPLE BELIEF MEASUREMENT QUESTIONNAIRE

PRELIMINARY INFORMATION AND DEFINITIONS FOR PARTICIPANTS

The following questions focus on how visitors use the walking tracks at Port Campbell National Park, such as at the Twelve Apostles and Loch Ard Gorge.

When questions refer to your use of walking tracks, please think only of your experience here today.

Please know that there are no right or wrong answers to the following questions, nor are some responses better or worse than others. Park managers simply want to know your honest opinions about walking on this track.

The purpose of this series of questions is to find out what you believe about staying on the walking tracks at Port Campbell National Park. <u>Place an X</u> on the line that represents how strongly you believe the statement.

1.	If I always	s stay o	n the v	valking	track, I	will ha	ve less	impact on the natural environment.
EXTR UN	REMELY ILIKELY	_:	_:	:	:	:	:	EXTREMELY LIKELY
2.	Lessening	g my im	pact o	n the n	atural e	environr	ment is:	
	BAD	_:	_:	:	:	:	_:	GOOD
3.	If I always	s stay o	n the v	valking	track, i	t will be	e safer f	or me.
EXTR	REMELY							EXTREMELY
					•		•	
Λ	Staving s	afo is:						
4.		aie 15.			_			
	GOOD	_:	_:	:	:	:	:	BAD
5.	If I always	s stay o	n the v	valking	track, I	will mi	ss out c	on a better view or photo.
EXTR	REMELY							EXTREMELY
UN				•	•		•	
6.	Missing o	ut on a	better	view o	r photo	IS:		
	BAD	_:	_:	:	:	:	:	GOOD

7. If I always stay on the walking track, it will feel too crowded to me.

8. Feeling too crowded is:

GOOD___:__:__:__:__BAD

The next series of questions asks you to give your opinions about people or characteristics of people who might approve or disapprove of the way visitors use the designated walking tracks at Port Campbell National Park.

9. I believe that park staff think:

I should NOT____: ___: ___: ___: ___: I SHOULD always stay on the designated walking track while at Port Campbell National Park.

10. When it comes to always staying on the designated walking track while at Port Campbell National Park, doing what park staff think I should do is:

NOT AT ALL							VERY
important							important
to me_	:	:	:	:	:	:	to me

11. I believe that other track walkers think:

I SHOULD ____: ___: ___: ___: ___: I should NOT always stay on the designated walking track while at Port Campbell National Park.

12. When it comes to always staying on the designated walking track at Port Campbell National Park, doing what other track walkers think I should do is:

 VERY
 NOT AT ALL

 important
 important

 to me____:
 :
 :
 to me

The final questions have to do with the ease or difficulty of staying on the track, followed by a few questions about you.

13. There is a high fence along the track that could influence whether I stay on the track.

FALSE____:___:___:___:___TRUE

14. The high fence along the track makes staying on the track

 MORE
 EASIER

 DIFFICULT
 EASIER

 FOR ME____:
 :____: FOR ME

15. The width of this track could influence whether I stay on the track.

TRUE____:___:___:___:___:___FALSE

16. The width of the track makes staying on the track

 MORE

 EASIER
 DIFFICULT

 FOR ME_____:___:___:___:____:_____
 FOR ME

- 17. How old are you? _____ years
- 18. Which best describes the highest level of education you have ever reached? [TICK ONE]
 - _____ Primary/Some Secondary
 - _____ Completed Secondary
 - _____ Tertiary (e.g. university, college)

THANKS FOR THE GENEROSITY OF YOUR TIME. ENJOY THE REST OF YOUR VISIT TO PORT CAMPBELL NATIONAL PARK!

APPENDIX D: SAMPLE PROCEDURES FOR APPROACHING NON-COMPLIERS

Procedures for Requesting Non-complier Participation

Verbal Invitation to Non-Complying Visitors to Complete a Questionnaire

Hello. My name is _____ and I am a researcher from Monash University. I am working with the Tasmania Parks and Wildlife Service on a project about people picking up rubbish from the track.

On the way back to the visitor centre, you may have noticed a crushed aluminium drink can that has purposely been placed on the track. I am actually really glad you walked past it because we know there are a number of reasons why people choose to either pick up or not pick up rubbish they encounter on this track, but we want to know which ones are the most important. Would you be willing to help us with this research and complete a 3 minute questionnaire?

- YES: Proceed to preliminary information
- NO: Thank them for their time and wish them an enjoyable visit at the park

Preliminary Information and Definitions for Participants

When answering the following questions, please think only of your experience here at Russell Falls.

The interview is completely confidential and voluntary, and you are free to stop at any time.

Please know that there are no right or wrong answers, nor are some responses better or worse than others. We simply want to know your honest opinions about picking up rubbish at Russell Falls.

APPENDIX E: RATIONALE FOR CODING SCHEMES

A visitor's response to each belief question in a TPB questionnaire needs to be coded so that you can use it in calculating means and cross-products. Researchers have long debated the best coding schemes for behavioural, normative and control beliefs, but the one we have adopted in this manual (and which we strongly recommend you use) is adapted from a widely accepted method presented by Francis et al. (2004a). Although we've made a few changes to their method, the rationale behind our coding scheme is consistent in most respects to theirs. If you're interested in a technical explanation of Francis et al.'s coding, you can read it at http://www.rebegi.org/ViewFile.aspx?itemID=219 or view their entire discussion of designing a TPB questionnaire at http://www.rebegi.org/ViewFile.aspx?itemID=212 (Francis et al., 2004b).

Although a few studies have used a five- or nine-point scale for coding responses, the vast majority use a seven-point scale, and this is what we recommend. See pages 23–27 and Appendix C where the format of the belief questions is shown. Recall that each belief measurement has two parts. The first part is the belief strength measure which is then followed either by an evaluation measure (for behavioural beliefs), a motivation to comply measure (for normative beliefs), or a power measure (for control beliefs). For each of the two parts, we use a coding scheme of exactly seven units in width. For some questions, this range is 0 to 6, whereas in others it is -3 to +3. The reasons for this are explained below.

BEHAVIOURAL BELIEFS¹

Belief strength component:

The strength of a behavioural belief is the respondent's rating of the likelihood or probability that a given outcome will actually occur if s/he engages in the target behaviour. Since probabilities can range from a low of 0 (no likelihood) to complete certainty, the coding scheme begins with 0 (extremely unlikely). The maximum probability would be coded as 6 (extremely likely). Thus, the strength of a behavioural belief is coded as:

EXTREMELY							EXTREMELY
UNLIKELY	0	 	3	4	5	6	LIKELY

Or when reversing the scale to discourage visitors from giving patterned responses (see page 22):

EXTREMELY							EXTREMELY
LIKELY	6	5	4	3	2	 0	UNLIKELY

Notice that the midpoint is 3 in either case. So a rating of 3 means a 50-50 chance. This is the response you'd expect from visitors who have no idea about whether an outcome is likely or unlikely to occur.

Evaluation component:

The evaluation component of a behavioural belief is the respondent's rating of how good or bad the outcome would be. Since good has a positive connotation and bad has a negative connotation, it makes sense to give this measure a midpoint of 0 (neither good nor bad) and then use positive numbers up to +3

1 Debates have ensued for over two decades as to whether a uni-polar coding system (e.g., 0 to 6, 1 to 7, etc.) is superior to a bipolar coding scheme (e.g., -3 to +3) in the measurement of behavioural beliefs. Either one, it turns out, can be better than the other depending on which one produces an attitude score that correlates more highly with a direct measure of attitude. Ajzen & Fishbein (2008) have recommended that researchers calculate the two correlations and use the coding scheme that produces the higher one. However, since many protected area managers will not be familiar with correlation analysis or will not have a statistical analysis program on their computers, the coding scheme we recommend here assumes that no major difference between the two correlations exists and that either method would suffice in most cases. Although the coding scheme we have recommended in this manual could, in certain situations, be error prone, we do not believe it would significantly alter the beliefs a manager would identify as having persuasion potential. Our own research has confirmed this (see Ham et al. 2008).

to measure degree of 'goodness' and negative numbers to a low of -3 to measure degrees of 'badness.' Thus, the evaluation component of a behavioural belief is coded as:

BAD <u>-3</u> <u>-2</u> <u>-1</u> <u>0</u> <u>1</u> <u>2</u> <u>3</u> GOOD

Or when reversing the scale to discourage visitors from giving patterned responses (see page 22):

GOOD <u>3</u> <u>2</u> <u>1</u> <u>0</u> <u>-1</u> <u>-2</u> <u>-3</u> BAD

Notice that the midpoint is 0 in either case. So, in essence, a rating of 0 means that the person doesn't know, or has no opinion, as to whether the outcome is good or bad. This is the response you'd expect from visitors who are unfamiliar with the place or who have simply never experienced the outcome previously.

Behavioural belief cross-products:

You can see that since a behavioural belief's strength can range from 0 to 6 and that an evaluation score can range from -3 to +3, the most negative cross-product possible would be $6 \times -3 = -18$ (that is, when an extremely likely outcome is rated as bad). Conversely, the most positive cross-product possible would be $6 \times 3 = +18$ (when an extremely likely outcome is rated as good). You can also see that if a visitor doesn't know whether the outcome is good or bad (i.e., evaluation = 0), the cross-product will also be 0 regardless of the likelihood rating. Similarly, if the visitor doesn't believe there is any probability at all that the outcome will occur (i.e., belief strength = 0), the cross-product will also be 0 regardless of the evaluation rating. The sum of cross-products for all behavioural beliefs tells you a person's overall attitude to the behaviour.

NORMATIVE BELIEFS

Belief strength component:

The strength of a normative belief is the respondent's rating of how much a particular social referent would approve or disapprove if s/he engages in the target behaviour. Since approval has a positive connotation with respect to carrying out the behaviour and disapproval has a negative connotation, it makes sense to give this measure a midpoint of 0 (neither approve nor disapprove) and then use positive numbers up to +3 to measure degree of 'approval' and negative numbers to a low of -3 to measure degrees of 'disapproval.' This is done by measuring whether and how much the respondent believes the referent thinks s/he should or should not carry out the behaviour. Thus, the strength of a normative belief is coded as:

The social referent in question thinks: I SHOULD

 NOT
 -3
 -2
 -1
 0
 1
 2
 3
 I SHOULD carry out the behaviour

 Or when reversing the scale to prevent visitors from giving patterned responses (see page 22):
 I SHOULD
 I SHOULD

 I SHOULD
 3
 2
 1
 0
 -1
 -2
 -3
 NOT

 carry out the behaviour

Notice that the midpoint is 0 in either case. So, a rating of 0 means that the person believes the referent would neither approve nor disapprove of the behaviour. This is the response you'd expect from visitors who don't believe the referent in question cares one way or the other about the behaviour.

Motivation to comply component:

A respondent's motivation to comply is a measure of how much s/he feels motivated to comply with the wishes of the social referent. Although it's sometimes possible for a person to have a negative motivation to comply (e.g., teenagers may sometimes want to do exactly the opposite of what their parents want them to do), the more normal range of a person's motivation to comply is from a low of no motivation whatsoever to a high degree of motivation. A person has no motivation when s/he feels it's totally unimportant to comply with the wishes of the referent. Conversely, strong motivation occurs when s/he feels it's very important to comply with the referent's wishes. Thus, the motivation to comply component of a normative belief is coded as: When it comes to the behaviour in question, doing what the social referent wants me to do is:

NOT AT ALL							VERY
IMPORTANT							IMPORTANT
TO ME	0	 	3	4	5	6	TO ME

Or when reversing the scale to discourage visitors from giving patterned responses (see page 22):

VERY								NOT AT ALL
IMPORTANT								IMPORTANT
TO ME	6	5	4	3	2	1	0	TO ME

Notice that the midpoint is 3 in either case. So, in essence, a rating of 3 means that the visitor doesn't care what the social referent thinks (i.e., the referent's opinion is irrelevant to the visitor). This is the response you'd expect from visitors who pride themselves in their independence or who simply don't believe the social referent in question is all that important.

Normative belief cross-products:

You can see that since a normative belief's strength can range from -3 to +3 and that motivation to comply can range from 0 to 6, the most negative cross-product possible would be $-3 \times 6 = -18$ (that is, when the visitor believes the social referent would strongly disapprove of the behaviour and is highly motivated to comply with the wishes that person). Conversely, the most positive cross-product possible would be 3 $\times 6 = +18$ (when the visitor believes the social referent would strongly approve of the behaviour and is highly motivated to comply with the wishes of that person). You can also see that if a visitor doesn't think the referent would care one way or the other (i.e., belief strength = 0), the cross-product will also be 0 regardless of the motivation to comply rating. Similarly, if the visitor feels no motivation to comply with the wishes of the referent (i.e., motivation to comply = 0), the cross-product will also be 0 regardless of the strength. The sum of cross-products for all normative beliefs tells you a person's overall subjective norm (perceived social pressure) to engage or not engage in the behaviour.

CONTROL BELIEFS

Belief strength component:

The strength of a control belief is the respondent's determination that a given factor (one that could either facilitate or inhibit carrying out the behaviour) is either present or absent in the immediate environment. Since a visitor's certainty about the presence or absence of a given factor can vary, a common method of measuring control belief strength involves giving respondents a statement about the existence of each factor and asking them to indicate how true or false it is. A rating of false signifies that the respondent is sure the factor is absent; a rating of true indicates a strong belief that the factor is present. Thus, the strength of a control belief for any given facilitator or inhibitor is coded as:

A given factor exists that could influence whether I engage in the target behaviour.

FALSE ______ 1 ____ 2 ____ 4 ____ 5 ____ TRUE

Or when reversing the scale to discourage visitors from giving patterned responses (see page 22):

TRUE 6 5 4 3 2 1 0 FALSE

Notice that the midpoint is 3 in either case. So, in essence, a rating of 3 means the respondent is unsure about whether the factor exists or doesn't exist. This is the response you'd expect from visitors who are completely new to a place or who are very inexperienced in the type of behaviour you're targeting.

Power component:

The power of a given factor is the respondent's rating of how easy or difficult it makes doing the behaviour. If it makes doing the behaviour easier, the factor is a facilitator. If it makes doing the behaviour more difficult, it's an inhibitor. Since easy has a positive connotation with respect to carrying out the behaviour and difficult has a negative connotation, it makes sense to give this measure a midpoint of 0 (i.e., the factor makes the behaviour neither easy nor difficult to do) and then use positive numbers up to +3 to measure degree of 'easiness' and negative numbers to a low of -3 to measure degrees of 'difficulty.' Thus, the power of a control belief is coded as: *The factor makes carrying out the behaviour*:

 MORE
 EASIER

 DIFFICULT
 EASIER

 FOR ME
 -3
 -2
 -1
 0
 1
 2
 3
 FOR ME

Or when reversing the scale to discourage visitors from giving patterned responses (see page 22):

								MORE
EASIER								DIFFICULT
FOR ME	3	2	1	0	-1 _	-2	-3	FOR ME

Notice that the midpoint is 0 in either case. So, a rating of 0 means that the person doesn't know whether the factor is a potential facilitator or a potential inhibitor. This is also the response you'd expect from visitors who are completely new to a place or who are very inexperienced in the type of behaviour you're targeting.

Control belief cross-products:

You can see that since a control belief's strength can range from 0 to 6 and that a power rating can range from -3 to +3, the most negative cross-product possible would be $6 \times -3 = -18$ (that is, when the visitor is very certain that a given factor exists and that it would make carrying out the behaviour difficult). Conversely, the most positive cross-product possible would be $6 \times 3 = +18$ (when the visitor is very certain that a given factor exists and that it would make carrying out the behaviour difficult). Conversely, the most positive cross-product possible would be $6 \times 3 = +18$ (when the visitor is very certain that a given factor exists and that it would make carrying out the behaviour easy). You can also see that if a visitor doesn't have any idea whether a factor is likely to facilitate or inhibit carrying out the behaviour (i.e., power = 0), the cross-product will also be 0 regardless of the belief strength. Similarly, if the visitor believes the factor doesn't exist at all (belief strength = 0), the cross-product will also be 0 regardless of the power rating. The sum of cross-products for all control beliefs tells you a person's overall perceived behavioural control (sense of personal capability or volitional control) to engage in the behaviour.





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RESEARCH INFORMING PLANNING AND PRACTICE



promoting persuasion in protected areas

The purpose of Promoting Persuasion in Protected Areas is to help protected area managers make better decisions and to achieve greater success in their use of communication to influence visitor behaviour. Visitation to protected areas has increased steadily in recent decades, and among these visitors is a special subset of individuals who engage in behaviours that are at odds with management objectives. Yet many of their most problematic behaviours are the product of naiveté or misconception rather than malicious intent. Protected area managers have long considered interpretation an effective and appropriate strategy for dealing with these kinds of problems, but success in using it to influence visitor behaviour has been mixed.

Recent advances in communication theory and research tell us that if we understand what visitors think about a given behaviour, we'll have a better chance of influencing them to adjust their actions in line with management goals. Our primary aim in this manual is to help you see visitor behaviour through the eyes of substantiated theory and to make better strategic decisions as you develop and deliver messages aimed at influencing visitors to behave in particular ways.