Project area: Citizens interactions with blue-green infrastructure
Intended audience: Researchers, practitioners, general public

Introduction

The implicit association test (IAT) is a social-science method used to infer the non-conscious associations held by a person towards a target concept. IATs are being used in this study to explore residents' implicit preferences towards sustainable urban drainage (SuDS) (the target concept), to investigate the basis of these beliefs, and explore whether they differ significantly from those reported by the same participants in questionnaires and surveys.

Why do we need an implicit measure of preference?

There is increasing evidence that self-reporting measures, such as surveys or questionnaires, are open to being rendered invalid by participants that give certain answers because they are socially accepted beliefs. New methods that lie outside of our conscious control can reveal implicit attitudes (Figure 1) that participants may choose to hide (either purposefully or inadvertently) in self-report measures.

Implicit attitudes are argued to be more durable that those we self-report, although they can be altered by personal experience, as well as exposure to media on an event or issue.

What is the implicit association test?

The implicit association test (IAT) is a method that provides us with an indication of the associations participants hold between different concepts. For example, an IAT that wishes to look at attitudes towards women may present participants with a series of images of men and women, which are interspersed with a series of pleasant and unpleasant words. Participants are timed to record how quickly they make pairings between these images and words. The test argues that an implicit preference is shown if the participants finds it easier (i.e. takes less time) to make certain associations (such as those between pleasant words and images of females).

The IAT is usually completed on a computer, tablet or phone, and can take as little as a few minutes. They can provide a 'score' immediately, which can be shared with the participant.

Explicit vs. Implicit Attitudes

EXPLICIT:	IMPLICIT:
• Deliberate	• Automatic
• Conscious	• Non-conscious
• Introspective	• Associative
• "Slow" / "Cold"	• "Fast" / "Hot"
• *Self-report*	• *Response time*

Figure 1: The key differences between explicit (self-reported) and implicit attitudes

Figure 2: Example stimulus image of a public green space containing sustainable urban drainage features (pond).

Figure 3: Example stimulus image of a public green space containing no sustainable urban drainage features.

25 WORDS associated with [safe]	25 WORDS associated with [unsafe]
alive, protect, secure, okay, snug, maintained, healthy, sound, harmless, pure, reliable, trust, competent, stable, haven, shelter, assured, shield, cushion, cosy, comfort, oasis, gentle, dependable	alarm, bad, deadly, fatal, danger, perilous, precarious, risky, serious, terrible, threat, treacherous, unhealthy, dangerous, unstable, exposed, menace, thorny, wicked, injury, hurt, damage, harm, hazard, fear

Figure 4: Example attribute words to explore residents' perceptions of safety

How are we using the IAT in this study?

The views of residents living near sustainable urban drainage systems (SuDS) have been studied previously, but remain poorly understood. What those papers have revealed, however, is that the general public often have very little understanding of the function of these features, and the multiple positive benefits for the surrounding environment.

While there are plans to use the IAT to answer a number of questions in this study, the details below refer to a pilot of the method being carried out by researchers at Nottingham.

SuDS features are increasingly being retrofitted into public green spaces, whose role is changing from solely recreation, to one of a multi-use space that provides multiple benefits to the city and its residents. This rethinking of public spaces provides an ideal opportunity for SuDS to be incorporated into their redesign, and demonstrates the need for greater understanding of how the public perceive these features.

The research in this project looks at whether public perceptions of the value of public green spaces are adversely impacted by the siting of SuDS features, or whether benefits tend to accrue when they are present. Participants are presented with a series of forty images of public green spaces (mostly parks and playgrounds), of which half contain SuDS features (see Figure 2) and half do not (see Figure 3). They are then presented with words that are associated with the following:

- Tidy vs. untidy
- Safe vs. unsafe (see details of this in Figure 4)
- Attractive vs. unattractive

Each of these categories have been carefully chosen to focus on the most common concerns cited in studies which have asked residents about local SuDS features. The IAT results will reveal to the participants how 'blue-green' they are (i.e. their preference towards blue-green infrastructure in public green spaces). Further analysis of the results will reveal more details surrounding the implicit perceptions held by the public, with regards to each of the three categories listed above (see Figure 4 for an example).

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