

## **The Theory of Planned Behaviour as a model of reasoning about fertility decisions**

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A simple, first answer to the question posed in this debate is “in some circumstances”. It would clearly be wrong to cast the Theory of Planned Behaviour as a single model for human fertility, which has many facets, not the least of them biological. The question I want to address, then, is not *if* the Theory of Planned Behaviour (TPB) is an appropriate model, but *when* is it an appropriate model for human fertility? I will begin by concentrating on that question, then address a number of issues about using the TPB in practice that follow both from the *when* and from the critique raised by Morgan and Bachrach (2011). In particular, I will consider issues that arise in the operationalisation of the model, how time can be incorporated in both static and dynamic models using the TPB, and how the influences of macro-level events and conditions can be modelled as effects on the components of the TPB.

### **When is the TPB an appropriate model for human fertility?**

When we consider human fertility, we cannot ignore the biological imperative for procreation. If we accept that procreation is a fundamental human drive, we might ask why we need studies of human fertility at all: people do what they have to do and population level measures of fertility such as the total fertility rate (TFR) can be interpreted as reflecting changes in (largely) macro-level conditions that permit populations to rise or fall. But humans do have some control over fertility: in particular, highly reliable methods of contraception have been available to many groups of people for the last 50 or so years; at the same time, abortion has become an acceptable option for many - but, like contraception, not for all; in addition, assisted fertility is becoming more accessible. The increase, for many individuals, in socially acceptable choices about their fertility makes it necessary for us to understand how those choices are made, and ultimately, to understand how fertility patterns change in response to them. The TPB can act as a general model of how humans make choices in their social context, given different perceptions of control over their actions. From this point of view, it is an appropriate model for those aspects of human fertility about which people make choices over which they have varying levels of control, i.e. those about which people make conscious

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or “reasoned” (Fishbein and Ajzen 2010) decisions. The TPB is not, therefore, a general model of human fertility, nor do those who use the TPB to model decisions about human fertility make such a claim.

While Morgan and Bachrach focus on the intention to have a child, it is in fact possible to define many fertility decisions or choices about which the TPB could offer explanations (Ajzen and Klobas, submitted), including

- intention to take a condom to a party where you might meet a partner
- intention to use the condom when having sex
- intention to have an abortion having discovered you are pregnant
- intention to use the contraceptive pill
- intention not to enrol in an assisted reproduction programme
- intention to remain childless
- intention to have a certain size family
- intention to wait until one’s studies are completed to have a child
- intention to delay childbearing until established in one’s career
- intention to become pregnant during the next two years
- intention not to become pregnant during the next two years

The nature of the behaviour and level of ‘granularity’ of the decision are important here. If the purpose of the research is to explain unplanned teenage pregnancy, a TPB model that asked teenagers why they planned or intended to have a child would not be appropriate - by definition, the pregnancy is unplanned. If the teenagers have not reasoned about having a child, their beliefs, attitudes, subjective norms, perceived behavioural control - essentially their “schema”<sup>1</sup> for having children - are unlikely to be either formed or cognitively accessible. On the other hand, the teenagers might have reasoned about preparing for a sexual encounter or dealing with the consequences if they became pregnant. Thus, an appropriate TPB model would not attempt to predict or explain pregnancy, but “having sex, using contraception, choosing abortion”. Furthermore, there would not be a single TPB model, but several models, one for each of these decisions, although potential relationships between them might be mapped out.<sup>2</sup> An important issue then is that, while the TPB has been considered in much recent demographic research as synonymous with a general model of *intention to have a child*, it is not confined to that specific decision.<sup>3</sup>

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<sup>1</sup> Unless otherwise noted, quotation marks denote words and phrases taken from Morgan and Bachrach (2011).

<sup>2</sup> Although dealing specifically with the role of interventions on related behaviours, the approach mapped out by Jemmott and Jemmott (2007) provides an indication of how this might be done.

<sup>3</sup> The extensive literature that uses the TPB to explain contraceptive use illustrates this point (Albarracin et al. 2001; Sheeran and Taylor 1999).

**Conjunctural context and retrospective explanation**

Typically, the beliefs/attitudes/subjective norm/perceived behavioural control/intention component of the TPB (which I will call the *core*) is evaluated in a given context at a given time. Morgan and Bachrach's description of a "conjuncture" describes this well, although I would propose that the conjunctural context is not just social, but also material and psychological. In the kind of reasoned behaviour that is modelled by the TPB, intention can be discerned at this conjuncture. Thus, as attitudes, subjective norms, perceived control and intention reflect the same conjuncture, they are measured contemporaneously, but not retrospectively as Morgan and Bachrach indicate is sometimes done in demographic research.

Retrospective reports of all human cognitions and emotions, not just those associated with fertility, are prone to error, and they are not normally part of the TPB tradition. Some exceptions have been made by qualitative researchers who use the TPB as a guiding framework to uncover beliefs associated with different behaviours in a given context. But when the purpose of the research is to explain known behaviour, it makes no sense to ask for retrospective reports of intentions (Renzi and Klobas 2008). Qualitative research shows that the TPB can be used to guide retrospective sense-making,<sup>4</sup> and I suggest it might provide a useful framework for identifying the cognitive schemas and conjunctures that Morgan and Bachrach include in their Theory of Conjunctural Action (TCA).

**Operationalisation**

Several of the issues raised by Morgan and Bachrach have more to do with operationalisation of the TPB in current demographic research than with the appropriateness of the model itself. Let's take the issue of "competing intentions". One way that competing intentions could be considered using the TPB would be to develop a TPB model specifically for the competing intention, e.g. the intention to put career before childbearing. In this example, the intention to be studied might be characterised as the intention to establish one's career before having a child, and corresponding beliefs might include "At the moment, establishing my career is more important for me than having a child" (behavioural belief), "My peers think it is more important for me to establish a career before having a child" (normative belief), "It will not be possible for me to establish a career once I have a child" (control belief).

Similarly, people can be asked to rate the priority of childbearing relative to other life course decisions. If we take the examples provided by Morgan and Bachrach ("working, partnering, marrying"), we might operationalise beliefs associated with the intention to have a child in the short term in forms similar to: "Over the next three years, establishing my career will be more important for me than having a child" (behavioural belief, working); "It will only be possible for me to have a child during the next three years if I meet a suitable partner" (control

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<sup>4</sup> Including in the fertility domain (Cavalli 2011).

belief, partnering); “My parents will only approve of my having a child during the next three years if I am married” (normative belief, marrying). While questions in surveys such as the Generations and Gender Survey (GGS) allude to these issues, they do not always spell them out in terms as specific as that, but this is an operational choice, not a shortcoming of the TPB.

The issue, then, is not that certain questions cannot be addressed within the framework of the TPB, but that the existing sources of secondary data for demographic research limit the number and type of questions that can be asked.

### **Modelling changes in individual characteristics, belief structures and intentions over time with the TPB**

Contrary to Morgan and Bachrach’s claim, the TPB is quite able to accommodate changes in individual characteristics, belief structures and intentions over time. Past events are explicitly included in the model as background factors that affect belief structures (see Morgan and Bachrach’s Figure 1, from Fishbein and Ajzen 2010). Changes over time in response both to interventions designed specifically to change beliefs (background factors in Morgan and Bachrach’s Figure 1) and to external events (e.g. as changes in actual control) are specifically built into the model. Indeed, Fishbein and Ajzen (2010) are quite explicit about the fact that intentions reflect a particular conjecture and can be expected to change over time: “with the passage of time, an increasing number of events may cause intentions to change” (p.56).

But while, as Morgan and Bachrach point out, the TPB is better able to explain outcomes that occur in the short term than those that are expected to occur in the long term, this doesn’t mean it is not an appropriate model for fertility research. The expectation that fertility beliefs, attitudes, subjective norms, perceived behavioural control and intentions change over time can guide us to track how reasoning about fertility changes over the life course as a person moves through adolescence into and through adulthood, learns more, attains more (or different) education, forms and re-forms partnerships and has different work and family experiences.

Thus, although the TPB is normally presented in a static form, the TPB itself is not a static model. Figure 1 provides a graphical representation of some possible temporal effects of interventions and events (which may be ‘internal’ such as the birth of a child, or ‘external’ such as the introduction of a revised national system for child care). (Different dynamic representations are possible, depending on the problem of interest and the events and changes to be modelled.)<sup>5</sup>

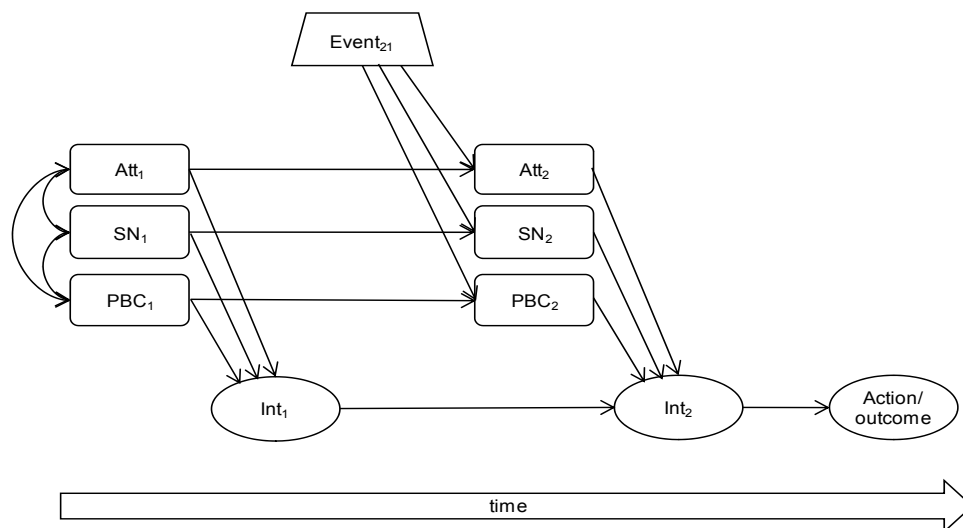
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<sup>5</sup> In this figure, I have drawn attitudes, subjective norms, perceived behavioural control and intentions at time 2 as reflecting, at least to some extent, those held at time 1, and the event at time 2 affecting all three belief systems, but this need not be the case. Depending on the outcome of interest, the nature of the event or intervention, and the researcher’s hypothesis, correlations might be expected between only some of these variables. For example, if the decision of interest is the decision to have a child and a child is born, intention at time 1 would

In this figure, attitudes, subjective norms and perceived behavioural control at time 1 are associated with an intention expressed at that time. At some time 21 (between times 2 and 1), an event occurs (e.g. a stable partnership is formed or child care becomes available) and attitudes, subjective norms and perceived behavioural control respond to the new situation (shown at time 2). If time 2 is near enough in time for the intention to be a reliable indicator of the person acting on their intention, then they are likely to act and (assuming they have actual control over the outcome) the intended outcome is likely to be observed. This model illustrates how the TPB *can* be used within a “life course framework ... the past impacts the present the present the future”, contrary to Morgan and Bachrach’s claim.

**Figure 1:**

**A dynamic TPB representation of the effect of an event on beliefs, intentions and behaviour (action) or outcome**



The ‘event’ might also be an intervention, deliberately designed to change beliefs, intentions and behaviours. For example, evidence of the effect of interventions on beliefs about condom use, as well as intentions and subsequent behaviours is provided by Jemmott and Jemmott (2007). In their team’s work with adolescent African Americans, education about HIV/AIDS prevention changed beliefs about condom use, which translated into increased intention to use condoms and (in various studies reported in their work) subsequently into increased self-reported actual use and reduced incidence of sexually transmitted disease.

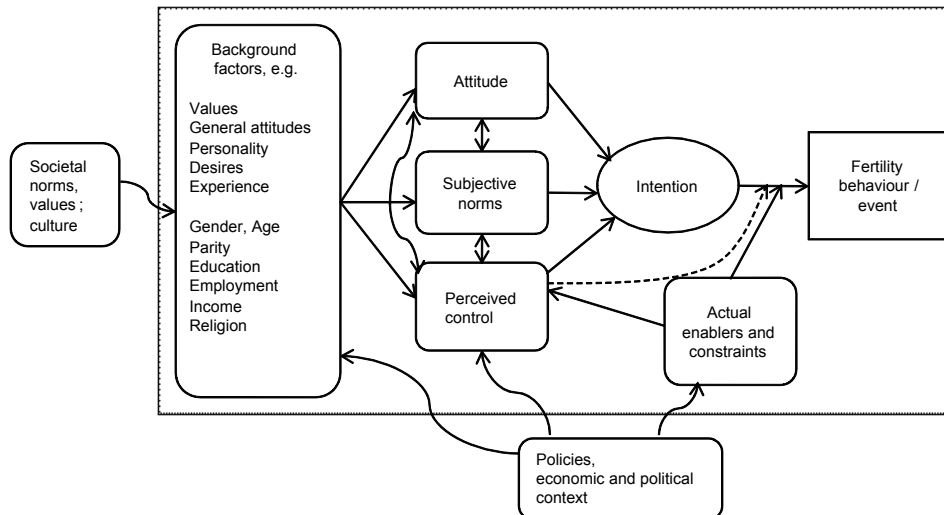
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lead to the event of having a child at time 21, resulting in learning which can be observed at time 2.

### Modelling the effects of macro-level events and conditions on micro-level decisions with the TPB

Morgan and Bachrach's final concern is that the TPB does not take into account "material aspects of the social context", or adequately reflect demographers' concerns that place fertility in its macro-level context. The TPB is not discipline-specific, so it is up to demographers to define the variables and external influences that might embed the micro-level TPB in its macro-level context. Figure 1, above, does this: a change in macro-level conditions (an event) can be modelled as affecting attitudes, subjective norms, perceived behavioural control and consequently intentions. Figure 2 provides a more extensive illustration of how we conceptualised macro-level effects for the REPRO project.

**Figure 2:**  
A Theory of Planned Behaviour model of fertility decision making



In Figure 2, the attitudes, subjective norms and perceived control cubes represent both these higher level concepts and the beliefs that underlie them. Intentions are modelled as arising from this belief system and the fertility behaviour or event as an outcome of the intention, subject to the effects of real constraints that prevent action. As noted earlier, the belief system can change over time or in response to an event, leading to a revision in intentions; this view of the model underlines that control beliefs (perceived control) can be affected by changes in actual control, including *enablers* (introduction of child- and family-friendly policies, for example) and *constraints* (such as a regional economic crisis that reduces employment stability), which affect both fertility intentions and the translation of intentions into actions. Outside the grey box are our further propositions about how the macro-level contexts of interest to demographers

influence the micro- and meso-level relationships modelled by the TPB. The background factors that define the individual decision maker are part of a social and cultural context which indirectly affects the fertility decisions the person makes and how they reason about them. Similarly, fertility decisions take place in an institutional and economic context that not only affects reasoning about fertility decisions and the decisions themselves, but can also define the actual enablers and constraints that make it easier or more difficult to act on fertility plans.

### **Conclusion**

In conclusion, I believe that Morgan and Bachrach's criticisms of the TPB have more to do with the application of the theory in current fertility research than with the appropriateness of the model itself. In the first section, I dealt primarily with Morgan and Bachrach's first and second criticisms of the TPB, that it concerns only rational actions and having a birth. I argued that, in fact, the TPB should only be applied to fertility decisions about which a person in the target population might be likely to have reasoned, given their circumstances, and that there are many potential decisions, each of which should be modelled separately. I agree with Morgan and Bachrach that fertility decisions are interrelated with one another, and related with other life course decisions, but disagree with the view that the TPB is unable to take account of such complexity; this is an issue for operationalisation rather than a conceptual issue. I have also shown how the TPB can be used to model issues associated with changes in belief structures and intentions over time, and how the effects of macro-level influences on micro-level decision making can be modelled as influences on the core elements of the TPB.

Finally, I explicitly consider the TCA, proposed by Morgan and Bachrach in this volume. Conceptually, the relationships and mechanisms they describe seem quite feasible, and not inconsistent with the TPB. What the TPB offers, for those aspects of human fertility for which it is an appropriate model, is a model that unites concepts and variables which are important concerns among fertility researchers who seek to explain fertility choices, accompanied by a refined set of rules for definition of the contexts in which the model is appropriate and how to operationalise it (Ajzen and Klobas, submitted). The TCA reminds us that not all aspects of human fertility are reasoned, or subject to individual control or choice, and that humans can and do retrospectively make sense of their actions, including fertility behaviours. While not the primary purpose of the TPB, I believe that it can provide some insights into understanding and eliciting the schemas, conjectures and elements of sense-making that are built into the TCA, and look forward to a fruitful outcome in which both approaches contribute to appropriate modelling of human fertility.

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