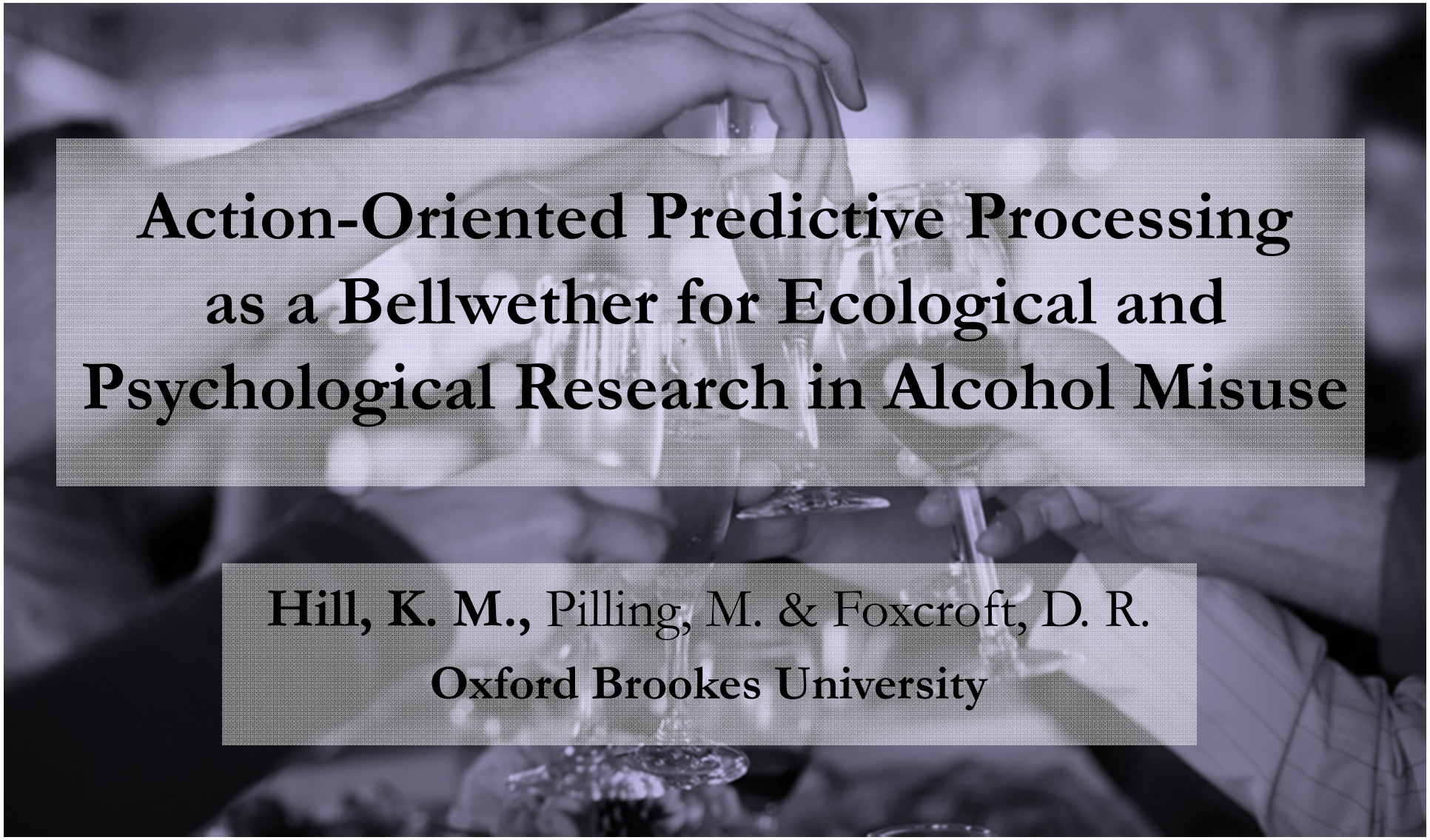

Action-Oriented Predictive Processing as a Bellwether for Ecological and Psychological Research in Alcohol Misuse

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Alcohol Misuse

- Alcohol Misuse is a **public health crisis** *(Bellis & Hughes, 2011)*
- The United Kingdom has one of the **highest** levels of consumption in the world *(World Health Organisation, 2014)*
- There were 8,000 **alcohol-related deaths** in the UK in 2012 *(Office for National Statistics, 2014)*
- 'Binge drinking', or heavy episodic drinking accounts for over **half** of all alcohol consumed within the UK *(Home Office, 2012)*
- Young adults **most likely** to engage in binge drinking, but are often **overlooked** by prevention and policy *(Office for National Statistics, 2011; Anderson, 2012)*

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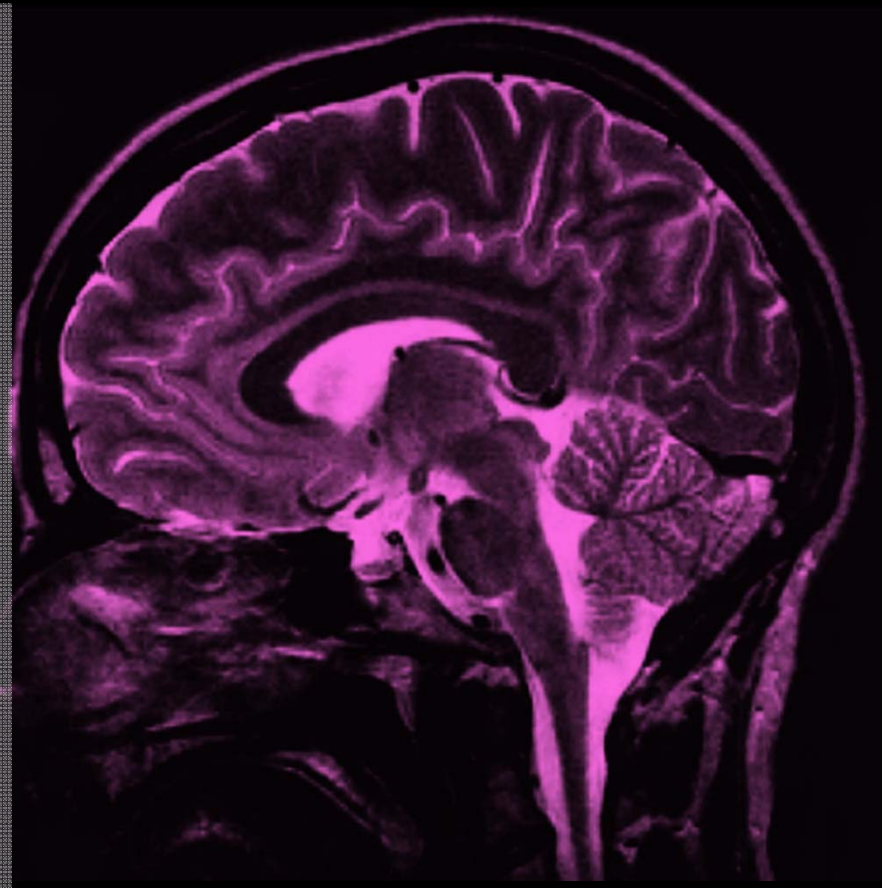
Understanding Behaviour

- **Behaviour** is mediated through **brain-based, internally-held** representations of the world
- **Psychological** determinants: cognitive attributes (attitudes/ intentions) as **precursors** of behaviour
- Many **social cognitive interventions** (e.g. TRAPB, TTI) are based on the **long-standing** psychological premise that the **brain precedes behaviour**
- Changing or moderating **intentions** to change or moderate **behaviour**



Problems with Prevention

- Many **dominant prevention approaches** based on these principles have had **limited success** *(Sniehotta, Presseau, & Araújo-Soares, 2014)*
- Intention-behaviour gap more prominent for **health-risk behaviours** *(Webb & Sheeran, 2006; Sheeran et al., 2005)*
- Even with successful interventions/ prevention approaches it remains unclear **what** changed behaviour *(Michie & Abraham, 2004)*
- **Causality:** other factors could cause behaviour (*Webb & Sheeran, 2006)*
- **Evidence for environmental determinants:** e.g. health promotion messages - perceived, cognitively mediated and characterised in the brain as representations **before** influencing behaviour

Behaviour Before Brain?

- Explaining behaviour solely in terms of brain functioning is **ineffective**
- Focusing on one part of the complex relationship between brain, body and environment is **unlikely** to successfully influence behaviour
- Behaviour emerges from the **transactions** between individuals and their environments, as individuals take up **opportunities to act** in the world
- **Challenging:** turns existing principles on their head - cognitive processing might actually be **secondary** to action *(Marsh et al., 2009)*

The Ecological Theory

- Meaning exists within the **relation** of brain, body and environment, in terms of **affordances** *(Gibson, 1979)*
- Directly perceived **opportunities for action,** illustrate the **functional significance** of an environment for an individual
- Based upon an individual's **history** of experiencing the culturally normative uses of objects in **certain contexts** and developmental capabilities **(effectivities)**
- Researchers can **understand** and **predict** why simple behaviours are taken up in certain settings *(Heft, 2003; Marsh et al., 2009)*
- **Complex** health-risk behaviours

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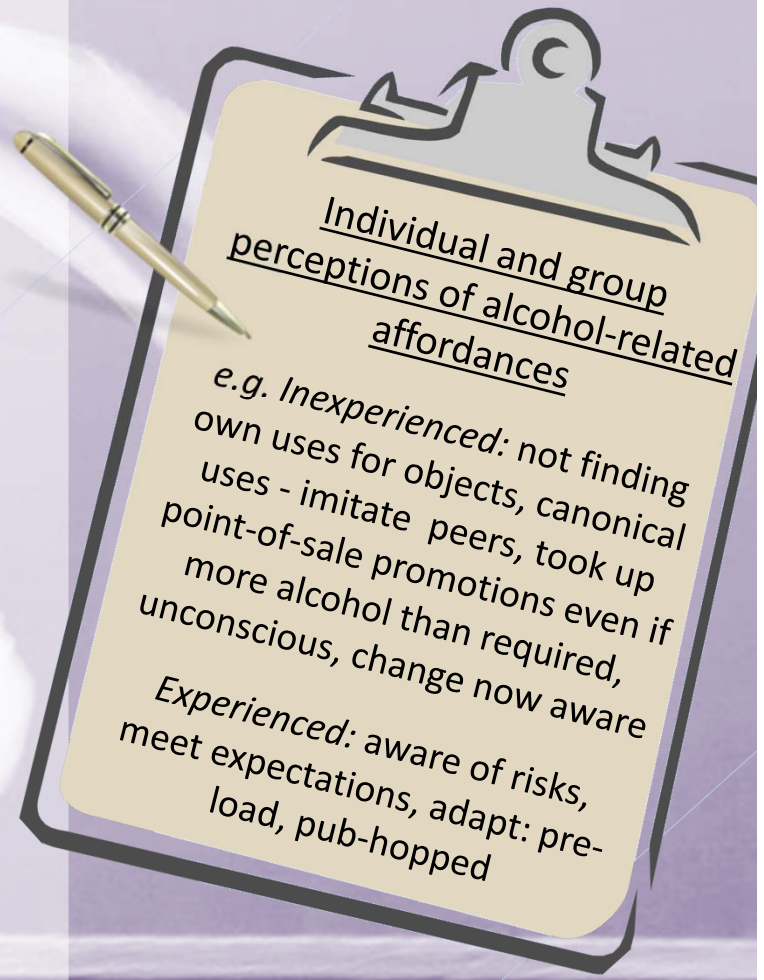
Action-Oriented Predictive Processing

- New direction: **Unified** theory, **complements** the Ecological theory *(Clark, 2013)*
- Complete **brain, body** and **environment** system **sensitive** to incoming information
- Habits, beliefs and expectations formed from **experiences** within shared social contexts (conventions, shared practices) *(Paton, Skewes, Frith & Hohwy, 2013)*
- Properties of an individual **related** to properties of the environment **(expectations)**
- Behaviour results from individuals responding **automatically** to their environment with little cognitive mediation



Implications for Behaviour

- Individuals seek out and directly perceive **predictable** sensory inputs/ invariant information about the world
- Provides implications for why affordances are **taken up** in certain contexts *(Dennett, 2013)*
- No **discrepancies** between **expectations** and **action opportunities:** instinctively act upon available **canonical affordances**
- Affordances **inconsistent** with expectations (novel): individuals motivated to **change** their behaviour or expectations to **reduce** error
- Engage in **second-order knowing** (reflexive) or act on **non-canonical affordances**

Prevention

- Provides an **alternative** basis for prevention science with implications for **understanding** and **preventing** health behaviour
- From **experience** (observing/ partaking in action in the world), individuals **form** and **internalise** intentions, attitudes and norms, contributing to **expectations**
- **Situated** at the relation of an individual to their environment and held in place by **action** (behaviour) in the world
- Individual and environment are **complexly intertwined** and prevention approaches should reflect this
- **Arranging** the environment to offer the right affordances, or **limiting** opportunities to take up health-risk behaviours could change **both** behaviour and expectations

Conclusions

- Moderating or controlling **cognitive attributes** or providing information to increase awareness is **unlikely** to impact behaviour
- Behaviour is largely **instinctive, unconscious**, and produced through **action-oriented predictive processing**
- As a **bellwether** for ecological and psychological research, could **explain** and help **prevent** health risk behaviour, enabling individuals to make better **health choices**
- **Further work** will be required to test these ideas for a **range** of health behaviours

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Thank you

Questions?

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