Developing a framework for trans-disciplinary behaviour change intervention

Literature Review
The purpose of this literature review is

- To define trans-disciplinary behaviour change
- To identify key problems with working in a trans-disciplinary way in the behaviour change field that have been reported in the literature
- To identify frameworks and models which have been developed and used to facilitate trans-disciplinary behaviour change intervention

1. The ideal of inter-disciplinary behaviour change

1.1 Calls
Inter-disciplinary collaboration in science has been termed the “mantra of science policy” (Robertson, Martin and Singer, 2003) and is recommended in numerous policy contexts (The House of Lords Science and Technology Select Committee, 2011, Teasley and Wolinsky, 2001, Jebb, 2007, Butland et al, 2007) on the basis that such an approach would help us become “more adept at
reassembling the unity of knowledge and coping with problems that are too large for any discipline to tackle alone” (Robertson et al., p.24). Indeed, “the medical profession has long recognized that human health depends on a combination of physical, social, cultural and economic factors” (Rosenfield, 1992) (p.1343). As such there has been a significant funding push to support multi-disciplinary and often geographically dispersed collaborations in research (e.g. [Pellmar and Eisenberg, 2000]. Examples of such initiatives come from the National science Foundation in the US, the Framework Programmes in the EU (Cummings and Kiesler, 2005), the Behaviour Change Consortium (US) (Orleans), the NIH Roadmap and the School of Social Ecology at the University of California.

In the academic literature many authors have called for a multi-disciplinary perspective on understanding and changing behaviour given the complexity the issues. For example, Nash et al (2003) note that “with the intricate interplay of factors at the genetic, behavioural, environmental, community, and societal levels influencing tobacco use behaviours, solely approaching the problem from individual disciplinary perspectives can be limited in its impact” (p.41). Others have called for more focus on the methods of inter-disciplinary collaboration. “The actual work of interdisciplinary groups of researchers on specific projects should be observed and analysed. If this were routinely done, we would have a system for continuously improving interdisciplinary methods” (Robertson et al, p.24). Many have noted at the micro-level that evidence suggests that a combination of numerous and varied types of intervention seems to be most effective (West, 2009, West, 2006, Abraham and Michie, 2008, Michie et al, 2008).

However, according to Orleans the issue of disciplinary ‘silos’ forms a barrier to inter-disciplinary collaboration in the behaviour change field. Orleans notes that there are three key types of silo; that of single behaviour change interventions; that of single-site and single discipline interventions and that of an overemphasis on internal validity and not enough emphasis on the ‘real world’. Orleans (2005) notes that the field of behaviour change, given its complexity, has tended to attract focused and narrow thinking, to avoid over complication and to aid measurability of effect. This has had the result of stymieing “the development of integrated trans-behavioural conceptual and intervention models” (Orleans, 2005)(p.77) and of generating a “predominance of single-risk practice guidelines” which do not help providers manage patients with more than one behavioural problem. Critically, argues Orleans, there is also no framework for integrating and delivering the multitude of guidelines, as each designed to tackle a single problem behaviour (Orleans, 2005).

1.2 Benefits

Amongst some academics, also, the benefits of multi-disciplinary collaboration have been noted as multifarious. It can promote innovation (i.e. “the successful implementation of creative ideas, tasks or procedures” (Cummings and Kiesler, 2005, p.704) because they should increase the likelihood that there will be a “juxtaposition of ideas, tools and people from different domains” (Cummings and Kiesler, 2005, p.704). Nash et al (2003) emphasise that “transdisciplinary scientists build on discoveries in single disciplines and address problems from new conceptual frameworks and methodological tools that are an integration of individual disciplinary perspectives” (p.42).

Transdisciplinary research can also lead to the combining of resources, data, processes and knowledge (Jordan, Ory and Sher Goldman, 2005), and “throughout the last century, there have been numerous examples where one discipline is influenced, even strengthened, by making
analogies to other fields” (ibid, p.8). LeGris et al (2000) emphasise that pooling talents, interests, resources and sharing time consuming tasks and work intensity can lead to the production of a quality project and also promote the professional growth of project participants. Their research, in fact, found that collaboration improved the worklife of participants “wherein peer cohesion increased, with less alienation, more independence from authority and more clarity concerning work-related rules and expectations” (LeGris et al, 2000)(p.66-67).

2. Key issues in inter-disciplinary collaboration

In a business context, inter-disciplinary collaboration and partnership building has been the subject of considerable research (Kanter Moss, 2002, Kanter Moss, 1989, Gratton and Erickson, 2007). Such research has found that inter-disciplinary teams made up of highly educated individuals face considerable problems communicating, collaborating and ultimately producing successful results. As the team sizes grow, so too do the problems, and when there are a range of skills in the group, collaboration is particularly difficult. Gratton and Erickson (2007) found in their research looking at 55 large teams across various business fields that team members found it difficult to embrace the opinions and inputs of others and consequently rejected their ideas. However, forming collaborative partnerships can be effective for pooling resources, linking systems, sharing knowledge and ‘doing more with less’ (Kanter Moss, 2002).

The solution to these problems, according to Gratton and Erickson (2007), lie in ensuring there is the correct executive support for inter-disciplinarity and also the correct ‘soft’ skills amongst the team. Along the same lines, LeGris et al (2000) found that the processes most needed to ensure effective collaboration could be grouped into two layers. Firstly there is the layer which includes “mutuality of commitment, ownership, communication, negotiation, flexibility and respect” and secondly there is the layer which includes specific organisational factors such as distinctive organisational/disciplinary cultures, specific decision-making structures, individual group needs and the nature of staff hierarchy. Here, we have combined these two overlapping approaches and labelled the layers interpersonal factors and structural factors:
Leadership and coordination of multi-disciplinary projects

Cummings and Kiesler (2005) note that projects being managed across disciplinary and university boundaries require coordination, which has been defined as “the integration or linking together of different pieces of a project to accomplish a collective task” (ibid, p. 704). This is often difficult and bureaucratic in multi-disciplinary collaboration, as well as expensive and time consuming (Oberg, 2009), and has been the subject of much consideration in the literature (see Hagstrom, 1964 for an early example). Effective leadership, unsurprisingly, is deemed essential. CEOs of partner organisations must have a good inter-personal relationship if a collaboration is likely to succeed (Kanter Moss, 2002) and the culture of active listening, respect and collaboration must be lead from the top.

Some coordination can be achieved through having a clear project structure and clear leadership, Cummings and Kiesler (2005) argue, based on the principle of making sure staff see the business as a whole entity rather than succumbing to competition between teams (Gratton and Erickson, 2007). However, collaboration is often a dynamic process and involves discussion, talk and the sharing of resources. This can be particularly difficult when the collaboration is across disciplines. This often means collaborators have few if any existing social bonds and that trust and effective interdependence can develop slowly. It also means that collaborators may have different visions of project objectives, project funding and intellectual property and may have different sets of non-complementary skills (e.g. training in different software packages). Multi-disciplinary coordination, argue Cummings and Kiesler, may require new approaches to get the work done and foster trust.

Communication

As Oberg (2009) notes, “clearly, those able to create a climate that stimulates dialogue within the [trans-disciplinary] group have a greater chance of success” (p.407). This can be achieved through newsletters, meetings or socialising (Gratton and Erickson, 2007). Several authors point out that
technological advances and computer-mediated communication have made cross-boundary projects possible (Robertson, Martin and Singer, 2003, Robertson, Martin and Singer, 2003, Cummings and Kiesler, 2005, Dauphinee and Martin, 2000). However, the barriers of institutional cultures have meant that evolution in cross-disciplinary integration in research and project management can be a slow process. However, it seems that when co-ordination mechanisms are in place that physically bring people together, this tends to reduce the negative impact of collaborations across multiple sites. Gratton and Erickson (2007) refer to this as the technique of ‘creating a shared space’. Perhaps this emphasis on talking is because, as (Dill, 1999) argues, different disciplines tend to have different scientific cultures and being able to talk face to face (which is far easier in smaller institutions and less geographically-spread projects) can help make cultural barriers more permeable (Dauphinee and Martin, 2000).

Indeed, Cummings and Kiesler (2005) conclude that “technology has not yet conquered distance” (p.704) and in university contexts, it has been noted that “close physical proximity among trainees and scientists from diverse backgrounds allows for formal and informal interaction that creates spontaneous transdisciplinary collaboration opportunities” (p.s44). Cross-institutional collaborations are difficult because of the physical divide (ibid). “Although information technology resources... can help bridge this divide, nothing can replace face-to-face interaction fro truly facilitating transdisciplinarity (ibid, p.s44).

### 2.3 Techniques for successful collaborative projects

Gratton and Erickson (2005) also note that investing in training of employees to instil them with the skills of relationship building, communication and problem solving is necessary to achieve successful collaborations, as is developing an ongoing culture of collaboration so that teams see inter-disciplinary working as normal. They also recommend developing cross-disciplinary teams around existing relationships so that these friendships can act as icebreakers for the rest of the group. Overall, developing a sense of community across different disciplines is seen as the best way of overcoming professional silos, because this can foster a culture of knowledge-sharing, inter-disciplinary respect and understanding, listening and trust.

### 3. Research inter-disciplinarity

Despite a reputation in some academic quarters that inter-disciplinary work may be “risky and professionally unrewarding” (Dauphinee and Martin, 2000), inter-disciplinary research has been lauded as a significant evolution in scholarship for many years; termed “the scholarship of discovery” and “the scholarship of integration” by key thinkers in academia (Boyer, 1990). “A deeper understanding of complex issues of significant societal concern requires integration of knowledge from more than one discipline” (Oberg, 2009, p.406). Robertson et al (2003) call this the ‘Humpty Dumpty Problem’, which is that “to understand the world it has seemed necessary to analyze it by breaking it into many pieces... but to act in the world... to try and address the issues for the understanding of which highly specialized knowledge was presumably sought, we need to somehow reassemble all the pieces” (p.20).

Benefits to interdisciplinary research are said to include finding connections across disciplines and illuminating data in a revealing way. Collaboration between disciplines will produce innovative
concepts and methods to answer complex research questions that are beyond the expertise of individual disciplines [[1360 Bracken, L.J. 2006; 1364 Nissani, M. 1997]].

An example of authors who take this integrated view is (Bryan et al, 2011), who have developed a model for understanding the ‘within-person’ influences on physical activity that cross over the disciplines of genetics, physiological response to exercise, motivation to exercise and subjective experience of exercise. They emphasise that viewing exercise in this way keeps in mind that all these disciplines are working towards the ‘bigger picture’.

An inter-disciplinary approach to research is critical for leading to a multi-disciplinary approach to intervention because it frames how you ‘see’ the behavioural problem. Indeed, as Oberg (2009) notes, “one has to decide what to study, according to what method, and in light of what literature” (p.409) and all these questions lead the researcher down a particular path. Scholarly work must be demarcated and a good study will clarify the grounds on which such decisions are based. The methods used to collect data, as well as the way those data are analysed and the issues on which the researcher focuses in their analysis are all triggered by the disciplinary background of the research team (Robertson, Martin and Singer, 2003).

Bryan et al (2011) also make the point that within the constructs of their theoretical constructs (e.g. motivation), there are numerous theories which could explain each one and therefore frame the manager’s view as to how best to influence the target behaviour. “Definitional generality applies to each of the constructs in our framework” (p.22). It is therefore important to take a multi-theoretical approach to defining the research problem in order to broaden out the range of possible intervention solutions. For example, the TPB suggests that motivation is the most proximal determinant of behaviour (Bryan et al, 2011, p. 23) whereas “genetic factors appear to account for a considerable amount of the variance in daily exercise behaviour” (p.22). Bryan et al conclude by stating that the strength of their model is the “notion that we ought to be looking at how these variables are related to one another so that we know better where, how, and with whom to intervene” (p.25).

3.1 Barriers to inter-disciplinary science

There are numerous recognized differences between disciplines that can produce problems for furthering inter-disciplinary research. These include epistemological and methodological differences; different way of formulating research questions; differences in communication; differences in attitude. However, communication between disciplines is cited as the most notable barrier to inter-disciplinary science. As Dalgaard et al. (2003) note, “Science is increasingly specialised, talks different languages and has different areas of interest” [[1361 Dalgaard, T. 2003]] p.41.

It has been noted that division within a discipline can lead to an inability to deal with “critical and significant problems” [[1360 Bracken, L.J. 2006]] (p.372).

It has been argued that fragmentation of a discipline can come from external pressures such as publication and research funding [[1360 Bracken, L.J. 2006; 1362 Jonston, R.J. 2003]]. That is, a discipline is a “branch of learning or scholarly instruction... which is defined by institutional boundaries constructed by the needs of teaching, funding, administration and professional
development” (Bracken, L.J. 2006) (p.372). Thus, the external pressures on a field of study necessarily lead to the shape of the discipline. It has been noted that there has been a trend towards reductionism in the West, which has led to increasingly fragmented scholarship and “expert knowledge becoming segmented and beaurocratized” (Balsinger, P.W. 2004). “This is one contributing factor that has led to researchers perceiving large differences between physical and social sciences” (Bracken, L.J. 2006) (p.372). Thus, better integration of rigidly structured disciplines is required (Rosenfield, 1992).

In behaviour change, funding tends to be available for one behavioural problem at a time, or from one government department at a time. Researchers may publish in journals dedicated to a specific outcome, e.g. ‘health’ or ‘transport’, rather than one targeting behaviour change scholarship more broadly.

Finally, it is noted that the research involved in trans-disciplinary study takes longer because researchers must read more widely and take time to integrate their thinking structures (Oberg).

3.2 The trans-disciplinary scientist

It is impossible for researchers to become experts in all fields. “Instead, we need to encourage the work of bringing diverse fields together and bringing new perspectives and new insight to bear on research findings” (Dauphinee and Martin, 2000, p.882). The key is that researchers connect their own research with others in broader patterns. For example, rather than seeing your interest in urban planning and physical activity as an island, it is important to view it as part of the larger body of work on the influences on physical activity participation. Some authors call this ‘bigger picture’ thinking. As a way of making explicit the inter-disciplinarity of a project, Robertson et al recommend that the following questions are considered:

- Which fields are included, or excluded, in the investigation?
- How thoroughly did the researchers exploit the opportunity for interdisciplinary collaboration? For instance, were a new common vocabulary and new methods devised?
- How important were institutions in facilitating or thwarting the process of interdisciplinary collaboration?
- How key was the integration of disciplinary perspectives in fashioning a more powerful explanation of the phenomenon in question? (p.23)

Multi-disciplinary training is very new and requires “breaking out of the traditional single disciplinary training mould that occurs within conventional academic silos” (Nash et al, 2003, p.s42). These authors acknowledge that becoming multi-disciplinary too early in an academic career can lead to becoming a jack of all trades, master of none, but that if the scientific base is strong enough, a trans-disciplinary scientist can be a pioneer, cross analytic levels and discipline and develop new conceptual syntheses, new measures and methods. Trans-disciplinary scientists are described also as “open minded while theorizing from a broad, contextually oriented approach that is inclusive of different disciplinary views and is supported by the use of multiple methodological tools” (ibid, p.s43). They can also “think critically in their approach to complex health problems and are skilled interpersonally as they form and maintain collegial collaborative relationships with those outside their primary discipline” (ibid, p.s43).
Part of the way of breaking down these silos is to develop a trans-disciplinary curriculum and to use a mentoring system.

The result will be a ‘trans-disciplinary ethic’ that includes open-minded attitudes, a belief in the value of trans-disciplinary collaboration, trust in and respect for collaborators, curiosity about other disciplines, willingness to risk venturing into other areas (and reveal one’s limits) and an awareness of one’s own limits (Nash et al, 2003). In addition, strong core skills, theoretical knowledge and interpersonal skills are required to succeed as a trans-disciplinary scientist.

3.3 Paradigmatic transparency
According to some authors (e.g. Cummings and Kiesler, 2005), the particular paradigmatic view of a scientific discipline could lead to two disciplines disagreeing on fundamental questions such as the goal of the project, the hypotheses that have emerged from scoping and also methodologies for future research and planning. Thus, respect between disciplines which ultimately talk a different language are mentioned by many authors as barriers to inter-disciplinarity (e.g. Oberg). Communicating with other disciplines, Nash et al (2003) note, “is analogous to growing up in one culture and then living within another culture. Learning the social rules and behaviours, the unstated assumptions, and the subtle nuances that are accepted within that culture (or discipline) as obvious can be challenging” (p.s43).

Rather than rejecting as lacking in credibility or rigor that which we do not understand, as Oberg (2009) notes is tempting to do, Jordan et al (2005) make the important point that inter-disciplinary researchers must “value the independent scientific gains made by each individual” (p.7). Terms such as ‘sufficiently’, ‘coherently’ and ‘reliable’ have different meanings in different disciplines (Oberg, 2009). Oberg notes that in order to truly value and appreciate these gains, a level of consciousness about variations among research procedures must be achieved. She notes that “assessment of credibility is rooted in implicit academic cultural norms” (p.406) and these differing perceptions of quality can be major obstacles to successful collaboration. Consciousness of alternative norms, achieved through discussion and transparency, is the only way to overcome this and will create a better researcher.

Competition between partners working on a multi-disciplinary project has been identified by Bryan et al (2011) as a potential barrier to collaboration. These authors also note that sharing resources (data and literature) is vital for collaboration, which may only occur with mutual respect and trust.

Institutions must create an environment that can help break down the disciplinary barriers and allow for a social norm to develop that encourages experimentation with new paradigms (Nash et al, 2003). Such an atmosphere “fosters a willingness to consider all perspectives with open communication, collegiality, trust, and a need and respect for collaborative work” (ibid, p.s45). Also, “Training a new generation of transdisciplinary scientists, who at the core are strong scientists, usually anchored in a primary discipline but able to use theories and methods that integrate disciplinary perspectives, may further advance our ability to address the complex nature of [behaviour change]” (p.s53). The framework recommended by Nash et al (2003) for developing trans-disciplinary science is therefore that of developing the attitude, knowledge and skills of scientists through training to achieve the trans-disciplinary ethic. Training is also advocated by Oberg (2009), who notes that “Scholarly training that encourages and strengthens the ability to reflect
upon research and learning processes on a meta-procedural level will therefore facilitate both collaboration and the production of high-quality work in interdisciplinary environments” (p.411). Only with this approach to reflection and transparency will researchers be able to overcome the limitations of their disciplinary starting points (Rosenfield, 1992).

3.4 True transcendence

The terms inter-, trans- and multi-disciplinary are used almost interchangeably in the literature, with few authors offering a definition. However, Robertson et al (2003) note that “disciplinary boundaries are most thoroughly transcended when members of the disparate fields develop a common language that facilitates a shared conceptual framework” (p.21). They go on to explain that fruitful collaboration occurs only when disciplines share a language but also practices and methods (although offer their frustration that transparency of method is rare). This builds on the definition offered by Rosenfield (1992). She notes that creative collaboration requires more than different scientists working on the same problem as part of the same team. A trans-disciplinary approach must transcend different disciplines and “each team member must become sufficiently familiar with the concepts and approaches of his and her colleagues as to blur the disciplinary bounds and enable the team to focus on the problem as part of a broader phenomena” (Rosenfield, 1992, p.1344). In the long term, the result is often the development of a new field, such as molecular biology or social psychology, but in the short term, it requires the original knowledge bounds and disciplinary orientation of individual team members to be transcended.

According to Rosenfield, multi-disciplinary projects are those where different disciplines work on the same project without integrating their thinking at all. There is a common problem, but each discipline works independently and brings their thinking together in separate chapters of the report at the end. Inter-disciplinary projects are those where approaches are integrated to tackle a common problem but the different disciplines apply their own techniques and skills. Trans-disciplinary work has a more “comprehensive organizing construct” (p.1351) and team members “transcend their separate conceptual, theoretical, and methodological orientations in order to develop a shared approach to the research, building on a common conceptual framework” (p.1351). It is a trans-disciplinary approach that Rosenfield predicted would be necessary in the future for solving ‘human health problems’.
Adapted from (Rosenfield, 1992)

In order to achieve this trans-disciplinary approach, argues Rosenfield, researchers are likely to need to redefine the concept and meaning of the problem behaviour under study, along with the methods used to study it. The example given by Rosenfield is that of malaria, and demonstrates a project in which malarialogists, economists, anthropologists, regional planners, vector biologists, demographers and immunologists worked together over eight years to define the problem, confer about concepts, methods and results, and develop interventions for prevention. The team was able to

“analyze from all systems levels at the same time. The perspectives of the migrant, the mosquito, the malaria parasite, and the ministry of health are related to the social and economic forces that bind these elements together, and the result is a comprehensive assessment of the problem and its situation... The project has resulted in new social and epidemiological concepts...” (p.1351).

In order to truly cope with such a monumental problem as the rise of chronic diseases in developing countries, “the conceptual framework must transcend disciplinary bounds... and a new time of research should emerge that enables the analyse... to be located in the transdisciplinary framework” (Rosenfield, 1992, p.1352). Finally, Rosenfield argues that understanding the ‘whole person’ is considered essential for treating disease and that similarly understanding the whole ecosystem is essential for resolving environmental problems and understanding the ‘whole society’ is perhaps essential for overcoming lifestyle-related problems like obesity. Social-ecological frameworks like that of Bronfrenbrenner (1979) or context-specific frameworks like that of (Ratcliffe, 1989), (Albrecht, 1990) or (Jebb, 2007) may be helpful in developing interventions for tackling problems that have been analysed from this trans-disciplinary perspective. Then, interventions are “more likely to achieve lasting results” (Rosenfield, 1992, p.1352).
3.5 Career problems with become trans-disciplinary

It is noted, however, that researchers may feel that inter-disciplinary work puts them out on a limb and is risky to an academic career (Dauphinee and Martin, 2000, Nash et al., 2003). This is echoed by Nash et al (2003), who note that trans-disciplinarity does not always fit into the traditional structures of academia. Resources and funding are generally awarded on a subject or departmental level, and funding from within the university is often dependent on the number of students enrolled on courses, which can create a disincentive for cross-disciplinary teaching (Nash et al, 2003). In addition, they note that there may be conflict in trans-disciplinary scholarship regarding issues such as authorship, roles in research grants and ownership of data. However, “possibly the greatest risk [of becoming a trans-disciplinary academic] is the professional vulnerability in being perceived as lacking a clear disciplinary focus and identity. Prestige is not often accorded to those who work closely with other disciplines” (Nash et al, 2003, p.s50). Perhaps the very requirement of trans-disciplinary research, that team members transcend the boundaries of their own disciplines (Rosenfield, 1992), is also the reason it is unpopular. (Although despite this, there are several postdoctoral programs in the US which are purposefully trans-disciplinary, in an attempt to forge a path for academics wishing to embrace this route).

4. Summary

Key points from the lit review

- Understanding a problem from multiple theoretical and disciplinary viewpoints is necessary to fully understand complex issues of significant societal concern
- Collaboration amongst disciplines is time and cost-consuming and requires a set of soft and hard processes to succeed
  - Have a ‘bigger picture mentality to see beyond the boundaries of your own discipline
  - Trust and respect of other disciplines
  - Communication and transparency about assumed paradigms
  - Setting and agreeing the project goals and systems of management
  - Agreeing a method for internal communication
  - Agreeing the process for funding a sustainable program
- The benefits of collaboration between disciplines can be significant
  - Pooling existing resources
  - Depth and breadth of knowledge, insight and skills
  - Pooling skills to bid for additional resources
  - Better results and scholarly learning

5. Frameworks in use

There is a gap in the literature for a framework specifically designed to facilitate trans-disciplinary behaviour change intervention management. Related frameworks include those aiming to develop a trans-disciplinary ethic in a researcher through developing attitude, knowledge and skills (Nash et al. 2003); to raise researchers’ awareness of colleagues research practices and paradigmatic bases (Oberg, 2009); to facilitate inter-disciplinary business collaborations (Gratton and Erickson, 2007); to
demonstrate the different phases a partnership between organisations can go through (Kanter Moss, 2002); to explore the barriers to partnership working (Kanter Moss, 1989)

As Bryan et al (2011) note, the many barriers to trans-disciplinary working “have heightened the need for models or frameworks to guide the important steps and processes of collaborative research” (p.8), and yet analysis and description of the best methods for interdisciplinary collaboration are rare (Robertson et al, 2003). This call for frameworks and models for successful collaborative trans-disciplinary research has been echoed by others (LeGris et al, 2000; Orleans, 2005) and it has been noted in the literature that the focus is generally on challenges, barriers and problems rather than frameworks or solutions for collaboration (so much so that interdisciplinarity seems like it is ‘mission impossible’ (Oberg, 2009, p.413).

Nonetheless, one such framework has been developed by (Jordan, Ory and Sher Goldman, 2005) as a result of the work done by the Behaviour Change Consortium. The authors note that “the workgroups of the BCC [Behaviour Change Consortium] were able to transcend disciplinary boundaries by developing a collaborative framework that fused scholarship and creativity to explore research problems in the area of health behaviour change theory and intervention” (p.7). As a result of their work groups, the authors developed a set of 7 common elements that seemed to foster inclusion, progress and results:

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<tr>
<th>Establishing communication channels</th>
<th>Virtual and face to face. A range.</th>
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<td>Identifying objectives</td>
<td>Solution-focused, based on a common language and culture between parties. A mission statement can be useful.</td>
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<td>Utilising common measures</td>
<td>Share data to ensure measures are consistent across all parties.</td>
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<td>Obtaining financial support</td>
<td>Coordination is expensive, so pool resources and obtain financial support for the whole program.</td>
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<td>Seeking outside feedback</td>
<td>Publishing inter-disciplinary work is difficult, so a special effort must be made to disseminate work at conferences and publish findings.</td>
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<tr>
<td>Engaging ‘big picture’ thinking</td>
<td>All parties should seek the advice of people outside their field.</td>
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<td>Bridging theory to practice</td>
<td>Create an ‘environment of fulfilment’.</td>
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This framework is a good starting point for the application of interdisciplinarity in behaviour change, but lacks detail and is nearly a decade old. Further work is required to develop a detailed and up to date framework for best practice.
6. Conclusion: synthesis

The following model synthesises the key issues in interdisciplinary working that have been emphasised in the literature to date. These concepts were used as the basis for the moderator’s guide which formed the first qualitative stage of this research project.

References:


