**Reviewer: 1**

The authors are addressing an interesting, and important area of health promotion and public health in considering how walking can be promoted. In general, the manuscript is relatively easy to follow and well laid out. The authors present a coherent argument that several persuasive aspects of the natural environment are missed out when considering messages to promote walking.

The authors then use an adapted version of an existing coding taxonomy for assessing the content of theory derived persuasive messages. Whilst I am not an expert in the assessment of reliability of such frameworks the authors appear to have taken a comprehensive approach. They cover recent literature in this area and in principle this paper could make an addition to the area with a focus on walking materials specifically.

*We thank the reviewer for appreciating the importance of the topic and recognising the contribution it could make.*

However, I have a serious concern with the underlying approach taken in this paper and as a result I am not convinced that my major comments could be overcome with any form of revision. This is a shame as the authors have obviously undertaken a considerable amount of work to complete this coding work and in principle the application of the taxonomy to walking materials is an interesting one.

Principally, I believe there is a fundamental flaw in what the authors are assessing and what should actually be assessed to make this a relevant and informative piece of health promotion evaluation. The authors state (P4, l13-14) “This is the first application of CAATSPEC to materials in which health promotion was not necessarily the aim”. In order to make relevant conclusions about messages to encourage people to walk I believe the authors should be assessing materials in which health promotion is the aim.

*The reviewer is making an important point about the nature of the materials under study and whether analysing their content represents a valid research aim suited to Health Promotion International.*

*In retrospect, the sentence which is pointed out was phrased poorly by us. We would argue that all of the materials under study aim to promote a healthy behaviour (walking). In some of the brochures (such as the illustrative brochure we describe from P17L8 to P18L2 in the revised clean version) the primary aim is clearly to promote walking (in general, not around a certain trail etc.). In some brochures, we posit that the promotion of walking may be a secondary aim, with the primary aim being to advertise a destination/trail. However, the promotion of walking is still* ***an*** *aim. To this end, we have rephrased the sentence: “This is the first known application of CAATSPEC to materials in which health promotion was not always necessarily the primary aim” (P4L22-24 in the revised clean version).*

*Furthermore, part of the motivation behind this study was to indeed provide a greater health promotion focus to these materials in the future, particularly to individuals and organisations who may have been missing the opportunity to engage people who have been less inclined to interact with natural environments (indeed this a recommendation by NICE). Moreover, in the UK at least, city and county councils (often responsible for publishing these materials) are more regularly combining their resources with health commissioners (see http://www.plymouth.gov.uk/hscintegrationstrategies for an example) so a more healthful focus to these materials is a likely outcome of such future collaboration, and indeed something which we conclude the article by recommending.*

To expand on this, the authors make a series of conclusions and interpretations of their findings which I feel are thus flawed, but it is the use of non health promotional materials which is the underlying issue. What is being presented are not limitations in current walking health promotion materials (which would represent a valid research objective) but instead what is examined is the behavioural content that is present in non-behavioural materials (which does not represent a valid objective). The supplementary file of an example walking brochure assessed in the study is a perfect illustration of this.

*We appreciate the reviewer’s concern about the appropriateness of the materials under study and agree that the validity of our research objectives is dependent on their suitability. We nonetheless contend that we are studying brochures which promote a health behaviour (walking). In the revised article we present these three quotes from NICE’s (2012) guidance on walking promotion:*

*Local authority directors for countryside management, environment, leisure services, parks, and public health…*

* *“Should ensure programmes are based on an understanding of…factors influencing people's behaviour such as their attitudes, existing habits, what motivates them and their barriers to change” (P3L1-3 in the revised clean version).”*
* *“Should develop walking programmes for adults who are not active enough, based on an accepted theoretical framework for behaviour change” (P3L3-5 in the revised clean version).”*
* *“Should ensure programmes include communications strategies to publicise the available facilities (such as walking or cycle routes) and to motivate people to use them” (P3L6-8 in the revised clean version).”*

*The article then proceeds to examine brochures which are produced by local authority directors for countryside management, leisure service providers etc. which publicise available walking facilities (walking routes and trails) and tests (to an extent) whether their content is related to accepted theoretical frameworks for behaviour change, including motivational/attitudinal factors.*

*We therefore not only feel that our research questions are valid and suitable for publication in this journal, but also they are important for testing how and in what ways these national guidelines are adhered to in the production of recreational walking brochures. This latter point is made much clearer with the revised version of the introduction which reviewer 2 recommends.*

The following points are further examples of this:

- The authors state (p16, l1) that messages frame cultural ecosystem services as motives to walk, rather than potential health gains. This is understandable as these brochures are not health promotion materials. I am also not convinced that these are really motives for people to walk more – again as these are not health promotion materials it is impossible to say for certain.

*We point this out because, as we proposed in our first response to this reviewer, part of our contribution is to suggest that in the future, brochures promoting walking in natural environments could focus on physical/mental health gains of walking as opposed to (or in addition to) aesthetic/scenic features of natural environments as reasons for walking. In some qualitative literature (e.g. the Dallimer et al., 2014 paper we cite), such features are explicitly mentioned by respondents as reasons that they walked in natural environments. Incidentally, we have removed the term “cultural ecosystem services” from the manuscript as we feel that readers of Health Promotion International may not be familiar with this idea and our use of the term was somewhat oversimplified. We therefore changed the sentence to read: “In contrast to traditional PA promotion, messages highlighting consequences often framed scenic features as reasons to walk rather than potential health gains” (P16L2-4).*

*We agree with the reviewer that is impossible to say for sure what messages were written for the purpose of motivating people to walk. However, equally, in “traditional” physical activity promotion materials (such as those under study in the Gainforth et al., 2011 paper we cite in the introduction), it is impossible to determine the reason for the selection of certain messages; this could be why the authors of that paper found almost half of the content of those brochures to not correspond to their behaviour change content categories.*

- In the introduction the authors state that PA brochures are targeted at people who are already motivated to be active rather than inactive people – this would again be the case using the brochures that they did. Therefore, it is difficult to comment on conclusions made by the authors based on their results from these brochures. Our learning about how to promote more walking in the natural environment will not come from such brochures.

*Again, we would refer the reviewer to the NICE guidelines we quote in the revised introduction and in response to their second point above. These guidelines suggest that the organisations who are responsible for the publishing of the brochures under study should “develop walking programmes for adults who are not active enough, based on an accepted theoretical framework for behaviour change.” We interpret this to mean that these walking materials (as part of multi-sectoral strategy to promote walking) should use a range of persuasive messages based on behaviour change theories. This article, albeit to a limited extent, tests whether this is the case.*

*The sentence in the introduction to which the reviewer is referring is actually describing a previous study (Gainforth et al., 2011) which found a lack of variety in persuasive messaging in physical activity brochures produced by health organisations. We did not presuppose that the content of recreational walking brochures was aimed at active or inactive people because we wanted to test whether their content mirrored recommendations by NICE. In any case, the evidence from Gainforth et al., 2011 shows that even materials produced by health organisations do not necessarily contain the most effective types of message for changing the behaviour of inactive people.*

- The authors state that in the present study “walking brochures lacked general and normative information about PA for health, behavioural prompts and efficacy information” and that this is at odds with national guidance. But the authors themselves state that these brochures are not produced for health promotion – so why would the materials be expected to contain such information?

*The reviewer is rightly making an important point about the validity of the study materials and thus, our conclusions. The reviewer poses the question of why would the materials be expected to contain information such as information about PA for health, behavioural prompts and efficacy information. We would expect them to because they are attempting to promote a healthy behaviour (a form of recreational physical activity), whether that is their primary aim or not. While they may not be promoting walking for the purpose of health enhancement (i.e. they may be promoting walking for the purpose of attracting visitors to a destination), this does not mean that they would not contain behavioural prompts for walking or information attempting to build confidence for walking as this would help the brochures achieve their aim.*

*We have mentioned the NICE guidelines a few times in our responses here and would refer to them again. We would expect behavioural information to be present as NICE recommends that the materials produced by local authorities should be based on an understanding of motivational/attitudinal factors and based on accepted theoretical frameworks for behaviour change (which include techniques such as prompting behavioural intentions, raising self-efficacy and providing information about a health-behaviour link).*

*We hope that now these NICE guidelines are made much clearer in the introduction, many of the reviewers concerns about the validity of our research aims and study materials are addressed.*

There is a disconnect between the importance of other persuasive aspects of natural environments (described on page 2, l18-25) and then the discussion of recreational walking brochures (p3, l17-24). These other aspects of the natural environment appear to have been forgotten about here and the emphasis is on examination of the theoretical content of walking brochures. There is little discussion of these additional persuasive aspects in latter parts of the manuscript.

*We agree with the reviewer that in the original manuscript there was a lack of emphasis in the discussion on persuasive factors related to physical features of the environment, and the values individuals place on these. As the reviewer rightly points out, these were brought up in the introduction as important, and then not attended to in the discussion.*

*In the revised manuscript we have taken a different approach. We have focussed the manuscript more on the need to target inactive individuals with persuasive messages related to theoretical explanations of behaviour change. We have then subsequently taken up the idea of other natural environment factors as potentially persuasive in the discussion. We have taken this approach for a number of reasons:*

1. *Reviewer 2 suggested we revise the introduction to focus solely on inactive individuals and how persuasive messaging in brochures advertising recreational walking in natural environments may help them to increase their physical activity.*
2. *We believe readers of Health Promotion International may not be familiar with the “cultural ecosystem services” we mention and the presence of behavioural information in the brochures is more in keeping with the aims of this journal.*
3. *The evidence for physical features of natural environments (and the values individuals place on these) as effective in persuading inactive people to walk in natural environments is a compelling idea. However, the evidence for this is largely qualitative, and thus used highly selective samples, at present (e.g. the Dallimer et al., 2014 paper we cite) and thus may not translate to large segments of the population. We therefore felt that it was more empirically justifiable to base our article on the effectiveness of persuasive messaging targeting behavioural antecedents.*

I don’t believe that the coding system allows to identify which messages are persuasive and for whom which the authors state is a need (p4, l1) and what I was expecting to be presented and discussed.

*We agree with the reviewer that the coding system does not allow the identification of a rank order of persuasiveness nor for whom which persuasive message may be most effective, however it was not designed to do these things. Instead it allows a rigorous classification of potentially persuasive content in recreational walking brochures based upon theoretical explanations of behaviour change. P4L8-11 in the revised clean version now outlines our aim more clearly, “Consequently our main task was to develop a relevant taxonomy of potentially persuasive message categories that could feasibly be contained within such brochures and then to identify their prevalence among a selected sample.”*

There is a lack of detail around the methodology of sourcing the brochures? What councils were contacted, how many, how many responded and provided information? This will help provide information and understanding on whether the brochures included in the study are representative of all existing brochures. Are these the most common brochures, do they have the largest readership/download volume etc.

*The reviewer makes an important point about the representativeness of the sample of brochures used in the present study. We note in the manuscript that we used convenience (or availability) sampling to source our brochures i.e. sourcing a readily available sample from the county from councils and tourism establishments. We also selected free-of-charge brochures which were available both in print and electronically so as to maximise the possibility that the materials were more often accessed.*

*In their guidance on quantitative content analysis, Riffe, Lacy and Fico (2014, p.75-76) state that convenience sampling for quantitative content analysis is justified upon three conditions: (a) the materials are difficult to obtain; (b) a researcher’s resources limit the ability to generate a random sample, and; (c) when the area is under-researched a convenience sample can be used for generating hypotheses.*

*Whilst recreational walking brochures were not difficult to obtain electronically, it was difficult to verify that these were also available in print as this involved visiting a number of organisations. It would have been a time consuming and costly endeavour to visit all of the potential organisations. Therefore, along with visiting visitor information centres and council buildings in the larger conurbations in the county, a cluster of tourism establishments in the north of the county were visited (12 sites) and a flagship caravan park in the south of the county were visited. The limited time and money available meant that we were unable to collect a wholly representative (or even random) sample of brochures from the county. The research area is relatively understudied – there has been very little research on the promotion of physical activity in natural environments apart from one review of interventions (Hunter et al., 2015), and as is made clear at the end of the manuscript, we were able to generate hypotheses for future experimental work about the effectiveness of different types of persuasive message on inactive people’s intentions to walk in natural environments when exposed to brochures containing varying amounts of behavioural information.*

*We therefore feel that our sampling strategy satisfies the three conditions set out by Riffe, Lacy and Fico (2014, p.75-76). In the manuscript we have added the following to the sampling section: “While convenience sampling results in an unrepresentative sample, it is justified here as: (a) all possible printed recreational walking brochures in the county were difficult to obtain; (b) it would have been extremely labour-intensive to have even attempted to do so, and; (c) the current selection of brochures is still useful for generating hypotheses about the effectiveness of content in recreational walking brochures; three conditions necessary for selecting convenience sampling for quantitative content analysis (Riffe et al., 2014, pp. 75-76)” (P5L9-15 in the revised clean version).*

*We nonetheless realise that the reviewer is correct that the unrepresentativeness of the sample is a limitation and so have raised this in the limitations section in the discussion: “While convenience sampling was employed to generate hypotheses about the effectiveness of brochure content, if feasible, future content analyses of recreational walking materials may wish to employ probability sampling methods to ensure better representativeness.” (P18L25-P19L3 in the revised clean version).*

P5, l2-3. I think the authors should be more explicit in stating what adaptations were made to the CAATSPEC framework and a stronger justification of why these amendments were required other than to correspond to specific messages. I am not convinced that this new taxonomy has the utility to be transferred to other activities – it would appear to be directly relevant to the walking brochures that were examined. There is a lack of information about why the adaptations to the existing taxonomy (from Abraham) were required and what they consisted of.

*In the original manuscript it was perhaps not clear exactly what CAATSPEC was. Rather than being a taxonomy of techniques, CAATSPEC is an* ***approach*** *to quantitative content analysis of persuasive communication. That is, it does not list specific categories, but invites the researcher to create semantic categories derived from, for example, behavioural theories, or evidence-based correlates of a behaviour etc. The approach has been used before to identify how leaflets promoting condom use (Abraham et al., 2002) or reductions in alcohol consumption (Abraham et al., 2007) adhere to research based correlates of those behaviours or to investigate whether information in physical activity leaflets (Gainforth et al., 2011) uses behaviour change techniques to promote physical activity to people in motivational and volitional stages of behaviour change.*

*The use of the CAATSPEC approach is unique here for a few reasons. (a) Most importantly, because it is applied to materials where health promotion was not always necessarily the primary aim (but sometimes seemingly was, as mentioned earlier). (b) We used similar superordinate headings to the ones used in Abraham et al.’s 2007 use of the approach, but expanded these into 5 rather than 4 superordinate categories. (c) Lastly, and least importantly, we categorised pictorial content whereas originally the CAATSPEC was only designed for text (although Gainforth et al., 2011 also coded pictures).*

*Hopefully the justification for (a) is clear in our responses to the reviewer thus far. (b) was done to highlight the potential differences in persuasiveness between messages promoting behavioural intentions and enhancing self-efficacy. The reviewer is right in suggesting that this was not justified in the original manuscript so we have added the following: “In a previous application of CAATSPEC, the latter two superordinate headings were collapsed (Abraham et al., 2007), but are separated here to highlight their exclusivity in conceptions of behaviour change (e.g. in the theory of planned behaviour)” (P6L3-6 in the revised clean version). As (c) is not a unique adaptation we have amended the text to read: “In a similar way to previous applications of CAATSPEC (Gainforth et al., 2011), categories were created to classify pictures of people walking (modelling behaviour) and graphics of maps (aids to planning)” (P6L23-25 in the revised clean version).*

*The reviewer expresses uncertainty with the extent to which the taxonomy can be applied to other activities. As is highlighted in the revised discussion, “The coding taxonomy was designed to facilitate easier analysis of other recreational PA materials by maintaining stable superordinate content areas within which users could define individual categories to suit different environments, PA conventions and cultures” (P18L13-16 in the revised clean version). We only recommend that the superordinate categories are maintained as they encompass a wide variety of behaviour change theories. Future users could copy some of the categories if they feel they are useful but there is no obligation to. Again, any application of CAATSPEC is an approach to quantitative content analysis and not a taxonomy that cannot be changed.*

I am also concerned about the direct mapping of brochure information onto behaviour change techniques. Behaviour change techniques are what are used in health promotion and by those involved in interventions – the techniques are used with a theoretical basis in mind of how behaviour change might occur. For example, the technique of providing information on health consequences is thought to work through a specific proposed mechanism of action (research currently being conducted by UCL). The same cannot be said for providing information on whether someone will view wildlife on a particular route. It may inform their decision making on a particular route but not about whether they would walk or not i.e., it is not designed to prompt behaviour change. The information is being provided for a different purpose.

*We mapped brochure content onto semantic categories of potentially persuasive message (this is at the core of the CAATSPEC approach). We apologise for stating that we mapped brochure text onto behaviour change techniques as this was not the case i.e. our categories do not represent behaviour change techniques, only categories of potentially persuasive message. We did derive some of our categories from existing taxonomies of behaviour change techniques, but this was only so that we could achieve a coding scheme of persuasive message categories which reflected a range of behavioural theories. We have amended the sentence in question to read: “We attempted to categorise brochure text into message categories using established taxonomies of behaviour change techniques (Abraham and Michie, 2008; Michie et al., 2013)” (P6L8-10).*

*We maintain however that all message categories could potentially influence walking behaviour, or, more likely, its antecedents (according to a range of theories). The reviewer cites how in internationally-agreed taxonomies of behaviour change techniques, each technique is associated with a mechanism of action. For example, the technique “information about health consequences” which is included in Michie et al.’s (2013) taxonomy of 93 clustered behaviour change techniques can change one’s belief about the outcomes of a behaviour and thus alter their attitude towards performing that behaviour (this is common in social-cognitive models like the theory of planned behaviour).*

*The reviewer suggests that information about opportunities to see wildlife on a walking route does not prompt behaviour change in the same way. If we accept the principle that attitudes towards undertaking recreational walking in natural environments are dependent on beliefs about the outcomes of walking in natural environments which can be influenced by knowing information about consequences of walking in natural environments, then there is no reason that this could not be the case. Put another way, information about opportunities to see wildlife on a natural outdoor walking route may change an individual’s beliefs about the potential outcomes of walking a natural outdoor walking route which in turn alter their attitude towards recreational walking in natural environments. We accept however, that this (providing description of “aesthetic” opportunities) is not as widely researched in terms of influencing walking as the effect of providing information about health consequences, hence we only ever refer to these categories as potentially persuasive.*

*The reviewer may well be correct that the motivation behind writing this information is not for the purpose of changing behaviour and if we were to speculate, we would agree with the reviewer. However, it is impossible to deduce whether the authors of brochures intend to change behavioural antecedents or not. All we can speculate upon is the effect that reading it will have upon a reader and we posit that, for some individuals, knowing that there is an opportunity to view wildlife on a particular walking route may alter their attitude towards undertaking that walking route; attitudes being an important antecedent of behaviour change in a variety of behavioural theories.*

Figure 1 is not of sufficient quality to be able to view each category even zoomed in.

*We have endeavoured to resolve this issue with our resubmission.*

**Reviewer: 2**

This manuscript constitutes a valuable contribution to my knowledge about tools that help analyse the application of behaviour change strategies in promotion material in the context of outdoor recreation, specifically recreational walking.

I believe the paper can be published by Health Promotion International pending minor revisions.

On the positive side, this paper is very well articulated, almost always very logical, and a well-documented piece of academic work.

The most valuable contribution of this paper is the theory-based development of a taxonomy to analyse the use of behaviour change persuasion techniques in outdoor recreation promotion material (i.e. brochures). The authors combined a top-down and bottom-up approach to develop this domain specific taxonomy.

Generally, the majority of contentions in the paper are credible, specific and well-supported.

*We thank the reviewer for their kind comments and recognising the contributions the paper makes to the field.*

However, there are some areas that need attention. The most significant areas/aspects that I believe can and should be better addressed by this paper to optimize its effectiveness are the following:

Story line: I am not fully convinced by the story you set up for your specific study, the sampling of the brochures and some conclusions you draw. I recommend to better stress in the whole paper what is part/aim of your distinct study, including what conclusions you can honestly draw based on your sampling and the framing of the societal relevance/starting point that is the motivation for your study. From your introduction I expected something a bit different to what you present. I will explain it in the following.

You set up the focus of study as: Recreational walking for inactive (and socially deprived) people in natural environments should be communicated more convincing. You also mention correctly that (time/geographical) distance to natural environments is a key factor for participation in (nearby) outdoor recreation. And then you sample brochures of recreational walking trips ranging from short trips to long-distance trips (e.g. “Two Moors Way”). This doesn’t convince me for several reasons. First, there is a difference between workday recreation in nearby nature (e.g. parks, nearby outdoor recreation areas) and weekend recreation which is dependent not only on individual leisure time constraints during working days compared to the weekend. Second, deprived areas often do not locate close to attractive outdoor leisure environments, so that the access to the promoted recreational walks is probably not so easy for the socially deprived inactive people (especially children, youths, working people) you refer to as starting point of your story. To walk parts of long-distance trips access by bus, train or car (as recommended in brochures, e.g. “Two Moors Way”) is necessary – this requires the corresponding financial resources, good bus/train connection from the deprived area to the walking trail. – I suggest, first, focus in your story on inactive people, and take up the idea of behaviour change interventions (in brochures) for socially deprived inactive people in the Discussion/Future Research section of your paper. Second, please define “recreational walking” in the beginning (e.g. workday, weekend, nearby, long-distance, starting point from home or elsewhere…). In different countries it can reflect different behaviours so that the term “recreational walking” can be misunderstood.

*We thank the reviewer for this thorough comment. We agree that the availability of natural environments varies dependent on weekday/weekend opportunities and the type of nature dependent on an individual’s socio-economic status and living environment. We also agree that the introduction may have misled the reader as to what is to follow. In line with the reviewer’s suggestions, and in line with the suggestions of reviewer 1, we have revised the introduction thoroughly. It is now focussed, as the reviewer suggests, on the need to engage inactive individuals in walking and how recreational walking (now more clearly defined as walking in free time for the purposes of enjoyment – with a reference to a source) in natural environments may facilitate this (P2L3-P4L14 in the revised clean version).*

*The discussion now briefly takes up the idea of physical activity promotion in local greenspace for people living in areas of high deprivation and is detailed after one of the reviewer’s other comments (see reviewer’s comment entitled “P18.16-17”).*

Now for some specific comments:

Keywords, Summary, Introduction

Keywords: on first page and page 1 line 2 (which I will denote henceforth as 1.2) are not identical. I suggest include “behaviour change” and “persuasion” as keywords.

*We apologise that these did not match. New Health Promotion International guidelines state that a maximum of five keywords are to be selected from a pre-defined list on the submission system (which has been updated since our original submission). Unfortunately, neither “behaviour change” nor “persuasion” are on this list. The list of keywords now reads, “physical activity, nature, recreation, exercise, environment.”*

P1.4: do you have an actual figure, reference for contention?

*We are unsure of Health Promotion International’s rules on including references in the abstract, but instead we have adapted the first line of the abstract: “Targeting walking promotion seems a promising way of rectifying growing levels of physical inactivity.” (P1L5-6 in the revised clean version) and provided a figure and references in the first line of the introduction instead: “Physical inactivity is increasing across Europe, threatening human health and costing the European economy over €80 billion per year (International Sport and Culture Association, 2015)” (P2L4-6 in the revised clean version).*

P4.3: please state the novelty (i.e. five instead of originally 4 superordinate categories).

*Due to the revision of the introduction, the CAATSPEC approach is not introduced until the start of the method. In line with the reviewer’s suggestion we have stated the novelty of its application more explicitly under the “taxonomy” subsection: “In a previous application of CAATSPEC, the latter two superordinate headings were collapsed (Abraham et al., 2007), but are separated here to highlight their exclusivity in conceptions of behaviour change (e.g. in the theory of planned behaviour)” (P6L3-6 in the revised clean version).*

Methods

P6.14-16: You state on P.4.9-10 that the CAATSPEC and your revised version of it (which I will denote henceforth as CAATSPEC-Rec) use disjoint coding categories. However, in the taxonomy paragraph some illustration of the categorical system seems to me not mutually exclusive. There, you describe under the superordinate “Potential consequences and opportunities” twice a “social” category (“social” and “sociability”) and give the identical example (“family enjoyment”) for both categories. I do not understand the difference between these two categories from reading the manuscript text. Having looked up the categories/decision trees in your coding manual, I think that the examples are not well chosen and the description of the conceptual difference between the categories should be improved. E.g. by adding “of the advertised walk and not of PA or walking in general.“ after opportunities at P6.17. The key difference/decision is not between PA in general and ecosystem services, but between PA in general and the advertised walk.

I recommend the same clear up for the description of the social categories in the superordinate “Establishing normative beliefs” paragraph (P6.21 vs. P6.23).

*We agree with the reviewer that in the original version of the manuscript the distinction between these categories was not clear. Throughout the revised version of the manuscript we have now omitted talk of ecosystem services as we believe this term may not be familiar with readers of Health Promotion International. In line with the reviewer’s suggestions we have adapted both sections to explain the conceptual difference between PA in general and the advertised route. We have also changed the example of social consequences of walking the advertised route to “opportunities for children’s enjoyment” (P7L13-14 in the revised clean version) to better clarify that there is more than one potential social consequence included in our taxonomy.*

P5.17: Two important aspects of the representativity of the n = 26 brochures remain unclear. First, please provide information about the variance in the (communication, marketing) agencies /authors that are responsible for the text in the brochures – if possible. It is sensible to assume that e.g. the Exeter City Council works with one preferred agency to produce their different recreational walking brochures. This may have an influence on the variety of messages used in the brochures.

*We agree with the reviewer that the range of publishing/production affiliations could be made clearer in the manuscript. In the supplementary materials (S-1) we present a table detailing all the relevant publishing credits for each brochure in the sample. In line with the reviewer’s suggestion, we have added a column to this table which details the organisation which actually produced and printed the brochure. We have also added the following to the “sampling” section: “They were associated with 29 different organisations and printed by 9 different production companies” (P5L17-19 in the revised clean version).*

Second, the brochures seem to cover a wide range of walking trails, such as long walking distance trails as the “The Moors”, which is primarily accessed by bus or train, to trails starting in / at the edge of a city. To analyse the marketing of long-distance trails that can hardly be accessed by foot is a bit inconsistent to the Story in the introduction, where a link is made to socially deprived inactive populations living nearby natural environments but not using them for everyday recreational walking. Please straighten your story.

*We agree with the reviewer that the setup in the introduction and the subsequent study of brochures advertising long-distance walking routes away from larger urban conurbations is inconsistent. As with the reviewer’s initial comment, the introduction has been thoroughly revised and now focuses on natural environments as supportive environments for physical activity for inactive people (not just those living in areas of high social deprivation). The idea of inactive people not necessarily living near to such routes (and the resultant need to promote walking in everyday natural environments for such populations) is a criticism which is taken up in the discussion (see the reviewer’s later comment entitled “P18.16-17”). However, it should be noted that part of the aim of this study is to find ways in which brochures could promote walking these longer routes to inactive people.*

P7.17: there is a typo “it easy…”. Please add the verb.

*We thank the reviewer for noticing this mistake. The verb “is” has been added (P8L16 of the revised clean version).*

P8.23: Please introduce the acronym “<LEFT BLANK FOR ANONYMITY PURPOSES>” the first time you use it. It guess the word “coder” is missing.

*In line with reviewer 3, we have changed these acronyms to “the first author” and “the second author” (P9L21 and L23 and P10L6 in the revised clean version).*

P10.6: What do you mean by “confidently”? Please define or provide reference.

*We agree with the reviewer that this is unclear. We have changed the text to read, “There were only 35 categories (including an ‘uncoded text’ category) that contained enough instances to confirm reliability with a statistically significant AC1 value” (P11L1-3 in the revised clean version).*

Results:

P15.19-21: You state and show in Table 1 that all 33 (26 reliable) frequency categories refer to the advertised route; none to PA or walking in general. But at this passage in the text with respect to an illustrative brochure you state that a certain brochure “was also largely devoted to the promotion of walking in more generally as opposed to its related recreational walking routes”. This is a contraction from my understanding. Furthermore, the cited categories here are all unreliable categories. I don’t understand why - to illustrate something - you cite not representative, unreliable results. -> I suggest to move this paragraph/illustrative example to the Discussion and integrate it at P17.3 into the text.

*We agree with the reviewer that this section of text does not belong in the results section owing to its focus on categories which we were not able to significantly establish reliability for. In line with the reviewer’s suggestions, it has been integrated into the discussion at the end of the section on NICE guidance (P17L8-P18L7 in the revised clean version).*

Discussion

P16.19: Do you mean for all types of “walking” (as written), or for PA and walking in general, or for recreational walking, or…? Please clarify.

*We agree with the reviewer that this is unclear. It is supposed to mean all types of walking and we have changed the text to read, “especially content encouraging general walking behaviours” (P16L22-23 in the revised clean version).*

P17.18-22: In order to strengthen your argumentation that the brochures particularly addressed people who already do recreational walking in nature: please provide evidence that general and normative information about PA for health, behavioural prompts and efficacy information encourage especially inactive people rather than people who are already active to practice physical activities.

*We agree with the reviewer that evidence to back up this contention is needed. We have entered the sentence, “Messages containing such information can be effective in motivating inactive people to set better plans to undertake PA (Sweet et al., 2014)” (P16L21-22 in the revised clean version). The study cited recruited inactive people to read physical activity messages containing such persuasive techniques and found that better quality action plans for physical activity were made after reading these compared to control messages.*

Strengths, Limitations, future research.

P18.16-17: You mention sampling restrictions. I think, you should also discuss the limitations/strengths of having included material about both, short/nearby and long-distance walks.

*We agree with the reviewer and have tied this comment in to our responses to their first comment about taking up the idea of deprivation in the discussion. Along with our other limitations about brochure sampling, we have added the following: “some of the brochures detailed long-distance trails. While long-distance trails traverse many settlements, they tend not to locate near to larger conurbations meaning that they may not facilitate everyday recreational walking for populations such as those living in urban areas of high deprivation who experience a greater burden of inactivity-related poor health (Ball, 2015). Focusing on how to best promote shorter-distance recreational walking in urban green spaces may be more effective in ameliorating the relative lack of greenspace use by these populations (Jones et al., 2009)” (P18L19-25 in the revised clean version).*

P18.13: You write that the brochures attempt to persuade people “to walk in natural environments.” I think this statement is misleading. I think that these brochures attempt to attract people to recreate in certain landscapes, not to be physically active/to walk in natural environments.

*We agree with the reviewer that the statement is misleading and have changed it to read: “Furthermore, it has identified for the first time the range of messages used in walking brochures which attempt to attract people to recreate in certain landscapes” (P18L11-13 in the revised clean version).*

P18.21: here you state that 8 categories were unreliable, on P12.6, you mention 7 unreliable categories. Please clarify.

*Category 53 (which was rendered unreliable in the resolution phase) is the eighth. We realise this may be confusing for the reader, so we have simplified it in the earlier section by stating: “Of these 33, seven had insufficient data in the reliability phase to determine reliability (categories 3, 18, 49, 55, 70, 77, and 81) and another was category 53, which, as discussed earlier, did not meet the 0.6 AC1 threshold after the resolution phase” (P11L23-P12L2 in the revised clean version).*

P18.11: Comprehensive in which sense? As general as you state it, I think this is somewhat overambitious; there is solid evidence that e.g. having a dog is a strong extrinsic motivator for everyday recreational walking in nearby outdoor recreation areas. Your taxonomy covers social benefits (for children, family, but does not include e.g. the “family friend” dog. There is also evidence that people consciously recreate in nature to gain psycho-physical resources to better meet daily demands (not just to recover, relax,..), to free from conventions (“feel free”) for a moment, to connect with the creation/spiritual needs, for feelings of flow, for problem-solving. This cannot be all subsumed in the Mental Health category.

*We agree with the reviewer that neither ours, nor previous taxonomies are fully comprehensive of the range of potentially persuasive messages used. The aim in expanding our message categories from previous behaviour change technique taxonomies was to highlight that techniques in previous taxonomies could be divided into potentially differently persuasive message categories. As the reviewer has rightly pointed out, even our categories (such as mental health benefits of PA or walking in general) could be subdivided into affective benefits, restorative benefits, spiritual benefits etc. all of which may be differently persuasive to different readers. As a consequence we have added the following to the end of that paragraph: “Even with the present taxonomy, categories such as mental health consequences of walking (category 15) could be further subdivided into affective benefits, restorative benefits, and spiritual benefits for instance. Each may be differently persuasive for different readers. In future, researchers may want to consider the strengths of comprehensiveness and parsimony when deciding upon message categories” (P19L17-22 in the revised clean version).*

P19.23: I suggest to be more precise and say, that it is about Public Health supporting recreational walking brochures (instead of e.g. visitor attraction).

*We agree with the reviewer and have changed the final sentence to read: “Public health bodies could support the creation of recreational walking brochures in order to achieve this” (P20L17-18 in the revised clean version).*

References

P20.17: There is a full stop to much after the year bracket.

*We thank the reviewer and have made the edit (P20L22 in the revised clean version).*

**Reviewer: 3**

This is a well-written manuscript that addresses an interesting topic. The Methods and Results sections were comprehensive. However, I think there needs to be more explicit links to health promotion in this manuscript, where appropriate. For example, some sections of the Discussion or the Conclusion could make reference to health promotion actions to provide relevance to this journal.

*We agree with the reviewer that more explicit links to health promotion could be made. We have fully revised the introduction section in line with the comments of reviewers 1 and 2 and believe this goes some way to addressing this concern (P2L3-P4L14 in the revised clean version). The reviewer’s concern may also stem from our contention that our article represents “the first application of CAATSPEC to materials in which health promotion was not necessarily the aim.” In retrospect, this was a poorly worded sentence as the promotion of a health behaviour is clearly an aim of the brochures under study (for example, the illustrative brochure which now forms part of the discussion is demonstrably related to general health promotion – P17L8-P18L7 in the revised clean version); it just may not be the primary aim of some of the brochures under study. Reviewer 1 also expressed concern about the article’s relevance to health promotion stemming from this contention and we believe our revisions in this regard address this.*

*In the discussion, through addressing reviewer 2’s comments, especially regarding social deprivation and whether the coverage of long-distance trails etc. is appropriate, we believe we have made further clear links to the article’s implications for health promotion (P18L19-25 in the revised clean version).*

In addition to making clearer links to health promotion, I suggest some minor edits need to be made before this manuscript can be considered for acceptance in this journal. In particular, I had difficulty reading Figure 1 so I'm suggesting it needs to be reproduced to make it more legible. Also it appeared after Table 1 in the PDF version that I reviewed. I did not locate S-1, S-2, S-3, S-4 or S-5, are they meant to be appendices? This therefore meant that my review was not fully informed, which I found challenging/annoying.

*Unfortunately submission of figures to Health Promotion International requires a low-resolution image (72 dpi). We resubmitted a higher resolution version for reviewers’ consideration on the request of the editor (500 dpi) but clearly, as reviewer 1 pointed out as well, this is an issue which we will attempt to resolve by resubmitting a further higher-resolution image. We will send this version separately at resubmission for reviewers’ consideration. It appears after Table 1 because the automatic manuscript generation software places separate image files at the end of the document.*

*S-1 to S-5 refer to electronic supplementary materials and we are sorry that these were not able to be considered in this reviewer’s first review. However, it seems that the other reviewers had no problems accessing these. We will make sure these are available for consideration after resubmission.*

Here are my suggested edits:

p.2, lines 18-19 - the word 'persuasive' is used twice so you might like to replace it once with a similar word.

*As the introduction has been thoroughly revised, this repetition is no longer present.*

p.4, line 13 - might be best to state 'this is the first known' application, just in case one actually does exist.

*We agree with the reviewer and have made the suggested edit: “This is the first known application of CAATSPEC to materials in which health promotion was not always necessarily the primary aim” (P4L22-24 in the revised clean version).*

p.8, line 23 - please define the acronym <LEFT BALNK FOR ANONYMITY PURPOSES> - if this is one of the author's then perhaps you can list 'author' instead?

*We have changed all mentions of this acronym to “the first author” (P9L21 and L23 and P11L8-9 in the revised clean version).*

p.9, line 21 - please define the acronym <LEFT BALNK FOR ANONYMITY PURPOSES>- if this is one of the author's then perhaps you can list 'author' instead?

*We have changed all mentions of this acronym to “the second author” (P10L6 in the revised clean version).*

p.14, line 17 - should the brochure you refer to as a 'good' example be included as an appendix?

*We agree with the reviewer that the illustrative brochure may be out of place in the results section, but in line with reviewer 2’s comments, we have moved this section to the discussion as an example of how brochure content could be designed (P17L8-P18L2 in the revised clean version).*

p.15, line 12 - might be best to state 'this is the first known' study, just in case one actually does exist.

*We agree with the reviewer and have made the suggested edit: “This is the first known study to develop a specific coding taxonomy for, and conduct a content analysis of, recreational walking brochures” (P15L13-14 in the revised clean version).*

p.16, line 12 - I think the heading could be clearer, perhaps you could include 'PA' or 'walking' in it too? Also, given you referred to NICE in the Introduction, I think it would be beneficial to refer to it again in this or another section of the Discussion.

*We agree with the reviewer that heading is unclear and have changed it accordingly to “Do brochures conform to NICE guidance on walking promotion?” (P16L13 in the revised clean version).**We have also been more explicit in our references to the NICE guidelines in the introduction (P2L21-P3L8 in the revised clean version). Additionally, in line with the reviewer’s suggestion, we have added the following in the discussion after our recommendations for future brochures: “Doing so would help meet NICE’s recommendation that local authorities “develop walking programmes for adults who are not active enough, based on an accepted theoretical framework for behaviour change” (NICE, 2012, p.18)” (P17L4-6 in the revised clean version).*

p.18 - Have you considered whether the use of social media or 'apps' might be potential mechanisms for increasing walking in natural areas?

*The use of electronic (as opposed to written) media for promoting outdoor walking is certainly an interesting avenue for future research and could be an interesting (if challenging, considering potential for tailoring/feedback) application of the taxonomy in the future. Indeed other content analyses have looked at behavioural techniques included in exercise ‘apps’ (see Cowan et al., 2012 Apps of steel:* *are exercise apps providing consumers with realistic expectations? A content analysis of exercise apps for presence of behavior change theory, Health Education & Behavior; Conroy et al., 2014, behavior change techniques in top-ranked mobile apps for physical activity; American Journal of Preventive Medicine).*

*In line with your suggestion we have modified the first sentence of the strengths, limitations and future research section to read: “The main strength of this study is that it produced a flexible taxonomy for analysing materials that advertise recreational PA in a variety of different communication channels such as websites or mobile applications” (P18L9-11 in the revised clean version).*

p.19, line 2 - should that read 'was coded' rather than what it currently is? The tense seems incorrect.

*We agree with the reviewer and have made the suggested edit (P20L9-10 in the revised clean version).*

p.19, line 12 - I'm not quite sure what you mean by 'ends' here? I suggest you replace it with a more appropriate term.

*We agree with the reviewer and would have replaced it with the word “purposes.” However, in line with another reviewer’s suggestion, the final sentence has changed to read: “Public health bodies could support the creation of recreational walking brochures to achieve this” (P20L17-18 in the revised clean version).*