Author's response to reviews

Title: Time perspective as a predictor of smoking status: Findings from the International Tobacco Control (ITC) Surveys in Scotland, France, Germany, China, and Malaysia

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Dear Dr. Niaura,

Thank you very much for the opportunity to submit a revision. We are pleased the reviewer feels that the manuscript will be an important contribution to the literature in this field, and we are grateful for the valuable comments and suggestions that were provided.

We have addressed each major comment/query made by the reviewer, and have cross referenced within the manuscript itself. Our responses to each of the specific concerns noted by the reviewer and the editor can be found below. We have also made a few minor edits to meet the additional editorial requirements requested by the editor.

We feel that the quality of the manuscript has been improved as a result of these revisions, and we look forward to receiving your response.

All the best,

Genevieve Sansone
(on behalf of the authors)
Responses to reviewer’s concerns:

1. While the authors do a nice job describing time perspective (the primary predictor variable) and reviewing the literature on time perspective and smoking, it is not clear how this variable differs from similar constructs. For example, as defined in the current study, time perspective seems quite similar to impulsivity. Moreover, the literature on smoking and impulsivity is more extensive. Thus, the introduction could be strengthened by a brief discussion of how time perspective is a unique concept.

The construct of time perspective has been differentiated from similar personality variables such as impulsivity in the literature. We have added a paragraph to the introduction to discuss the distinctions that have been made between time perspective, sensation seeking and impulsivity (see page 4, paragraph 2).

2. Another concern is the operationalization of smoking (smoker vs. non-smoker). More specifically, collapsing never smokers and quitters into the single category “non-smoker” is problematic. Conceptually, it seems that differences in time perspective may exist between never, former and current smokers. Thus, treating these groups separately in the analyses would be preferable. Of course, data showing that no differences exist between never smokers and former smokers would also address this concern.

The reason that former smokers were not examined separately from never smokers was the unequal distribution of these categories across the countries that were included in this study. In two of the countries (Scotland and China), data from the second wave of the survey were used, which meant that the samples for these two countries included a small number of respondents who had quit smoking since the last wave. However, for the three remaining countries, the first wave of data was used, so there was no ‘quitter’ category. Thus, the decision was made to combine the categories of ‘quitter’ and ‘non-smoker’ for Scotland and China. This has been clarified in the Methods section (see page 9, paragraph 3).

It is correct to note that the definition of a non-smoker in the ITC Project does include respondents who may have smoked in the past, before they were recruited for the survey (i.e. ‘former smokers’). There may be differences in time perspective according to these more refined categories of never smoker, former smoker, and recent quitters; however, the focus for this paper was on comparing current smokers to current non-smokers. Moreover, there is some empirical evidence that never smokers do not differ from ex-smokers on impulsivity\(^1\); while we have established that time perspective is a related but separate construct from impulsivity, there may be a similar pattern with time perspective. A note has been added to the Discussion section that looking into quitters is an area for future research that we would like to examine with ITC data (see page 15, paragraph 2).

3. It is not clear if the single item time perspective measure was psychometrically evaluated in each country under consideration. If so, the translation and evaluation process should be described. If not, this potential measurement issue should be described as a limitation.
The scale in which the single item originated (the Time Perspective Questionnaire; TPQ) has good reliability and validity, as shown by its predictive power for a variety of health behaviors, as well as having discriminant validity in relation to potentially similar personality constructs such as impulsivity.ii

A complete cross-country analysis of the reliability and validity of the English version of the single time perspective measure in the ITC Surveys has not yet been conducted, although recent analyses in a selection of ITC countries produced acceptable reliability scores for this measure in high-income Western countries (including France and Germany). Hall et al. (2012) also found good predictive validity for the single item measure in predicting quit attempts in four Western countries.iii

We were not able to compute the test-retest reliability of the measure for this study because we were using data from the first survey wave for most of the countries, so it was the first time the question was asked in those countries. As more data is collected in future survey waves, we will be able to evaluate the measure more fully across both Western and non-Western countries.

Regarding the translation process for the measure, all ITC surveys are translated by professional bilingual translators, and in the case of measures like the time perspective question, the translations are checked by one or more subject matter experts fluent in the language. There are typically multiple bilingual partners in each cultural/linguistic group. This process is meant to reduce or eliminate any potential measurement bias across countries. The Methods section has been updated to clarify this process (see page 9, paragraph 2).

4. Perhaps the most serious concern involves the logistic modeling methodology used. In fact, given the significant interaction between country and time perspective, it is not clear if the data from the various countries should be pooled. A stratified analysis may be preferable and more informative in this situation, particularly given the large sample size and the diverse countries involved.

The ‘pooled’ analysis across all of the countries was used to examine whether the relationship between time perspective and smoking status was the same across countries (or strata), and in order to test this formally, we needed to do a pooled logistic regression with the inclusion of a time perspective by country interaction term. Once the interaction was seen to be significant, we did conduct a more stringent country-by-country (or stratified) analysis to investigate what the interactions looked like, which was reported in the last paragraph of the Results section. We have modified the wording of the last paragraph of the Results section to clarify this (see page 11-12).

5. Related to item 4 above, the authors’ interpretation of the results is problematic. The findings do not seem to support the claim that time perspective is an important predictor of smoking status across multiple countries. While the relationship was observed in most countries under consideration, the association was not statistically significant in China.
We appreciate this concern, and we were careful not to make an absolute or unconditional conclusion on the relationship between time perspective and smoking status across all countries. On page 13 (paragraph 1) in the Discussion section, the interpretation of the main findings states that the association between time perspective and smoking status was significant in only four of the five countries (not China). We then go on to discuss possible explanations why the results in China differed from the other countries that were included in the study.

We have made further adjustments to the wording of the first paragraph in the Discussion (page 12, paragraph 2) and the sentence about the main findings in the Conclusions section (page 16) to make it more clear that the same relationship was not observed in all countries.

Response to Editor’s Comment:

**In addition to the reviewer's comments, please indicate why this paper merits publication given that several papers on this topic, from this research group, and which have apparently used data from this survey, have already been published.**

While two of the authors have previously published research on time perspective and smoking, including experimental work, only one other paper in this area has been published by the ITC research group. This paper, cited in the manuscript, looked at the association between two different personality variables – time perspective and sensation seeking – and quitting behavior, using data from four high-income countries (US, Canada, UK, and Australia) collected between 2002 and 2004. iv

The present study looked at five different countries where the ITC Project has been conducted, using more recent data (collected between 2005 and 2008). The purpose of this study was to examine the cross-sectional relationship between time perspective and the likelihood of being a smoker. Establishing this association is an important contribution to understanding the role of time perspective in smoking behaviour, and may lead to other hypotheses that can be tested with longitudinal data, such as the predictive ability of time perspective on outcomes such as cessation, which was the aim of the previously cited paper.

In addition, the countries included in this study have greater variation in terms of tobacco control policies and smoking behavior than the previously cited paper, and as a result, these findings shed new light on the generality of the relation between time perspective and smoking in a much broader and more diverse sample.

We feel this paper will make a valuable contribution to the literature on time perspective and its role as a factor in understanding smoking behavior in an international context.

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