Introduction

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In social science research, Jahoda et al.'s study on Marienthal (1971) and the “Authoritarian Personality” by Adorno (1950) pioneered the integration of qualitative and quantitative research. For a long time after these studies had been published, however, the development of qualitative and quantitative research and their application in research projects were largely kept separate. This included strong reservations of both traditions about the scientific value of the other.

In the last 15 years this has gradually changed. More and more researchers have applied mixed methods to answer their research questions. In addition, Creswell (2009) and Tashakkori and Teddlie (1998, 2002); Teddlie and Tashakkori (2009) codified and summarized the knowledge about mixed methods in three textbooks and one handbook. Finally, The Journal of Mixed Methods, dedicated exclusively to mixed methods, was founded in 2007.

The two main goals of mixed method approaches can be seen as, firstly, developing new hypotheses from qualitative studies which can be tested in the process of research by both consecutive qualitative and quantitative or mixed methods approaches. This corresponds more to the real situation of the research process, which is not characterised by testing one or more hypothesis only at one point in time in one study, but characterised by a continuous development and change, driven by the scientific community involved (see Lakatos 1978 and Kuhn 1996). Secondly, issues of validity can be targeted by testing the quality of quantitative

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instruments by using qualitative methods either before, parallel to, or after the quantitative study. By such comparisons one can test whether the different methods yield comparable results.

As Kelle (2007) formulated, many researchers who integrate different methods use a pragmatic approach without a sound theoretical foundation of qualitative and quantitative research traditions. This problem has also been addressed by Bryman (2007) who analysed the designs and outcomes of mixed methods projects in the United Kingdom. One of his major findings was that most of the projects did not clearly demonstrate what the added value of the mixed method design was. He pointed out that there is now a danger that it is becoming a fashion without enough substance and innovation.

Therefore, it is important to find answers to the questions: For which research questions in the social sciences are qualitative, and for which research questions are quantitative procedures more useful? How can the advantages of both methodological traditions be used? (see Kelle 2007, p. 15)

In this special issue of *Quality and Quantity*, which from its inception in 1967 has been dedicated overcoming the split between qualitative and quantitative research, we have tried to choose papers which apply mixed methods in different substantive areas, and try concretely to show what the added value of the mixed method design and analysis was.

The paper by Onwuegbuzie, Johnson, and Collins addresses the Legitimation in Mixed Research and proposes a new framework for this purpose. The authors have merged their nine domain typology for research paradigms with the four domain paradigm of Greene, as these two typologies intersect. It would be an additional task to integrate this unified typology with Lakatos' concept of Research Paradigms (1978) in which he only differentiates three aspects: metaphysical assumptions, core theory, measurement theory including correspondence rules. The added value of this paper is its conceptualization of the different domains for mixed methods research.

The paper by Rajman and Hochman provides an excellent specific example of how mixed methods can be used as a useful research design in the study of national identity and ethnic exclusionism. More specifically they study the ways in which conceptions of national identity and nationalism and perceptions of socioeconomic threat explain exclusionary attitudes of Jews (majority group) toward labor migrants in Israel. Firstly they provide a quantitative analysis based on survey data from the International Social Survey Program (ISSP) 2003 to explain how individual patterns of attachment to the nation state and perceptions of socioeconomic threat affect support for the extension of rights to non-citizens in Israel. Secondly they apply a qualitative analysis, which is based on in-depth interviews through which they better understand the way ordinary Jewish citizens feel and express their attachments to the nation-state and their motivation for sharing the goods of citizenship with non-Jewish labor migrants in Israel. The added value of this paper can be characterized as follows: in the field of ethnic exclusion nearly all papers are either qualitative or quantitative papers, whereas this paper uses a mixed methods design. But this is not enough. As Bryman (2007) has argued it is necessary to demonstrate concretely which specific inferences could be drawn in mixed methods projects, otherwise there is a danger that it becomes only a fashion. Rajman and Hochman can show convincingly that firstly qualitative and quantitative results converge. Secondly they report complementarity of the findings and show that the qualitative findings provide a framework in which the quantitative findings can be interpreted. More specifically they are, for example, able to identify other national identity dimensions (commitment and loyalty) that were not included in the survey, but were seen by the respondents as core elements of what it means to be truly "Israeli". They not only employ deductively formulated propositions for the quantitative part but also propose Zimmer's framework for the

analysis of the social construction of national identities for the analysis of the qualitative data. They conclude that from their point of view a sequential design of qualitative-quantitative-qualitative (focus groups/cognitive pre-tests, survey, in-depth interviews) would be optimal.

The paper by Latcheva deals with the same substantive topic that is national identity but explores the outcomes of a qualitative technique (cognitive interviews) and a widely used quantitative technique (exploratory and confirmatory factor analysis) to assess the validity of items. Both techniques are concerned with the question of whether an indicator measures what it is supposed to. The quantitative analysis is on a series of exploratory and confirmatory factor analyses based on representative 1995 and 2003 samples of the modules on national identity of the International Social Survey Program (ISSP) in Austria. The response for the qualitative part is based on cognitive interviews between 2003 and 2005. The analysis of the testing reports is conducted for three aspects: (a) comprehension difficulties (interpretation of key concepts) (b) different perspectives respondents adopted in answering the same question, (c) difficulties interviewees experience through cognitive tasks such as trying to select appropriate response categories. In sum six scales were analysed in the quantitative and qualitative analyses: (1) National pride Scale; (2) Identity Salience Scale (new in ISSP 2003); (3) scale for the measurement of individuals emotional attachment (local, regional, national, supranational); (4) scale for measuring criteria for being truly Austrian; (5) scale for measuring xenophobia; (6) scale for measuring protectionism. The analysis of the cognitive interviews enables the author to detect the substantial sources of measurement error with regard to the content of the constructs. This evaluation of the content validity cannot be achieved by the quantitative techniques employed here like exploratory and confirmatory factor analysis. The important finding is that although the factor loadings on the respective latent variables are moderate or high and satisfy the usual standard of being higher than 0.5 (Brown 2006), six major shortcomings were found. Exemplarily, we mention the first one. This is a too broad and unspecific formulation of key terms like democracy, history, political influence which cause different problems like item non-response, variance in a question's interpretation, construction of sub-optimal instead of optimal answers and decrease in respondents' motivation to conduct the necessary cognitive work.

The added value of this article is firstly the combination instead of the separate analysis of cognitive interviews and quantitative techniques like exploratory and confirmatory factor analysis. In social research and in publications, normally either cognitive interviews or quantitative techniques like factor analysis are used and no cross-inferences are drawn. Secondly, the author's demonstration that internationally widely used and according to the quantitative criteria, well developed instruments have a lot of shortcomings, which one usually would not detect.

Another study that examines shortcomings of purely quantitative approaches is presented in the paper by Salzborn, Brosig, and Schmidt on the topic of Anti-Semitism in Germany. Questions referring to anti-Semitism are without doubt sensitive questions and are potentially highly susceptible to social desirability response set bias. Therefore it can be assumed that the amount of anti-Semitism found in representative surveys is downwardly biased. Furthermore one has to differentiate between responses in an interview situation and public expression. Taking this into account, this paper uses a triangulation design. The triangulation refers to three aspects. (1) The authors use data from a connected subsample employing in-depth interviews of a representative study of the adult German population in connection with data from this representative sample; (2) They apply both attitude theory and psychoanalytic theory as a theoretical framework; (3) They employ aspects of psychoanalytic theory and the method of deconstruction for analyzing the 19 in-depth interviews. Exemplarily they

show in detail the analysis of one person using the data from the standardized scale and the material from the in-depth interview. One of the striking results of this study shows that anti-Semitism is primarily linked to emotion and not linked to cognitive knowledge and that the amount of anti-Semitism expressed by standardized items is considerably downwardly biased. This should be taken into account in the use of future operationalization of anti-Semitism items in standardized surveys, which mostly refer to cognitive aspects and usually do not control for social desirability response set. In addition, it shows that in this topic mixed methods studies are very necessary to get a more adequate picture of reality and its underlying mechanisms.

The paper by Gorodzeisky deals with focus groups as a tool in the construction of questionnaires and applies this method to the study of discriminatory attitudes. It demonstrates the supplementary use of focus groups beside quantitative methods to establish divergent validity of two concepts. The two concepts, where there had been a lot of discussions about their divergent validity, are prejudice and perceived threat in the study of minority populations. This has been controversial in research for a long time. In quantitative research one has recently tested the divergent validity of the two concepts by using confirmatory factor analysis. By using the tool of focus groups, Gorodzeisky firstly examines the concept prejudice against foreign workers within the context of the Israeli Society and identifies specific linguistic expressions that reflect it. Secondly she identifies the main components of the perceived threat posed by foreign workers to Israeli residents. Thirdly she examines the distinction and/or overlap between prejudice and perceived threat. One of the interesting findings is that one can use this method to reach decisions about inclusion or exclusion of items beside the usual criteria in quantitative research like Cronbach's Alpha of a scale or the factor loadings of individual items. Furthermore, her data demonstrate rather clearly the high relevance of questions related to national and cultural homogeneity of society to measures of perceived threat posed by foreign workers to residents of Israeli society.

Nina Baur addresses in her presentation an often neglected but important issue that is mixing process-generated data. She discusses under which conditions it would be favorable to use process-generated data instead of primary data. Four different types of process-generated data are discussed: (a) aggregated statistical data, (b) business directories, (c) newspaper articles, (d) engineering literature. She applies the four different approaches to the evaluation of one special market that is the Yoghurt and Sour Milk Market. The approach she has chosen seems to be especially fruitful for economic or market sociology where a lot of process-oriented data is available and relevant. The strengths and weaknesses of the four different types of process-generated data are very clearly specified. Her empirical results show in a convincing way the necessity to use mixed methods to get a more valid picture of the real situation in this market.

In Table 1 we give a compact overview of the topic of the papers, substantive theory used, method used, mixed methods design chosen, sample and sample size, and the type of statistical quantitative analysis employed.

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Table 1 Overview

	Ouwuegbuzie/Johnson/ Collins	Raijman/Hochman	Latcheva	Salzbom/Brosig/ Schmidt	Gorodzeisky	Baur
Topic	Methodological	National identity, ethnic exclusionism	National identity	Anti-Semitism	Discriminatory attitudes	Change of market share
Substantive theory	–	Group threat theory social identity theory (Tajfel and Zimmer)	Nationalism/patriot- ism	Attitude theory Psychoanalysis	Group threat theory prejudice theory	–
Method used	–	Guided interviews	Cognitive interviews	Method of deconstruction, in-depth interviews	Focus group	–
Mixed methods design	–	Sequential quantita- tive/qualitative analysis	Sequential quantita- tive/qualitative analysis/	Sequential quantita- tive/qualitative analysis	Sequential quantita- tive/qualitative analysis	Simultaneous analysis, aggregated statistical data, business directories, newspaper articles, engineering literature
Sample	–	ISSP 2003, Israel, $N = 922$ (representative) $N = 11$ (guided interviews) (independent sample)	ISSP 1995, 2003, Austria, $N = 1007$, $N = 1006$ (representative) $N = 18$ (cognitive interviews) (independent sample)	GMF-Survey, Germany, 2005, $N = 2000$ representative; subsample: $N = 19$, in depth interviews (connected sample)	$N = 29$, Israel	German process-generated data
Statistical analysis	–	Structural equation model	Exploratory and confirmatory factor analysis	–	–	–

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