Fashion founded on a flaw
The ecological mono-deterministic fallacy of Hofstede, GLOBE, and followers

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Abstract

Purpose – To comment on Brewer and Venaik's review of the misapplication of the national culture dimensions of Hofstede and GLOBE at the individual and other sub-national levels. This paper supports and extends their critique.

Design/methodology/approach – The implausibility of deterministic claims about the multi-level power of national culture is described and discussed by drawing on a wide range of disciplines (including anthropology, geography, sociology, and historiography).

Findings – Descriptions of the characteristics and origins of sub-national level behaviour based on a priori depictions of national culture values are invalid and misleading.

Practical implications – There are important implications for practitioners. The paper highlights the unsoundness of descriptions of the sub-national (individuals, consumer segments, organizations, and so forth) which are derived from national-level depictions of culture and the dangers of ignoring the independent causal influence of non-national culture and non-cultural factors.

Originality/value – The ecological fallacy in the national culture literature is located within a wider and long-standing critique of that fallacy. The paper is the first to show that the fallacy in the national culture literature is often an extreme causal version. It not merely supposes cross-level equivalence, as in the standard version, but more aggressively, it attributes deterministic power to national culture thus excluding other independent influences and agency.

Keywords Causality, Cross-level analysis, Ecological fallacy, GLOBE, Hofstede, National cultures

Paper type Conceptual paper

Introduction

The idea of "culture", more easily evoked than defined, has for a variety of complex reasons gained immense popularity across a range of academic disciplines – from management studies to literary studies (Corse, 1995). Popularity is not confined to the academy. The concept, often ill-defined, is widely employed by management consultants, consumer researchers, international agencies, military intelligence, and a host of other groups and institutions (Moore and Sanders, 2006). Brewer and Venaik's (2012) commentary focuses on one notion of culture: "national culture" as defined and measured by Geert Hofstede and the Global Leadership and Organizational Behavior Effectiveness (GLOBE) project .

The ontological status of "national culture"; its depiction as bi-polar value "dimensions"; the validity of measurements of those dimensions; and the representativeness of samples, have been the object of considerable debate (see e.g. Beugelsdijk and Maseland, 2011; Bock, 1999, 2000; Breidenbach and Nyíri, 2009; Duncan, 1980; Fang, 2005; Freeman, 1983; Kitayama, 2002; Kuper, 1999; McSweeney, 2002a, b, 2009; Magala, 2005, 2009; Smelser, 1992; Tung, 2008). Brewer and Vanaik (2012) commentary addresses a different issue – what they describe as a widespread "misuse" of national culture "dimensions" in national culture research, teaching, and training. That misuse is

a reliance on the ecological fallacy (Selvin, 1958): the fallacious inference that the characteristics (concepts and/or metrics) of an aggregate (historically called "ecological") level also describe those at a lower hierarchical level or levels. The fallacy is also sometimes called the "disaggregation error" (Van de Vijver and Poortinga, 2002); the "fallacy of unwarranted subsumption" (Knorr-Cetina, 1988); or "the fallacy of division" (Aristotle, 350BC in Axinn, 1958). In short, each part is assumed to have the same characteristic or characteristics of the whole[1] and thus that extrapolation from a higher level to lower ones accurately describes the lower. An illustrative example is: the false derivation that any Japanese is collectivist because Japan, it is supposed, is culturally a collectivist country (cf. Ryang, 2004).

Across the social sciences, deductive depictions of lower levels have been speculatively based on a host of higher ecological representations, not just the national. For example, characteristics of lower levels have been inferred from regions (the west; "Anglo-Saxon" countries; Asia; and so forth); religions, time periods, and "civilizations" (Huntington, 1996; cf. Said, 2001). The level lower whose features are deduced from a higher national level may be an individual, a group of individuals, an organization, a sector, a segment, a class or other social categorization, a generation, a locality, a neighbourhood, an occupational or other work classification. An illustration of a cross-level generalization, from the national to a lower level but above individuals, is: the USA is a "masculine" country therefore industrial relations in that country is characterized by aggression (see Hofstede, 1991, 2001; Hofstede and Hofstede, 2005; Hofstede *et al.*, 2010, for this claim). As that deduction relies on the fallacy it is logically incorrect. It is also empirically untrue (McSweeney *et al.*, 2010)[2].

Prior literature
The ecological fallacy has been addressed quite extensively in studies of epidemiology and electoral behaviour. It has not been widely considered in the management and business literature. And it appears to have largely been ignored in popular research methods textbooks in that arena (see Saunders *et al.*, 2012, for instance). There have been a small number of papers on the topic in marketing (e.g. Armstrong, 1996; Clancy *et al.*, 2007; Tonks and Farr, 2001).

Gerhart and Fang (2005) demonstrated that Hofstede's depictions of national culture do not apply at the individual level. Recalculating Hofstede's data, they show that only a tiny fraction (approximately 2 to 4 per cent) of differences in individuals' "values" is explained by national differences. Hofstede himself acknowledges the low explanatory power at the level of individuals noting that "of the total variance […] only 4.2 per cent is accounted for" by nationality (1980, p. 71; 2001, p. 50). Oysernam *et al.* (2002) analysis of all cross-national empirical research studies published in English on individualism and/or collectivism (the "dimension" of national culture which has received the most empirical attention) found that country explains only 1.2 per cent of the variance in individual-level individualism scores, that is 98.8 per cent of variance in individualism is unexplained by country (see also Schwartz, 1994). Leung *et al.* (2005, p. 368) observe that "research examining relationships between culture and individual outcomes has not captured enough variance to make specific recommendations that managers need with confidence" and Gefland *et al.* (2007, p. 496) point out that "level of analysis confusion also continues to abound […] research continues to blindly apply culture-level theory to the individual level and vice versa". There have also been some illustrations and discussions of Hofstede's inconsistent criticisms of the ecological fallacy: he strongly condemns the drawing of spurious cross-level inference and yet he

extensively ignores that warning (see McSweeney, 2002b, for example). Brewer and Vanaik (2012) have widened both types of analysis to also include the GLOBE research. They flesh out what Earley describes as Hofstede's and GLOBE's "entangle[ment]" of levels (2006, p. 923)[3].

This paper reflects on Brewer and Vanaik's commentary. It explores the employment of the fallacy arguing that descriptions of the characteristics and origins of sub-national level behaviour based on a priori depictions of national culture values are invalid and implausible. Drawing from several disciplines it adds to the critique of flawed but fashionable assumption of cross-level conceptual, metric, and empirical equivalence of national culture.

Cross-level differences

Although the term "ecological fallacy" itself was coined later by Selvin (1958) in his critique of Durkheim's research on suicide, awareness of the methodological crime of assuming that results derived from aggregate data are the same as, and therefore can be substituted for, those which would be obtained from individual-level data, had been popularized earlier by Robinson (1950) who in a seminal paper[4] demonstrated a striking discrepancy between ecological and individual correlation . For example, he showed that, the correlation between illiteracy and nativity (foreign-born vs domestically born) at the individual level was positive ($r = 0.12$) while at the state level it was negative ($r = -0.53$). In short, he showed that correlations computed with aggregate data bear no consistent relationship to correlations based upon individuals (Subramanian *et al.*, 2009). Correlation computed at the individual level can differ substantially not only in magnitude but also in direction (i.e. whether positive or negative) from those calculated using the corresponding statistics based on geographic areas or groups.

Robinson (1950) has become the standard ecological fallacy reference in disciplines ranging from the social sciences to epidemiology to biomedical sciences (Subramanian *et al.*, 2009). The ecological data used by Robinson to demonstrate that ecological correlations cannot be validly used as substitutes for individual correlations was sub-national (individual US states or the Census Bureau's nine geographic regions – depending on which correlations were calculated). The spatial level employed by national culturalists is at an even higher level of aggregation.

Empirical demonstration of cross-level differences date back even earlier than Robinson (1950) – see Thorndike (1939), for instance[5]. And there have been a host of studies with similar results since then (see Jargowsky, 2005). Within the history of philosophy it has long been recognized that it is fallacious to suppose that what is true of the whole is necessarily true of a part (Axinn, 1958). Clearly, aggregation/disaggregation leads to misrepresentation whenever populations are not wholly homogeneous. That point is illustrated by the joke about the statistician who drowned in the river whose average depth was 5 centimeters. By implicitly assuming the homogeneity of a population (as many national culturists do) the fallacy is apparently avoided because it seems to be irrelevant. But both the assumption and the conclusion drawn are incorrect. There is extensive evidence of intra-national diversity (Craig and Douglas, 2006; McSweeney, 2009; Smith *et al.*, 2008; Tung and Verbeke, 2010, for instance) and in any event, the error may also occur even when a property at one level is attributed to a homogeneous group at a lower level. Schwartz (1994), citing, Zito (1975), gives the illustrative example of the discrepancy between a hung jury at two levels. As a group, a hung jury is an indecisive jury, unable to decide the guilt or

innocence of the accused. However, attributing that characteristic to the individual members of the jury would be incorrect as the jury is hung because it is composed of very decisive members who disagree. The pieces of a jigsaw are all irregular shapes but the whole (the completed jigsaw) is usually a rectangle. In short, the fallacy invalidly relies on a false assumption: that if a population (or other ecology) has, or is believed to have, or is calculated to have, a certain characteristic each of the members of that population, or its sub-populations, also have that characteristic.

Employment of the fallacy usually leads to false results. As Robinson (1950) observes, whilst it is theoretically possible for ecological and individual correlations to be equal, the conditions under which it can happen are far removed from those ordinarily encountered in data (p. 341). There is no way of predicting in advance the degree of severity of divergence. Almost any theory will generate some correct results but analysis which relies on the fallacy cannot demonstrate the validity even of correct results. Relationships identified at one level may be true of a lower level but alternatively they may be stronger or weaker at the lower level; they may not exist they may be different; or they may even be in the reverse direction (Klein and Kozlowski, 2000; Ostroff, 1993, for instance).

The error is not confined to the academic literature. It is "extensive", as Brewer and Venaik (2012) observe and support with examples (p. 676), in practitioner literature, in training programmes, and in everyday stereotyping. An example from practice is given by Breidenbach and Nyíri (2009, p. 262), who report that the Chairman of Daimler-Chrysler decided not to appoint a Japanese person as a manager of plant in India because he was convinced that "Shinto culture" and "Hindu culture" "do not go together". A Buddhist Japanese manager, with a US MBA, would, it was assumed, be totally and irrevocably "programmed" by a uniform Shinto culture and all Indians programmed with a common Hindu one. A national notion of culture was supposed to have programmed each individual within the population. A mythical singularity[6] – Hindu culture – was assumed to be carried by all workers in the Indian factory, who incidentally were mainly Muslims[7]. W.W.M. Eislen, the intellectual architect of apartheid in South Africa stated that it was not race but culture which was the "true basis of difference" (in Kuper, 1999, p. xiii). "I have seen Frenchmen, Italians, Russians", wrote the French counter-revolutionary de Maistre, "but as for man, I declare that I have never in my life met him" (in Adler, 1999). Stereotyping national populations on the basis of an essentialized culture (distinct, shared, enduring, causal): every French person is culturally this; Germans are that; Chinese are something else, and so forth is politically correct racism (Michaels, 1995). A "value" code replaces the "genetic" code as a partitioning criterion and explanation of difference.

Brewer and Venaik provide a range of examples of the fallacy in both the national culture research and teaching literature. As the fallacious inference from national-level depictions of "culture" to individuals is widespread they could only cite a tiny fraction of these misuses. But as they state: "A search of journal articles and textbooks at all levels of quality will readily reveal many others" (2012, p. 677). There are multiple examples in the marketing literature.

Drawing on Bond (2002), Brewer and Venaik also argue that the cross-level conflation error applies not only to culture dimension scores but also to the cultural concepts or dimension labels in that the "same labels" are inappropriately and inaccurately used for "constructs at different levels of analysis, individual and national, and thus confound the two" (2012, p. 678). As Firebaugh states "The demystification of cross-level bias begins with the recognition that an aggregate variable often measures a different construct at

the individual level" (1978, p. 560) (see also Bond, 2002; Brewer and Venaik, 2012; Schwartz, 1994). Van de Vijver and Poortinga distinguish between a "structure error" – which refers to the use of a concept at a level to which it does not apply – and a "level error" – which refers to the incorrect attribution of a score value from one aggregation level to another (2002, p. 142).

Blaming the followers

Both Hofstede and GLOBE explicitly warn against the ecological fallacy (Hofstede, 2001; House *et al.*, 2004, for instance). As Brewer and Venaik observe, Minkov and Hofstede for example, state that "his [i.e. Hofstede's] dimensions are *meaningless* as descriptors of individuals" (2011, p. 12, emphasis added). House *et al.* (2004, p. 99) say that it is inappropriate to assume that "cultural-level characterizations and relationships apply to individuals within those cultures". Brewer and Venaik acknowledge these admonitions. However, they demonstrate, with examples, that both Hofstede and GLOBE, and not just their followers, also apply their national-level dimensions to the level of individuals and other sub-national levels. The "confounding of the levels of analysis permeates through the Hofstede and GLOBE books and publications on national culture dimensions. Both Hofstede and GLOBE commit the error themselves, both in the definitions of their dimensions and the discussion of their findings" (2012, p. 678). House and GLOBE are guilty of the error they condemn. In sum, they do not "walk the talk". Does that matter?

Brewer and Venaik argue that part of the blame for the widespread ecological fallacy in the national culture literature is the "contradictory behaviour of the original authors" which frames the work of their followers: "naturally, if the original authors themselves commit mistakes, the researchers that follow their work may find it difficult to understand the critical difference between national level and individual level characteristics" (2012, p. 679). Without the fallacy – which sustains the illusion that Hofstede's and/or GLOBE's national-level aggregations also describe individuals and groups of individuals – it is very unlikely that their work would have attracted the level of academic and practitioner interest it has[8].

Causation or just correlation?

The "misuse of national culture dimensions" (Brewer and Venaik, 2012) in both Hofstede's and GLOBE's research, and by many of their followers, is not merely the unjustified inference that characteristics of an aggregate (culture as values) strongly correlate with or describe conditions at the level of individuals or other sub-national level, more profoundly, national culture is widely seen as creating lower level culture and behaviour[9]. The higher is also represented as creating the latter. National-level values, it is said, shape behaviour at the level of the individual (or other sub-national level). The latter are, in Hofstede's phrase "culture's consequences" (2001). The fallacy employed here is thus stronger than cross-level conceptual and/or empirical equivalence – causality from national to sub-national is inferred. The macro, it is supposed, creates the micro. The basic idea is, as Clifford Geertz critically observes, that culture is "a set of control mechanisms – plans, recipes, rules, instructions (what computer engineers call "programs") – for governing behavior" (1973, p. 44)[10]. In short, cultural determinism – causal sufficiency – is supposed. And as only one[11] independent ecological variable – national culture – is acknowledged, the "misuse" in the national culture literature can more fully be called the ecological mono-deterministic fallacy.

Untrue and implausible

Generalizing about lower levels within a country on the basis of ecological data relies on the fallacy and is therefore illogical. But it can also be demonstrated that downward determination of behaviour by national culture is untrue and implausible. That argument is explored below.

Untrue. the evidence against the overdetermining notion of national culture is of two types. First, its absence. There is zero empirical evidence in either Hofstede's or GLOBE's questionnaire-based calculations that national culture (as values), or statistical representations of those cultures, influences individuals' behaviour (Gerhart and Fang, 2005). GLOBE's descriptions of "practices" are bizarrely not practices in the sense of action or artifacts but merely another depiction of values (Earley, 2006). The possibility of identifying a national culture on the basis of responses to questionnaires is highly contested (see McSweeney, 2002a, for example). But that debate aside, analysis of those responses no matter how statistically sophisticated, not only does not, but cannot, demonstrate a causal link between a national culture (or its representation) and an individual's behaviour because the data analysed does not include observations of such behaviour. An a priori belief in that link must be imposed. It cannot be derived from the data.

Second, there is a vast body of empirical data depicting considerable behavioural variation within countries (see e.g. Camelo *et al.*, 2004; Crouch, 2005; Goold and Campbell, 1987; Kondo, 1990; Law and Mol, 1994; Lenartowicz *et al.*, 2003; O'Sullivan, 2000; Streek and Thelen, 2005; Thompson and Phua, 2005; Tsurumi, 1988; Weiss and Delbecq, 1987; Yanagisako, 2002). Homicide rates, for instance, vary not only between countries (and over time), but they also differ immensely across locations, socio-economic, gender, and ethnic groups (Gaines and Kappeler, 2003; McSweeney *et al.*, 2010; Nisbett and Cohen, 1996). Goold and Campbell (1987) describe three different "styles" of planning and control by the UK-based, large, diversified companies, and so on. As Jacoby notes, the USA has long been noteworthy in its high degree of employment practice variation (2005). Katz and Darbishire's multicountry study found increasing variation within all of those countries (Katz, 2005). Studies even of supposedly isolated and "primitive" groups by anthropologists have identified considerable internal heterogeneity: different myths, dialects, institutions, rituals, and religions (Bock, 2000, 1999; Kuper, 1999). In short, as Peterson *et al.* (2012) state, there is an increasingly documented variability in cultural, institutional, and economic characteristics within nations.

That is not to say that there are no uniformities – try driving on the left-hand side of the road in Germany or publically drinking alcohol in Saudi Arabia, for example. But that should not blind us to diversities within countries. Nor are the uniformities evidence of the causal influence of national cultural values. "Social action has many ingredients. Laws, institutions, monarchs, the invisible hand, rituals, coercion, social contracts are amongst the explanations for uniform social practices. It is empirically incontestable that under certain conditions it is possible to detect common social action without reference to a unified and commonly accepted cultural system" (McSweeney, 2009, p. 938).

Given the extent of the empirical evidence of within population diversity, the commentary below instead focuses on the implausibly (Knorr-Cetina, 1988) of behaviour being determined by a national culture.

Causal complexity. Social phenomena are complex not only because they are almost always the outcome of multiple influences but also because those influences can

combine in a variety of ways and at different times. The combinatorial, often complexly combinatorial, nature of social causation makes identification of causation (or prediction) highly challenging and usually far beyond the capability of unilevel analysis even when the latter is well executed. Attributing "lower" level behaviour to exclusively national culture ignores the multiplicity of potential influences – other cultures active within a country and non-cultural factors (McSweeney, 2009). As anthropologist Adam Kuper points out: "appeals to culture can offer only a partial explanation of why people think and behave as they do, and of what causes them to alter their ways. Political and economic forces, social institutions, and biological processes cannot be wished away" (1999, p. xi). Anne Tsui calls for "[c]ontext sensitive indigenous theorizing" which should "clarify and isolate the influence of multiple and qualitatively different contexts embedded in each other *within* a nation" (2007, p. 1358) (emphasis added). There may be several micro-level independent variables and several (not just one) ecological variables. These may be clearly separated, nested, overlapping, or intermingled. They may be influential at different times, some continuously and others intermittently.

Conflating culture and values. Even if causal complexity (above) is ignored, the attribution of determinate power to culture as values is problematic for the following reasons.

First, at least five types of cultural theories: psychological; mentalist (or cognitive); textualist; intersubjectivist; or based on practise can be distinguished. On a very basic level these schools offer opposing locations and conceptions of culture. The national culture as values school excludes all but one type of cultural influence. The psychological (indeed just a particular aspect of it) determines thought, feelings, and actions. The ontological status of the "inner" is distinguished from the "outer" (institutions, practices, and so forth) but at the same time is their cause. In the neo-institutional literature, where national and regional distinctiveness and path-dependencies are major focuses of analysis, the possible influence of culture as psychological values is either ignored or explicitly rejected. Wolfang Streek and Kathryn Thelen, for instance, urge the avoidance of an "'over socialized' conception of human actors as is often implied in normative, or cultural [values], concepts of institution" (2005, p. 15). Although John Meyer *et al.* frequently use the term "culture": they refer to "cultural accounts"; "cultural systems"; and "cultural forms" (1994, pp. 10, 11; 15, 24) they state that a notion of "abstract values internalized by individuals through socialization" is "primitive" and "simply leaves out too much" (Meyer *et al.*, 1994, pp. 11-12; 17). Second, the values notion of national culture focuses on just a subset of the psychological, that is values. The possible roles of a host of other psychological constructs (desires, goals, motives, needs, traits, aversions, tastes, interests, likes, attractions, dispositions, valences, attitudes, preferences, cathexes, sentiments, and so forth) are ignored. Third, there are a great many definitions of values, not just the singularity implied in the national culture literature. As a result an implicit or explicit definition is contestable and "definitional inconsistency has been epidemic in values theory and research" (Rohan, 2000, p. 255). Fourth, the assumption that values are unaffected by context, that they are invariant transitational preferences, is at odds with an immense amount of contrary evidence (Ewing, 1990; Shweder, 1999). Fifth, a strong and direct influence of values on behaviour is treated as a given. Values are taken as cultural imperatives that lead to distinct action. But this is at best a highly contested view (Joas, 2000; Rohan, 2000; Swidler, 1986). "Current theories give little guidance for understanding how values shape behavior"

(Hitlin and Piliavin, 2004, p. 360). That is not to say that values may not have an influence on behaviour, but what we know about the highly mediated relationship is limited and values are but one type of a host of possible determinants (Williams, 1979). Sixth, the focus on causal coherent higher level values has been legitimated in a wide range of national culture literature by a claim that it is the standard the view of culture in anthropology. But the idea that whole populations could be characterized in terms of a generalized disposition – such as uncertainty avoidance – "went out of fashion in anthropology in the late 1950s or early 1960s" (Shweder, 2003, p. 42). Furthermore, the very notion of "culture", whilst once the organizing trope in anthropology, has largely been abandoned in that discipline (Abu-Lughod, 1991; Bock, 1999; Breidenbach and Nyíri, 2009; McSweeney, 2009; Moore, 2012; Patterson, 2000; Shweder, 1999). Today, on the rare occasions when it is used in that discipline, it usually bears the "stigmata" of quotation marks "indexing the writer's ambivalence, self-consciousness, or censure" (Brightman, 1995, p. 510).

Cultural coherence. Even if the exclusive influence of values is supposed, and the variety of definitions of values is ignored, that is not sufficient to justify the claim of national behavioural uniformity. What the causal national culture schools also implicitly suppose is that the cultural values of a nation (aka country) are a coherent whole, that is, they contain no contradictory elements. A national culture, it is supposed, is logically consistent, a "seamless web" (Swidler, 1997). That assumption is necessary to exclude the possibility of individuals constructing incompatible, ambivalent, or contradictory propositions from that culture and thus (given the supposition of cultural determinism) of acting differently. But as fieldworkers, including anthropologists and market researchers, often discover, people frequently provide inconsistent accounts of themselves and others and these representations are context dependent and may rapidly shift (Ewing, 1990).

As Neil Smelser (1992, p. 25) observes: "any culture will present a number of contradictory adages or sayings (look before you leap and he who hesitates is lost) as part of its repertoire". In addition to these and many other "glaring inconsistencies" (Meyer *et al.*, 1994, p. 12) what might appear to be unambiguous is open to a variety of interpretations. For instance, the fifth commandment: "Thou shalt not kill" seems to some to unequivocally prohibit murder, abortion, war, and capital punishment, for others the definition excludes only one or some of these actions. Cognitive research "confirms views of culture as fragmented" (DiMaggio, 1997, p. 263). Clifford Geertz, in harmony with what has become the accepted view in anthropology, dismissed the coherence view which he ridiculed as a: "seamless superorganic unit within whose collective embrace the individual simply disappears into a cloud of mystic harmony" (1965, p. 145). In short, culture is "a thing of shreds and patches" (Lowie, 1920).

Furthermore, the individual person is not wholly coherent. Contrary to the "illusion of wholeness" of self (Ewing, 1990) there is an extensive psychoanalytic, and other, literature which challenges the idea of the singularity and integrity of the individual self. Individuals may simultaneously hold several conflicting views and have conflicting values (Simmel, 1971; Smelser, 1992). Individuals' actions are influenced by diverse micro-contexts. Different, shifting and porous preferences, values, orientations, understandings of constraints may be emphasized depending on the situation. For instance, knowledge that a person hates his father does not warrant inference to feelings about his or her boss. The most talkative child at the breakfast table is not necessarily the most talkative in the classroom. Someone who abstains from drinking alcohol during the working week may indulge on weekends. By day Rudolf Höss, the

Commander of Auschwitz concentration camp, ordered the deaths of thousands of people – overseeing the extermination of at least 1.2 million people and the enslavement of at least that number. But he was obsessively kind to animals and his five children (Höss *et al.*, 1996). Attitudes and behaviours are not necessarily generalized across situations. They are domain specific.

What has causal force?. In the national culture literature employing the ecological fallacy, the ontological status of culture is opaque, slippery, and elusive. Poorly specified conceptions slide unclearly and inconsistently between each other (Knight, 1982; Taras *et al.*, 2010). Is national culture a statistical average? Something real? Or what?

The attribution of constitutive power to a statistical average, distribution, or whatever relies on two errors. The first is the metaphysical fallacy of "misplaced concreteness" (Whitehead, 1925) erroneously viewing summary statistics as hard realities, in a phrase mistaking models for reality. The second related error is "statistical fatalism" (Hacking, 1990) attributing deterministic power to a statistical calculation. The idea that statistical distributions are "laws" was briefly very fashionable in 1870s. It was mocked by Charles Dickens in *Hard Times* (1854) (Hacking, 1983, 1990). Some averages may have predictive power (Friedman, 1953) – but that is a different type of claim. Averages are not causes. We do not meet, compete, negotiate, or form friendships with averages (Bidney, 1944; Duncan, 1980). However, despite its widescale demise, the idea that statistical distributions are "laws" is still with us.

Alternatively measurements, statistical averages, or whatever, are seen as representative of, corresponding with, national culture as a real social force. National culture is imagined as fixed, distinct, and autonomous thus it is positivistically supposed that it can be "empirically found" (Hofstede and Hofstede, 2005, p. 24), its dimensions measured, and as a result, for instance, the cultural "distance" between countries can be calculated. The notion of national culture as real is similar to what Hegel, for instance, called *Geist* (an essential and immutable objective spirit). As White (1968) puts it: "If the behavior of a people is determined by its culture, what determines the culture? The answer is that it determines itself. Culture may be regarded as a process *sui generis*" (in Duncan, 1980, p.185). There are similarities between this doctrinal holism, the depiction of culture as a superorganic fact standing above individuals, responding to laws of its own, and the historic biological notion of "vitalism" which treated life as the product of a mysterious *vis vitalis* or life force.

But nations are "mental constructs sustained in being by imaginative labour and discursive habit" (Cubitt, 1998, p. 3). Through what Annette Ching calls the "social construction of primordiality" (in Yelvington, 1991, p. 165) the notion of the enduring uniqueness of countries – is perpetuated in multiple explicit and symbolic ways including through: passports, stamps, flags, anthems, civil services, police forces, taxes, maps, weather forecasts, elections, state funerals, military funerals, national heroes, nationally regulated examinations, aggregate statistics, in routines of international comparisons, in international sporting events, in notions such as national competitiveness, and indeed by claims of the enduring existence of unique national values (Cerulo, 1995; McSweeney, 2009; Yoshino, 1992). These features of "banal nationalism" (Billig, 1955) contribute to the construction and maintenance of belief in shared and enduring national distinctiveness. Identity is reproduced "in myriad imperceptible ways, grounded in everydayness and mundane experience" (Eley and Suny, 1996, p. 32). It is national identification, not national culture, which is real in the sense that an often passionate patriotic commitment to an "imagined community" (Anderson, 2006)[12] is extremely influential – from the shaping of some consumer decisions to a willingness

to defensively or offensively sacrifice one's life (Hobsbawm and Ranger, 1992). Belief in unique and enduring national values is not a necessary condition for national identification but it helps. It may also involve suppression of the rival cultural imaginations within the same country.

The objection here to the notion of a distinct and enduring causal national culture is an objection to the attribution of ontological status and autonomous and regulatory power to a supra-individual abstraction (Bourdieu, 1977; Radcliffe-Brown, 1940). It is individuals who act. The notion of culture as a macro or emergent social force might, however, seem to be supported by the apparent evidence of collective or aggregate effects, for example, by the apparent effects of "financial markets" on interest rates on government borrowing. But "markets" are composed of the opinions, actions, or whatever, of individuals – they are not real in the sense of having autonomous social force. The belief in the "market" and belief in the "direction" of markets can affect action. Much of the neo-liberal project has been legitimated as being the mere instrument of unstoppable market power. But the, or a, market does not have power in itself – "participants act only for their advantage, however, significant their aggregate effects on pricing may be, and there is no further centre of agency beyond the individual level" (List and Pettit, 2011, p. 12). This view does not necessarily suppose uniform individuals as do culturally thin theories such as rational choice theory in which actors are essentially interchangeable and geographical space does not matter.

The idea that actors (individuals, organizations, nation states) are natural entities not embedded in culture(s) is, as Meyer and Jepperson, argue, a "core conceit" (2000, p. 100). Of course, the notion of markets, or particular characterizations of a market, may in some circumstances provide adequate explanation(s); it may be the only explanation practically available, or the constituent parts may be too volatile or heterogeneous to theorize (Jepperson and Meyer, 2011). But whatever the explanatory power of the notion of a market, markets *per se* do not have ontological causal power.

Similarly, culture as a macro or an aggregate is not causal. As Clifford Geertz states, "culture is not a power, something to which social events, behaviors, institutions, or processes can be causally attributed" (1973, p. 14). As Don Mitchell puts it bluntly, "there's no such (ontological) thing as culture" (1995, p. 103). A focus on general thematized templates of cultures, a tight network of a few "dimensions" produced by Hofstede, GLOBE, or whoever else, results in blindness to lower level variety. Culture is at best an "abstraction from the innumerable occurrences where people act in complex social and physical contexts […] In view of the complex and poorly understood interplay of these many aspects, it must surely be unwise to concentrate our attention on that one abstraction, culture, and elevate it to a position as the defining object of our enquiry" (Barth, 2001, p. 435). The conceptualization of the relations between individual agency (and other micro-levels) and the wider society (culture, structure, institutions, or, however, defined) is complex and contested and thus is the object of an immense multi-disciplinary literature (Jepperson and Meyer, 2011). National culturalists' reduction of the relationship to mere downward cultural causation reductively evades engagement with the challenges in that literature.

If it is an "ontological truism" (Watkins, 1952) that all causal social processes work through the behaviours of individual person how can such behaviour be attributed to national culture – whether defined as a statistical calculation or as something real (perhaps represented by such calculations)? Those within the national culture literature who rely on the ecological fallacy resolve this problem by an

additional move: in effect they deny agency. Each national citizen is said to share a common programmed culture with every other individual from that country.

Of course, each individual is not an "island". Individual choice requires the employment of a somehow socially shared framework or rather frameworks (Hodgson, 2007). Ontological individualism need not compel us to methodological individualism (Førland, 2008). But "share" is a very imprecise notion. To what extent is it shared? Even if the exclusive causal force is assumed to be culture, nationally unique and common behaviour can only be deduced if the degree of sharedness is assumed to be total. The fallacy followers make that assumption. National behaviour patterns are seen as having been internalized by individuals. Thus, Hofstede *et al.* refer to culture as the "mental programming" (2010, p. 4) – culture as the central processing mechanism common to each national citizens' mind. An individual's culture is, in effect, seen as national culture writ small. This is what Wrong (1961) rejects as an "oversocialized" notion of individuals. The potential for individual agency is effectively denied by reducing a person to what Garfinkel critically calls a passive "cultural dope" (1967, p. 68) – dependent and impotent. The macro is supposed to subsume the micro and thus the debates about the relationships between micro and macro in sociology (see e.g. Alexander, 1987; Münch and Smelser, 1987) and in philosophy (see for instance, List and Pettit, 2011), are ignored. Invisible strings of national culture are supposed to make human puppets dance (Opler, 1964).

The variety of intra-national material contexts, constraints, and conflicts, for example, within-country differences in wealth distribution and access to educational resources (Dorling, 2011) are also disregarded such that, for instance, it is supposed that there is no cultural difference between members of national elites "whose sheer economic advantage sets them apart from other classes [and] the opposite extreme […] marked by the lack of any significant amount of economic, cultural or social capital" (Savage cited in *The Guardian*, 2013) provided they share the same nationality. Living details are drowned in unreal national stereotypes.

Non-essentialist nations. The fallacious downward conflation of national culture and lower levels also relies on a particular notion of space. Populations partitioned on the basis of national borders are each supposed to have a distinct, shared, and enduring culture. "Culture", Barron, states, "lies at the core of behaviour, differs between nations, but is stable within them" (2010). "National values", Hofstede and Hofstede (2005, p. 13) state, are: "as hard as a country's geographic position" and "while change sweeps the surface, the deeper layers remain stable, and the [national] culture rises from its ashes like the phoenix" (Hofstede and Hofstede, 2005, p. 36) – *plus ça change, plus c'est la meme chose*. The notion of enduring and distinct national culture is a central part of nationalistic myths about the primordiality of nations (Cubitt, 1998). Hofstede sees national culture as analogous to "genes" (Hofstede and Hofstede, 2005, p. 36). That echoes Zelinsky's earlier claim that "culture is a prime genetic factor, along with the physical and biological in shaping the character of places" (1973, p. 91).

Contrary to a "core nationalist doctrine" (Smith, 1983, p. 21) that humanity is naturally divided into nations, no country is truly primordial – most are of quite recent origin founded in the nineteenth or twentieth centuries. State boundaries may be unstable. Poland, for instance, as a nation-state ceased to exist in the late eighteenth century and was only reconstituted with quite different borders at the Treaty of Versailles in 1919 when the borders of many other European countries were radically altered. After Second World War, the borders of Poland and many other countries were again changed. Land and people formerly in one state may be re-designated as part of

another state. For example, Alsace-Lorraine was returned to France most recently in 1945 (having yo-yoed back and forth over the previous century). Whole states or parts of states may be annexed (or re-claimed) as the north of Cyprus was by Turkey. New states may be formed by seceding from other states (e.g. Bangladesh). States may be formed by the voluntary or involuntary combination of multiple states (for instance, Germany in the late nineteenth century and again in the late twentieth century). States may fragment into multiple states, violently (e.g. the break-up of Pakistan into [West] Pakistan and Bangladesh) or peacefully (e.g. the separation of Czechoslovakia into the Czech Republic and Slovakia). Writing about the determination of national boundaries at the Versailles Peace Conference in 1919, Arthur Balfour, the UK's Foreign Secretary angrily observed the spectacle of "all powerful, all ignorant men sitting there and partitioning continents" and UK Diplomat Harold Nicolson despairingly said: "How fallible one feels here! A map – a pencil – tracing paper: Yet my courage fails at the thought of the people whom errant lines enclose or exclude" (in Will, 2004, p.131).

Not only is a unique national culture supposed to map neatly onto often arbitrary and recently created political boundaries but there is also confusion in the literature as to whether the uniform and causal culture is that of a nation, a nation-state, or a multi-nation state. As Rubenstein and Crocker (1994, p. 122) observe: "Of the roughly 180 states that compose the current world system, 15 at most can be called nations in the sense that a vast majority of people believe that they share a common ancestry and cultural identity. The norm for states is multinationality, with 40 per cent containing people from five or more distinct nations" (Rubenstein and Crocker 1994, p. 122). In almost one-third of states, the largest national group does not even compose a majority of the population. Nations may comprise part of a state or extend beyond the borders of a single state (e.g. the Kurds and the Basques). The territories supposed in the national culture model to be each characterized by a uniform, enduring, causal culture are overwhelmingly not single nations but clusters of nations within a single state and yet each country is treated by causal national culturalists as having just one, not multiple, national cultures.

Notwithstanding, widely cited and influential studies in the 1980s by Anderson, Gellner, Hobsbawn, and others demonstrating that countries are products of history, not timeless primordial entities, an essentialist notion of nations remains a bedrock notion of causal national cultural claims, and indeed more widely of much of the international business literature.

Conclusions
What is to be done? In short, the main policy implication of the arguments in this paper is: do not suppose that descriptions of national cultures are a multilevel "answering machine". That is not to argue that aggregate (ecological) data are always unsuitable for analysis of lower level behaviour – it may practically be the only data available – nor, conversely, is it to claim that estimates based on individual or micro-data are always unambigiously better. When two or more persons make a group, individual-level analysis cannot capture the effects of this dimension, including the interactions between one person and others. It is collections of persons (organization, market segments, and so forth) not an individual person which is usually the focus of most social science, including marketing, analysis. Pairings, families, peer groups, schools, laws, institutions, and other contexts alter social outcomes in ways not explicable by studies which focus solely on individuals

(Susser, 1994). Perils are posed not only by the ecological fallacy but also by the individualistic fallacy (Subramanian *et al.*, 2009).

When there is substantial diversity obtaining a "representative sample" may be problematic. Bottom-up induction can at times be overwhelming and so not surprisingly some researchers and practitioners have sought to bypass these problems by deducing descriptions of lower levels from supposedly holistic coherent models of national cultures. This is done in isolation from actual practices – usually with flawed results. There is an "irrecoverable loss of micro-level information as it is aggregated" (Schuessler, 1999, p. 10581). The objection here is not the generation of hypotheses from ecological comparisons. Some of the recent discoveries of the causes of cancer (e.g. dietary factors) have their origin in the generation of such hypothesis from systematic international comparisons which were then investigated in lower level studies (Pearce, 2000). The objection is to the doctrinaire (and invalid) transfer of aggregate results to lower levels, i.e. to the fallacious assumption that what characterizes, or is believed to characterize, entire national populations is also representative of each sub-national population.

Studies in many disciplines have repeatedly demonstrated the error of relying on the "ecological fallacy". And yet, a remarkable amount and range of literature (academic and practitioner) which employs the notion of national culture blindly builds its "findings" on the unreliable assumption of cross-level equivalence. That literature correctly supposes actors' (be they individuals, organizations, countries, or multinational entities) to be embedded in social context. But it exaggerates the degree of embeddness as absolute, uniform, and never changing. Furthermore, it disregards independent non-cultural and non-national cultural influences. In a complex multivariate world is it not naive to think that even a good theory will allow us to acontextually know "predictable" (Hofstede, 2001, p. xix) outcomes? "Any levels of essentialism, micro *or* macro, will distort and impoverish social science […] From a scientific standpoint, pure "atomism" and pure "holism" are both fictions" (Jepperson and Meyer, 2011, p. 68). An array of, often volatile, conditions, not a single factor, affects important social phenomena (Parsons, 1978). It is unrealistic to suppose that a single cause invariably underlies social action – only simplistic and mechanical theories aspire to do that. Talcott Parsons stated that he was "resolutely opposed to single factor explanations of phenomena in the world of human action" (1978, p. 1358). The notion of "culture" – national, organizational, or whatever, is greatly overused and underspecified for descriptive and prescriptive purposes in many research and practitioner arenas. Try this test. When some event – positive or negative – is attributed to "culture", or when the basis of improvement is said be a "change of culture", replace "culture" with a made-up word, for example, "bagabanga". Is your understanding any the less? What is lumped together as culture – national or other – needs to be unbundled. As Adam Kuper observes: "unless we separate out the various processes that are lumped together under the heading of culture, and then look beyond the field of culture to other processes, we will not get very far in understanding any of it" (1999, p. 247).

The notion of national culture used by those who employ the ecological fallacy is theoretically and empirically problematic. It is reified into something uniform, contradiction-free, and unchanging. But cultures are fusions, remixes, recombinants. They are made and remade through exchange, imitation, intersection, incorporation, reshuffling, through travel, trade, subordination. These flows transgress the boundaries of even the most clearly differentiated groupings (Lewis, 1991). The social is not, contrary to the reductive representation, merely composed of, or dominated by, a static and

undifferentiated pristine culture. Life is made in impurity and intermingling. Marketing is not just reflective, it may also be constitutive (Zwick and Knott, 2009). Multiple and diverse influences and the incoherence of culture makes space for constrained agency – for bounded free will (Derné, 1994; Slater, 1970; Swidler, 1986). As Moore and Sanders state: "We do not directly author all of our actions, but neither do we religiously follow rules" (2006, p. 11).

Treating national culture as causal of behaviour within countries makes claims even beyond that in the standard "ecological fallacy" of supposing conceptual and/or empirical equivalence between hierarchial levels. Where determinism of national culture is supposed, the "misuse" (Brewer and Venaik, 2012) may more fittingly be called the ecological mono-deterministic fallacy. The paper described and challenged a series illogical arguments and invalid suppositions on which that fallacy relies.

Notes

1. The other cross-level extreme – the "atomistic fallacy" (also called the "fallacy of composition" or the "reverse ecological fallacy"), that is, generalizing from individual or small n data – is not discussed here. For a national culture example of this fallacy (see Kets de Vries, 2001). For a discussion of the fallacy (see Lieberson, 1991).

2. De Mooij (2013) cites a number of studies supportive of the cross-level value of Hofstede's masculinity/femininity national culture index. But there are limitations to that argument. It is a positive test strategy. Citing only instances where the candidate property is known to be, or said to be, present is not a valid test. Positive examples can be found for almost any theory. For example, table salt dissolves in warm water every time someone utters a "magic word" before immersing the salt in the water. However, looking only at positive examples fails to reveal a vital falsification. The salt is, of course, equally likely to dissolve without the spell, as the spell has no influence. A positive test strategy will only identify instances of dissolving when a spell is uttered (Lieberson, 1992). This strategy has two additional limitations: counter or negative examples are ignored and there is often an unwillingness to consider and test different explanations – many different relationships at the individual level can generate the same outcome (Schuessler, 1999). As Miller and Tsang state "[a] positive test strategy leads to inflated confidence in a theory's corroborating evidence and generalizability; it also discourages exploration of possible alternative explanations" (2010, p. 143). Furthermore, even what is deemed to be a positive instance is questionable as quite different social actions, including contradictory ones, can be attributed to the same national cultural "dimension". The attributions are highly judgemental and non-falsifiable.

3. In her response to Brewer and Venaik, De Mooij states that there are fundamental differences between the Hofstede and the GLOBE models (2013). In contrast, I agree with Earley that that are but "minor variants on one another's styles" (2006, p. 923). However, that matter is not engaged with here.

4. As of March 2013, it has been cited over 3,600 times since 1950 (Source: Google Scholar).

5. Thorndike (1939) used the term "fallacy" in referring to "imputing the correlations found for groups to the individuals or smaller groups composing them", but did not explicitly add "ecological" to "fallacy".

6. The notion that "Hinduism" it is a single religion/civilization is a colonially constructed myth (Bloch *et al.*, 2010; Inden, 1986). "Hinduism is an accretion of stories, poems and cults. It has a multiplicity of philosophies, gods […] and sects, and has no central authority" (Beattie, 2009, p. 140). There are at least 36,000 different Hindu gods and goddesses (Adiga, 2008).

7. The Muslim population of India (16.4 million) is only marginally smaller than the Muslim population of Pakistan (18.6 million) (CIA, 2013).

8. For an extended discussion of the reasons for the appeal of Hofstede's value dimension indices (see McSweeney, 2009).

9. The supposed causal outcomes of national culture also include cognitive styles and personality traits. These are included here in the single term "behaviour".

10. That view is not exclusive to Hofstede and GLOBE. Trompenaars, for instance, states that: "[L]anguage, food, buildings, houses, monuments, agriculture, shrines, markets, fashions and art are symbols of a deeper [subjective] level culture" (1997, p. 21).

11. Mere acknowledgement of other cultures or non-cultural factors without incorporating them into a theory of action is an empty gesture (McSweeney, 2009).

12. It is "imagined", Anderson states, "because the members of even the smallest nation will never know most of their fellow-members, meet them, or even hear of them, yet in the mind of each lies the image of their communion" (2006, p. 6).

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