



HAL
open science

Ethnicity, socio-economic status, and health research: Insights from and implications of Charles Tilly's theory of Durable Inequality

Vincent Lorant, Raj Bhopal

► **To cite this version:**

Vincent Lorant, Raj Bhopal. Ethnicity, socio-economic status, and health research: Insights from and implications of Charles Tilly's theory of Durable Inequality. *Journal of Epidemiology and Community Health*, 2011, 65 (8), pp.671. 10.1136/jech.2010.116418 . hal-00618790

HAL Id: hal-00618790

<https://hal.science/hal-00618790>

Submitted on 3 Sep 2011

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

**Ethnicity, socio-economic status and health research:
Insights from and implications of Charles Tilly's theory of Durable Inequality**

Submitted for the 'theory and methods' section of JECH by

Vincent Lorant *(1) and Raj Bhopal (2)

(1)Institute for Health and Society, Université Catholique de Louvain, Clos chappelle
aux champs 30.05, 1200 Bruxelles, Belgium vincent.lorant@uclouvain.be. Tel :32-2-
7643263; Fax : 32-27643470

(2) Alexander Bruce and John Usher Professor of Public Health, Centre for
Population Health Sciences, Section of Public Health Sciences, University of
Edinburgh, Medical School, Teviot Place, Edinburgh EH8 9AG, UK

*Corresponding author

MesH Terms: Ethnic Groups; Migration; Public Policy; Health Inequality;

Word count: 3,223.

Abstract

Background. Ethnic inequalities in health status and health care remain substantial in Europe and addressing them is becoming a priority. However, the best way to respond to such a challenge is, as yet, unclear. The research community is grappling with the contribution of socio-economic discrimination to ethnic inequalities. **Methods.** We present a new theoretical analysis, based on the landmark work of Charles Tilly on ‘Durable Inequality’ and we apply it to the public health goal of reducing ethnic health inequalities. **Results.** Tilly claims that, for organisational reasons, ethnic categories and socio-economic categories are tied together. The theory of Durable Inequality claims that the matching of ethnic categories with socio-economic categories helps to enforce exploitation, leading to durable inequalities. We present the theory, and focus on its main components (categories, exploitation, opportunity hoarding, emulation and adaptation) and discuss the implications for health inequalities by ethnic group. In essence, the theory leads to four recommendations for the study of ethnic health inequalities: (1) to investigate organisational processes that create ethnic health inequalities ; (2) to investigate the role of networks and ties on health behaviours, health care use and their psychological factors; (3) to define ethnicity through flexible, multidimensional binary categories, which should vary according to context; (4) to assess cumulative inequality within a domain, across domains and across generations. **Conclusions.** Our paper, to our knowledge, is the first attempt to analyse Tilly’s theory in relation to ethnicity and health and opens up a debate on refining the implications of these ideas prior to empirical testing.

Keywords or Mesh Terms: sociology; ethnic groups; socio-economic factors; health status disparities.

Summary Boxes

What is already known?

- Socio-economic status influences the relationship between ethnicity and health.
- However, the nature of this interaction remains opaque because of a lack of theoretical work.

What this study adds?

- Charles Tilly's theory of Durable Inequality explains why, for organisational reasons, ethnicity and socio-economic status are linked and affect health.
- The paper opens a debate on the potential value of this sociological theory in the social epidemiology of ethnicity and health.

INTRODUCTION

Ethnic inequalities in health and health care are an important and growing topic of European policy, research and practice. Europe accounts for a quarter of international migration, and in 2005 migrants accounted for 7.6% of its population. [1] Migration is **one** driver in the creation of multi-ethnic societies, where migrant and ethnic minority groups face important health risks in communicable and non-communicable diseases. [2] The key focus that calls for action is inequality in health status and health care, and especially the concern that some of this **inequality** arises from discrimination - both in the health sector and in wider society (e.g., employment, housing etc.) It is for this reason that academics, practitioners and policy-makers are increasingly turning their attention to ethnic group inequalities.

Ethnicity and socio-economic status have long been seen as two important strands of inequality. Yet the ways in which these interact and perhaps magnify inequalities have been somewhat resistant to academic understanding. The report of the UK's Acheson Inquiry into Inequalities in Health had a section on ethnicity that suggested that socio-economic status contributed to these inequalities.[3] However, some landmark studies on social inequalities in health have not recognized the role of ethnicity.[4,5] The recent Eurothine project, for example, had little to say on ethnic inequalities in health.[6] Similarly, the WHO Commission on Social Determinants of Health, led by Marmot, has been criticized for paying little attention to ethnic group inequalities.[7] This is odd, as ethnicity has long been recognized as a social status category that is strongly linked to many indicators of deprivation.[8-10] Interpreting data is made more difficult by a lack of theory on the relationship between ethnicity and socio-

economic status. The analysis of ethnic inequalities in health cannot be left to statistical analysis, but requires an understanding of the relationship between ethnicity, socio-economic status and health. Social theory may help to improve our understanding of how ethnicity and socio-economic status interact in producing health inequalities and help to improve the way we analyse these relationships.

In this article, we present Charles Tilly's 'Durable Inequality Theory' (hereafter, DIT) and discuss its implications.[11] Tilly's work may provide an explanation of why ethnicity and socio-economic status interact with one another and lead to structural inequalities. Although Tilly's thesis was not directly concerned with health and health care, we consider that it nevertheless gives insight that merits discussion beyond sociology. We briefly review the topic of ethnic and socio-economic inequalities in health, present DIT in further detail and discuss its implications for health studies and practices. To our knowledge, this is the first attempt to translate DIT into the ethnicity and health domain. Our analysis will be carried out mainly from the perspective of Europe, where migration is one important source of diversity.

ETHNICITY, SOCIO-ECONOMIC STATUS AND HEALTH

One common finding in ethnicity and health studies is the important influence of socio-economic status (hereafter, SES) differences in the relationship between ethnicity and health. Most of the previous reviews concluded that socio-economic status is lower in most ethnic minorities and that this contributes significantly to ethnic inequalities in health. This contribution depends on the national context.[8,12-

14] In Europe, ethnic differences in self-rated health were removed by controlling for SES for most ethnic groups living in the UK [14,15], for Turks/Moroccans living in Belgium [16] and for Roma living in Hungary.[17] They were reduced for Roma living in Slovakia [18] and for most non-European ethnic minority groups living in Sweden.[19,20] However, socio-economic status had virtually no effect on ethnic health inequalities in Spain.[21] The contribution of socio-economic status to ethnic disparities in health varies between groups. Among ethnic groups living in Sweden, the risk of poor health among Polish migrants was unaffected by their lower SES in comparison with Arabic-speakers or Iranians.[19,22]

These kind of observations raise interesting questions: e.g. why is ethnicity associated with lower SES, and why is this association stronger for some ethnic minority groups than for others; why, for a given ethnic group, is the association **context-dependent, being stronger in some countries than in others?** Many researchers have treated SES as a confounder of the ethnicity-health relationship. Such ‘confounding’ has been tackled by controlling ethnic differences in health status by SES. However, this adjustment is made on a component of the causal pathway between ethnicity and the risk of poor health.[23] The nature of the interaction between SES, ethnicity and health in such analyses, therefore, remains opaque.

So far, discrimination has been an important conceptual vehicle for explaining ethnic inequalities in health and the role of socio-economic differences.[8,10,24,25] An important review article showed a positive association between self-reported discrimination and poor health, particularly for mental health and health

behaviour.[26] Research has evidenced significant discrimination regarding both mental and physical health care.[27,28].

If we want to tackle discrimination we need to understand why it is occurring. Psychologists have explained the occurrence of discriminatory beliefs by intrapsychic factors such as racial animus or group closure.[29] Recent European surveys show that racial or ethnic stereotyping is still rife, with around half of Europeans believing that employers should give priority to the non-immigrant population when jobs are scarce.[30] However, the contribution of discriminatory beliefs to discrimination in practice is not clear: experimental studies show that people do not rebuff overt acts of racism in the way they anticipate they would, **implying that beliefs seem not to be the main driver of discrimination** .[31] This is an empirical issue that requires sustained inter-disciplinary qualitative and quantitative research.

Ethnicity may expose some groups to low SES because of discriminatory practices, partly founded on racism or on values prejudicing minority groups. These values are then often explained by historical and cultural factors, **with all the risk of circularity**. In Tilly's view these values just relabel the phenomenon instead of explaining it (Tilly, p.21) and he emphasizes the role that institutions such as families, schools and companies play in producing and maintaining the links between low SES and ethnicity.[25]. It is within this context that DIT might offer valuable insights: **inequality is not so much the result of discrimination as of organizations installing categorical inequality in order to facilitate organisational functioning**.

CHARLES TILLY'S DURABLE INEQUALITY THEORY

Charles Tilly (1929-2008) was the Joseph Battenwieser Professor of Social Science at Columbia University. During his career he worked on several topics ranging from historical sociology to political science. In providing a summary of Charles Tilly's DIT theory, we risk both omission and simplification. We do not aim to summarize Tilly's entire output. Rather, we seek out those elements of his work that are instructive for understanding the links between SES and ethnic inequalities in health. Our account relies on his book, *Durable Inequality* [11] and on more recent discussions by commentators [32,33] and Tilly himself.[34]

DIT had two primary and related scientific ambitions. Firstly, Tilly sought to provide a unified framework to explain all forms of durable inequality.[35] This contrasts with the current tendency of inequality studies to split into many disconnected sub-segments (e.g. gender studies, ethnic studies and socio-economic studies) or disconnected domains (e.g. wages, health, nutrition and information), each with *ad hoc* explanations. Because public health research is keen on investigating inequality across segments and across domains, DIT provides it with a unique theoretical perspective.

Secondly, Tilly argued against an individualistic perspective in which inequalities are explained by decisions linked to individual features such as motivations, attitudes etc. Instead, Tilly claimed that *relational* concepts are required to understand inequalities:

concepts that tie or separate individuals or groups (e.g. hierarchy, organisation or pairs of categories).

The theory is based on the following proposition: “People who create or sustain categorical inequality by means of the four basic mechanisms (exploitation, opportunity hoarding, emulation and adaptation - see below) rarely set out to manufacture inequality as such. Instead, they solve other organizational problems by establishing categorically unequal access to valued outcomes” (p.11). Essentially, inequality emerges as an artefact of particular strategies of organizations aiming to secure and enhance access to resources.[33] The key components of DIT are categories, exploitation, opportunity hoarding, emulation and adaptation.

A **category** is a group of people sharing a boundary that distinguishes them from, and relates them to, a group of people excluded by such a boundary. These categories often have binary and unequal relationships: women/men, black/white, employer/employee, citizen/non-citizen, physician/nurse, Muslim/non-Muslim, etc. Preference of categories (i.e. social class) instead of continua (income), according to DIT, is because categories play an important role in the way organizations work: recruitment, job and task assignation, rewards, promotion, sanctions, on-the-job friendships etc. In addition, according to DIT, categories also allow for group closure (enacted rituals) and account for much of inequality in reward (income, nutrition etc.). DIT claims that organizations installing categorical inequalities are able to facilitate their own operations and deliver a greater return to their dominant members.

The emergence of inequality is explained by **exploitation** and **opportunity hoarding**. **Exploitation** occurs when an elite group enlists a subordinate category to the production of economic value while at the same time excluding it from the full added value of its efforts. **Opportunity hoarding** is a strategy in which, mostly, subordinate groups seek to monopolize a resource. Evidence of opportunity hoarding among ethnic minority groups is rife among labour market studies [36] and in Europe is illustrated by, for instance, the high concentration of Filipino nurses in Austria, Ecuadorian cleaning ladies in Madrid, Congolese priests in Belgium or South Asian optometrists in the UK.

Because inequalities created by exploitation and opportunity hoarding run the risk of being contested and becoming unstable, they will be more accepted and durable when internal categorical inequalities are **matched** to external categorical inequalities. Internal categories are those created by the organization (such as students/professors or line staff/manager) while external categories are those imported by the organizations (such as men/women or white/non-white). The DIT core thesis is that matching interior categories with exterior categories reinforces the inequality inside the organization and makes inequality durable. Two factors explain why matching occurs. First, it facilitates both exploitation and opportunity hoarding. Second, it reduces the cost of maintaining such inequality. Indeed inequality without matching *"requires the expenditures of resources on socialization and commitment while remaining vulnerable to subversion by coalitions based on external categories"* (pg 78). For example, as ethnic groups are external categories, the matching of such categories with internal categories (worker/clerk, manager/employee etc.) will lower the cost of enforcing inequalities and will make them more stable: e.g. the wage gap

between manager and employee will be more easily enforced and less contested if it matches external categories such as white or non-white. Ethnic inequalities and socio-economic inequalities are co-constructed because they facilitate the installation and persistence of inequalities. **According to the matching hypothesis, ethnic health inequalities may be greater in economic niches or in companies with stronger matching of occupational categories and ethnic categories.**

Emulation and adaptation are two further mechanisms that stabilize and perpetuate these inequalities. Emulation is the copying of established organisational models from one setting to another, for example, when women are more likely to work as the secretary of a white male manager in business settings, this may be emulated in the public sector. Adaptation is a routine that facilitates social interaction, such as the tea break, peers lunching together, jokes and stories; these interactions ensure the normalisation of structural inequalities within day-to-day discourse. The social group formed by adaptation acts to exclude other categories of people by, for example, making them feel uncomfortable, by conversations that are not pertinent, or disrespectful, to the excluded, e.g. chatting about drinking alcohol and partying, in the presence of Muslims who are forbidden to consume alcohol by their religion.

IMPLICATIONS OF DIT FOR HEALTH RESEARCH

DIT has important implications for the way we analyse ethnic inequalities in health, particularly on research design, classification of ethnicity, selection of explanatory factors and data analysis (table 1). We focus on the implication of DIT for ethnic health inequalities.

Research design. DIT suggests that research on inequalities should move from the individual perspective to the relational perspective. One implication for ethnic health inequalities would be to increase the use of social network analysis, **which pays attention to ties and how they cluster along categories. Increasingly,** public health and epidemiology are looking at networks and peer-effects, even for non-communicable disease risk factors [37] and health behaviours [38,39]. Networks could become a key component in analysing ethnic inequalities in health behaviours and help-seeking, **which so far have been mainly addressed through individual-level cross-sectional surveys.** Some ethnic minority groups are known to have many strong ties within their community but relatively few and weak ties with other communities; that kind of social network pattern may play an important role in health behaviours such as smoking [40]. Secondly, multidisciplinary, longitudinal perspectives would help to better understand the interdependence of decisions at different life-stages and in different domains. Ethnic inequalities in health are the result of cumulative processes both within a domain (e.g. health care coverage, access, use, quality and outcome of health care) and across domains (**i.e. education, employment and health care**) [24]. Recent reviews of ethnic inequalities in health care, for example, mostly rely on cross-sectional surveys, thereby prioritizing the prevalent individual perspective and overlooking the role of cumulative discrimination over time in leading to adverse outcomes that cannot be captured in cross-sectional data [41]. Finally, **because a central claim of DIT is that inequality is constructed within organizations, ethnic health inequalities should be increasingly investigated from that perspective:** the persisting lack of ethnic diversity within the highest cadres in medicine[42], the role of health services in improving cultural competence [43], and different patterns of health care use according to ethnicity [44-47] are some examples of topics that could

be looked at from the perspective of the role of organizations in ethnic health inequalities. **One way to achieve such a perspective is through comparative case-study or cross-national comparative study.** While these are already topics of interest in public health research, they receive little attention compared to studies of disease patterns and risk factors. DIT encourages us to strike a better balance.

The categorical approach of DIT also has important implications for the **classification of ethnicity**. DIT suggests that ethnicity categories should be defined along boundaries. This leads to two implications. First, the boundary defines the pair of categories according to exclusion from valued resources. This is consistent with post-modernist theory that takes a non-essentialist view on ethnicity and is also keen to define these terms relationally, “us” and “them”.[48] The second implication is that there are many possible boundaries relevant for the domain of ethnicity: Black/White, Citizen/Foreigner, Documented/Undocumented, Migrant/Non-migrant, English-speaking/non-English Speaking, Muslim/Non-Muslim, Born in the UK/Born abroad, etc. Because these boundaries overlap only partially (for example, South Asians do not all have the same religious affiliation), it could explain the heterogeneous health status risks between ethnic minority groups. It is acknowledged that socio-economic position is multidimensional and should not be limited to, say, occupation. Following DIT, the same may apply for ethnicity. The implication for health studies would be that ethnic health inequalities may be explained by the exclusion from resources that the categories define. For example, English language proficiency has been shown to partly explain racial inequalities in mental health services use in the US: 32% of bilingual Latinos who speak English received mental health services, as against 8% for Latinos who do not speak English [49]. According to DIT we need flexible

classifications that reflect how categories influence access to resources. Currently, there is no clarity on directions in this field in Europe: some favour national census type classification of self-reported ethnicity, others country of birth, and some argue that ethnic group classification is fraught with difficulty, if not actually futile. Overall, the public health research field is moving to relatively fixed classifications. DIT makes us re-think this.

Explanatory factors, according to DIT, are to be found at the relational level: **mistaken beliefs about differences between categories play little part in the creation of ethnic health inequality and beliefs change as a consequence of shifting forms of exploitation and opportunity hoarding.** [34] This has important implications. DIT may help us to understand why behavioural and psychological factors are not randomly distributed between ethnic groups. For example, happiness, an important individual psychological resource for health and help-seeking, depends on individual interconnectedness, so that happiness can be seen as collective resource [50]. Second, information about access to and availability of health and health care, is highly dependent on social ties. Recent research shows that successful searches for information involve more professional ties than family ties and that these professional ties play a greater role in distant search than in close search [51]. This would help to shed light on the link between the concentration of some ethnic groups in specific occupational or educational niches, **a mechanism known as opportunity hoarding under DIT, and the lack of circulation of important health and health care information, as evidenced in ethnic inequalities in cancer mortality [46]. As acknowledged by Tilly himself, difference in health behaviours or access to health-enhancing resources**

should be related to difference in early categorizing and organisational exposure such as educational or job segregation. [34]

According to DIT, it is the matching of internal and external categories that makes income/status inequalities durable. Accordingly, one consequence of DIT for **data analysis** is that the practice of controlling for socio-economic status is inadequate for understanding racial/ethnic inequalities in health. If ethnic groups provide effective categories for organisational functioning, this will influence the many socio-economic attributes that matter for rewards and economic performance. Socio-economic status is, therefore, on the causal pathway for ethnicity and health. Controlling for SES leads to misrepresentation of the true effect of ethnicity on health. Studies of ethnicity and health should attempt to understand multiple vulnerability and the extent to which ethnicity combines with other categories affecting health.[10] For example, one qualitative research project has shown that socioeconomic position has different (economic and labour) implications for ethnic minority groups than for ethnic majority groups.[52] Another empirical illustration of this is the evidence that higher educational status has a diminishing effect on self-rated health among African-Americans compared with whites.[53] The interest lies in how ethnicity and SES combine to produce ethnic inequalities in health and how to avoid these. [8-10,24,54]

Table 1. Main implications of Durable Inequality Theory in the ethnicity and health domain

Research components	Main theoretical claims under Durable Inequality Theory	Implications for public health and epidemiology
Research design	<p>Comparison of different organizational or institutional arrangements</p> <p>Focus on ties: organisations, networks, Categories</p>	<ul style="list-style-type: none"> ▪ Network analysis is helpful for behavioural risk factors. ▪ Longitudinal and multidisciplinary studies to analyse the interdependence of decisions at different life-stages and across different domains ▪ Comparative studies of how organisational practices match ethnicity/race and socio-economic status and lead to structural differences in SES and ultimately health
Classification of ethnicity	<ul style="list-style-type: none"> ▪ Categories defined along boundaries limiting access to valuable resources. ▪ Importance of the context in defining these boundaries 	<ul style="list-style-type: none"> ▪ Use multidimensional binary categories to assess ethnic inequalities in health ▪ Use flexible and contextualized categories.
Explanatory factors	<ul style="list-style-type: none"> ▪ The role of belief is secondary ▪ Alter organisational procedures ▪ Make leadership accountable ▪ Alter informal networks and friendships 	<ul style="list-style-type: none"> ▪ Describe the role of ties in health behaviours and their psychological risk factors ▪ Describe the organizational processes that account for the selection of some EMG in specific health care niches
Data analysis	<ul style="list-style-type: none"> ▪ Matching ethnicity with varying socio-economic status is the major driver of inequalities ▪ The higher the level of matching, the higher the inequality 	<ul style="list-style-type: none"> ▪ Controlling the ethnicity-health relationship for SES is not appropriate. ▪ Focus on the interaction between ethnicity and SES in health and health care ▪ Assess cumulative inequality within a domain, across domains and across generations

Conclusions

DIT is an important sociological theory with potentially significant implications for studies on ethnicity and inequality, and possibly health inequality in general. Its main advantage, as Tilly himself claimed, is that it can be put to empirical test. We are not aware of studies designed to do this in the ethnicity field, but awareness of these ideas may lead others holding such data to examine them. Equally, researchers may be encouraged to set up new studies that permit tests of DIT. In addition, DIT provides a promising avenue for reducing ethnic inequalities in health, without relying on the somewhat unrealistic expectation, at least in the short term, of first changing beliefs. This is, of course, a strong assumption and will be hotly contested, but it provides research on ethnicity and health with new and much needed perspectives. In public health the most effective interventions are usually systems-based e.g. laws, national policies, strategies etc. The Tilly theory is in line with this perspective.

Earlier, we raised three key questions: first, why is non-white ethnicity usually associated with lower SES? The Tilly theory indicates that this occurs because organizations match their internal structures to external structures, permitting exploitation. Second, why is this association stronger for some ethnic minority groups than for others? Tilly provides two possible explanations: the four inequality mechanisms (exploitation, opportunity hoarding, emulation and adaptation) may combine and yield different outcomes in the different ethnic minority groups; and the multiple categorical boundaries may lead to heterogeneous risks of poor health. Lastly, why, for a given ethnic group, is the association stronger in some countries than in others? Several country-level features may influence the matching process:

regulation of the labour market; the ability of some ethnic groups to hoard an economic niche in one country but not in another; the importance of the exploitation for the organization's survival in – for example – some extremely open or dependent economies; the role of public policy (schools, housing, health care etc.) in mixing or separating ethnic groups. While we recognize that these are not definitive answers, we believe they show how DIT leads to a fresh mode of analysis.

This introduction to the relevance of the theory is, we hope, merely a prelude to rigorous and detailed theoretical debate and analysis by a multidisciplinary public health research workforce. Following that, we can hope to devise empirical tests. While we have taken the example of ethnicity, the theory has wider implications within public health, across the various inequality strands.

Acknowledgements:

We are very grateful for the valuable comments of participants in the Utrecht HOME meeting, held on 17 February 2009, as well as of members of the Edinburgh Ethnicity and Health Research Group at Edinburgh University. Special thanks to David Ingleby, Martin Pickersgill and Marie Verhoeven for their valuable comments. Karien Stronks, Mark Johnson, and an anonymous referee provided peer review that helped us to substantially improve the paper. We thank Anne Houghton for secretarial assistance in preparing this paper.

Competing interests: none

Funding:

This work has been made possible thanks to a grant from the COST Action HOME (n° STSM ISO603-3388) as well as a grant from the Fonds de la recherche scientifique Médicale, which made possible a scientific mission at the Public Health Section of Edinburgh University.

References

- (1) IOM. World Migration 2008. 2009
- (2) Bhopal R. Chronic diseases in Europe's migrant and ethnic minorities: challenges, solutions and a vision. *Eur J Public Health*. 2009; 19:140-143.
- (3) Gordon D, Shaw M. Inequalities in health : the evidence presented to the Independent Inquiry into Inequalities in Health. Bristol: The Policy Press 1999:262.
- (4) Mackenbach JP, Bakker M. Reducing inequalities in health : a european perspective. London: Routledge 2002:357.
- (5) Siegrist J, Marmot MG. Social inequalities in health new evidence and policy implications. Oxford: Oxford University Press 2006
- (6) Department of Public Health University of Rotterdam. *Tackling health inequalities in Europe, an integrated approach : Eurothine final report*. 2009:634.
- (7) Salway, S, Nazroo, J, Mir, G, Craig, G, Johnson, M, and Gerrish, K. Fair Society, Healthy Lives: a missed opportunity to address ethnic inequalities in health. *bmj.com*: http://171.66.124.147/cgi/eletters/340/feb09_1/c684#234369. 12-4-2010.. (Accessed 2-5-2010)
- (8) Krieger N. Embodying inequality: A review of concepts, measures, and methods for studying health consequences of discrimination. *International Journal of Health Services*. 1999; 29:295-352.
- (9) Krieger N. Stormy weather: Race, gene expression, and the science of health disparities. *American Journal of Public Health*. 2005; 95:2155-2160.
- (10) Williams DR. Race and health: Basic questions, emerging directions. *Annals of Epidemiology*. 1997; 7:322-333.
- (11) Tilly C. Durable inequality. Berkeley: University of California Press 1998
- (12) Krieger N, Rowley DL, Herman AA et al. Racism, Sexism, and Social-Class - Implications for Studies of Health, Disease, and Well-Being. *American Journal of Preventive Medicine*. 1993; 9:82-122.
- (13) LillieBlanton M, Parsons PE, Gayle H et al. Racial differences in health: Not just black and white, but shades of gray. *Annual Review of Public Health*. 1996; 17:411-448.
- (14) Nazroo JY. The structuring of ethnic inequalities in health: Economic position, racial discrimination, and racism. *Am J Pub Health*. 2003; 93:277-284.
- (15) Chandola T. Ethnic and class differences in health in relation to British South Asians: using the new National Statistics Socio-Economic Classification. *Soc Sci Med*. 2001; 52:1285-1296.

- (16) Lorant V, Van Oyen H, Thomas I. Contextual factors and immigrants' health status: double jeopardy. *Health Place*. 2008; 14:678-692.
- (17) Voko Z, Csepe P, Nemeth R et al. Does socioeconomic status fully mediate the effect of ethnicity on the health of Roma people in Hungary? *J Epidemiol Community Health*. 2009; 63:455-460.
- (18) Kolarcik P, Geckova AM, Orosova O et al. To what extent does socioeconomic status explain differences in health between Roma and non-Roma adolescents in Slovakia? *Soc Sci Med*. 2009; 68:1279-1284.
- (19) Wiking E, Johansson SE, Sundquist J. Ethnicity, acculturation, and self reported health. A population based study among immigrants from Poland, Turkey, and Iran in Sweden. *J Epidemiol Community Health*. 2004; 58:574-582.
- (20) Lindstrom M, Sundquist J, Ostergren PO. Ethnic differences in self reported health in Malmo in southern Sweden. *J Epidemiol Community Health*. 2001; 55:97-103.
- (21) Borrell C, Muntaner C, Sola J et al. Immigration and self-reported health status by social class and gender: the importance of material deprivation, work organisation and household labour. *Journal of Epidemiology & Community Health*. 2008; 62.
- (22) Lindstrom M, Sundquist J, Ostergren PO. Ethnic differences in self reported health in Malmo in southern Sweden. *J Epidemiol Community Health*. 2001; 55:97-103.
- (23) Kaufman JS, Cooper RS, McGee DL. Socioeconomic status and health in blacks and whites: The problem of residual confounding and the resiliency of race. *Epidemiology*. 1997; 8:621-628.
- (24) Blank RM, Dabady M, Citro CF et al. Measuring racial discrimination. Washington, DC: National Academies Press 2004
- (25) Annandale E. The sociology of health and medicine : a critical introduction. Malden, MA: Polity Press 1998
- (26) Williams DR, Neighbors HW, Jackson JS. Racial/ethnic discrimination and health: findings from community studies. *Am J Public Health*. 2003; 93:200-208.
- (27) McGuire TG, Ayanian JZ, Ford DE et al. Testing for statistical discrimination by race/ethnicity in panel data for depression treatment in primary care. *Health Services Research*. 2008; 43:531-551.
- (28) Schulman KA, Berlin JA, Harless W et al. The effect of race and sex on physicians' recommendations for cardiac catheterization. *N Engl J Med*. 1999; 340:618-626.
- (29) Pager D, Shepherd H. The sociology of discrimination: Racial discrimination in employment, housing, credit, and consumer markets. *Annual Review of Sociology*. 2008; 34:181-209.

- (30) Arts WA, Halman L. European values at the turn of the millennium. Leiden: Brill 2004
- (31) Kawakami K, Dunn E, Karmali F et al. Mispredicting Affective and Behavioral Responses to Racism. *Science*. 2009; 323:276-278.
- (32) Diani M. The relational element in Charles Tilly's recent (and not so recent) work. *Social Networks*. 2007; 29:316-323.
- (33) Wright EO. Metatheoretical foundations of Charles Tilly's Durable Inequality. *Comparative Studies in Society and History*. 2000; 42:458-474.
- (34) Tilly C. Relational studies of inequality. *Contemporary Sociology-A Journal of Reviews*. 2000; 29:782-785.
- (35) Grusky DB. Durable inequality. *American Journal of Sociology*. 1999; 104:1823-1825.
- (36) Portes A. The economic sociology of immigration essays on networks, ethnicity, and entrepreneurship. New York: Russell Sage Foundation 1995
- (37) Christakis NA, Fowler JH. The spread of obesity in a large social network over 32 years. *N Engl J Med*. 2007; 357:370-379.
- (38) Christakis NA, Fowler JH. The collective dynamics of smoking in a large social network. *N Engl J Med*. 2008; 358:2249-2258.
- (39) Ali MM, Dwyer DS. Social network effects in alcohol consumption among adolescents. *Addict Behav*. 2010; 35:337-342.
- (40) Bush J, White M, Kai J et al. Understanding influences on smoking in Bangladeshi and Pakistani adults: community based, qualitative study. *BMJ*. 2003; 326:962.
- (41) Norredam M, Nielsen SS, Krasnik A. Migrants' utilization of somatic healthcare services in Europe--a systematic review. *Eur J Public Health*. 2009.
- (42) Grumbach K, Mendoza R. Disparities in human resources: addressing the lack of diversity in the health professions. *Health Aff (Millwood)*. 2008; 27:413-422.
- (43) Anderson LM, Scrimshaw SC, Fullilove MT et al. Culturally competent healthcare systems. A systematic review. *Am J Prev Med*. 2003; 24:68-79.
- (44) Lanting LC, Joung IMA, Mackenbach JP et al. Ethnic Differences in Mortality, End-Stage Complications, and Quality of Care Among Diabetic Patients. *Diabetes Care*. 2005; 28:2280-2288.
- (45) Stronks K, Ravelli AC, Reijneveld SA. Immigrants in the Netherlands: equal access for equal needs? *J Epidemiol Community Health*. 2001; 55:701-707.

- (46) Onega T, Duell EJ, Shi X et al. Race versus place of service in mortality among Medicare beneficiaries with cancer. *Cancer*. 2010; Published online first 22/03/2010:PMID: 20309847.
- (47) Romero-Ortuño R. Access to health care for illegal immigrants in the EU: should we be concerned ? *European Journal of Health Law*. 2004; 11:245-272.
- (48) Pfeffer N. Theories in health care and research - Theories of race, ethnicity and culture. *British Medical Journal*. 1998; 317:1381-1384.
- (49) Sentell T, Shumway M, Snowden L. Access to mental health treatment by English language proficiency and race/ethnicity. *J Gen Intern Med*. 2007; 22 Suppl 2:289-293.
- (50) Fowler JH, Christakis NA. Dynamic spread of happiness in a large social network: longitudinal analysis over 20 years in the Framingham Heart Study. *BMJ*. 2008; 337:a2338.
- (51) Dodds PS, Muhamad R, Watts DJ. An experimental study of search in global social networks. *Science*. 2003; 301:827-829.
- (52) Davey Smith G, Charsley K, Lambert H et al. Ethnicity, health and the meaning of socioeconomic position. In: Graham H, ed. *Understanding Health Inequalities*. London: Open University Press 2000: 25-37.
- (53) Farmer MM, Ferraro KF. Are racial disparities in health conditional on socioeconomic status? *Soc Sci Med*. 2005; 60:191-204.
- (54) Smedley BD, Stith AY, Nelson AR et al. *Unequal treatment : confronting racial and ethnic disparities in health care*. Washington, D.C: National Academy Press 2003

The Corresponding Author has the right to grant on behalf of all authors and does grant on behalf of all authors, an exclusive licence (or non exclusive for government employees) on a worldwide basis to the BMJ Publishing Group Ltd to permit this article (if accepted) to be published in JECH and any other BMJPG products and sublicences such use and exploit all subsidiary rights, as set out in our licence (<http://jech.bmj.com/site/about/licence.pdf>).