Towards a Scientific Model of Culture Shock and Intercultural Communication

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Abstract

This article seeks to make an original contribution to the study of intercultural communication by examining the 'culture shock' model by means of scientific theories of behaviour. It will argue that although culture chock is built on both cultural determinist and cultural relativist foundations, it is broadly empirically accurate. However, it needs to be rendered consilient. Applying Genetic Similarity Theory to it renders it consilient and, indeed, it parsimoniously explains an important stage of culture shock. Culture shock is also found to be congruous with scientific behaviourist research. In engaging with culture shock as it does, the article aims to render intercultural communication more directly germane to those beyond the discipline.

Keywords: Culture Shock, Consilience, Science, Genetic Similarity Theory, Behaviourism

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Introduction

It has been argued that the 'culture shock'[1] model (Oberg 1954, 1960) plays a central role in intercultural communication and related disciplines such as intercultural education. Stier (2006, 7) argues that intercultural education has a 'preoccupation' with 'culture shock' and the topic itself does indeed often seem to be central to the research of intercultural communication scholars and intercultural education scholars (e.g. Thiagaraian 1971, Marx 2001, Nagata 2004, Teng 2005, Abarbanel 2009, Resnik 2009, Tedick 2009, Gu 2009, Jokikokko 2009). Further evidence of the model's salience can be seen in the tendency for textbooks on intercultural communication to devote at least one – often lengthy – chapter to the topic (e.g. Paige 1993, Shaules 2007).

However, the conception of culture shock which is central to this field is often problematic. In this article, I will demonstrate that the model of culture shock often currently employed by intercultural scholars is not scientific because it is not underpinned by science and because it makes certain unscientific assumptions. Nevertheless, I aim to demonstrate, in this article, that the culture shock model can be understood in terms of biological and evolutionary science and, in particular, Genetic Similarity Theory (Rushton 2005). In doing so, I aim to provide a model central to intercultural communication – and, so, to a certain extent, intercultural communication itself - with a clearer grounding in hard science, thus rendering it scientifically consilient and so of more conspicuous use to scholars beyond the discipline of intercultural communication or other social sciences. In so-doing it will aim to rescue what it regards as an otherwise useful model from what Popper (1963) has famously termed 'false rationalists,' those who espouse superficially rational theories that are in fact religious perspectives involving irrational belief.

Culture Shock and Kalervo Oberg's Model

'Culture Shock' is one of those concepts that has become so popular amongst a section of the general public that few people know where it comes from or who coined it. There are numerous sociological articles focusing on culture chock, often assessing international students through the prism of it.[2] Some scholars have argued that Canadian anthropologist Kalervo Oberg (1901 – 1973) coined the phrase 'culture chock' (e.g. Ward, Bochner and Furnham 2001, 270). This does not appear to be accurate as I argue elsewhere (see Dutton 2011, Dutton Forthcoming). He was, however, the first to look at the concept in detail and to develop it into a model.

Oberg's presentation, entitled "Culture Shock," took place at a lecture before the (American expatriate) 'Women's Club of Rio de Janeiro' on 3 August 1954 (Oberg, 1954). In his presentation, he laid out the basics of culture shock: 'Culture shock is precipitated by the anxiety that results from losing all our familiar signs and symbols of social intercourse.' He looked at its stages and it is his systematic isolation of the different stages, and detailed analysis of them, that marked Oberg's original contribution as well as his advice on dealing with them (Golde 1986, 11). Stage one is what is sometimes called 'xenophilia;' a naïve fascination with the new culture. Xenophilia soon gives way to xenophobia, as the migrants tend to group together in cliques and become angry about the natives, negatively stereotyping them and romanticising home. Eventually, they reach some form of adjustment. And, finally, an almost complete adjustment:

> In the fourth stage your adjustment is about as complete as it can be. The visitor now accepts the customs of the country as just another way of living. You operate within the new milieu without a feeling of anxiety although there are moments of strain **(Oberg 1954)**.

Oberg's remark about 'just another way of living' is fascinating and I will return to it anon. But this, in essence, is Oberg's model of culture shock, sometimes termed the U-curve model**,** though it has been termed the 'w-curve' model to account for 'reverse culture shock' upon return home (Gullahorn and Gullahorn 1963). Oberg's model has been particularly popular as a model through which to understand the emotional experience of fieldwork endured by cultural anthropologists (see Wagner 1981, Hastrup 1990, Brody and Baba 1991, Messner 1993, Ashmalla 1994, Harner 1996 and Ward 1999 or Irwin 2007). It has also led to a great deal of literature, beyond anthropology, drawing on Oberg's model (e.g. Marx 2001, Samovar, Porter and McDaniel 2010).

Science, Consilience and Genetics

However, we might question the extent to which this research is actually scientific. The hallmark of scientific research is that it reflects what Wilson (1998) termed 'consilience.' This means that explanations of phenomena at one level are grounded in those at a lower level; something which Wilson justifies because of the proven success of science in answering research questions accurately and making accurate predictions.[3] Accordingly, a theory of psychology should ultimately be grounded in biology, which itself should be grounded in chemistry, then physics and further reducible to mathematical formulae. As such, in order to really understand why people experience culture chock we must ground our psychological and anthropological explanations in biology and, therefore, in Evolutionary Theory; and so, to some extent, in the hereditarian tradition (see Kuznar 1997).

It is important not to forget the influence of environment on individual character and, thus, culture (see Lumsden and Wilson 1981). But the published, scientific literature indicates that cultural determinism is not persuasive. Culture is on a biological leash. Some scientists place biological influence at around sixty percent (see Rushton 2005) but, nevertheless, there is a large body of evidence of a significant inherited dimension to character both individually and as an average 'human nature.' For example, there is strong evidence that humans are strongly evolved to seek out packs (especially composed of people genetically like them), just as they do in stage two of culture shock, as we will see. For example**,** Larry Hirschfield (1996, 88) notes that even young children, aged around four, see human races in essentialist terms and he notes that this does not develop in tandem with knowledge about species, which might imply that racial categorisation was a misfiring of an evolutionary adaptation permitting humans to strongly distinguish between species because human sub-groups superficially act like different species. This was a point suggested by Gil-White (2001). Accordingly, it is suggested that humans have evolved to categorise people simplistically whereby the out-group is regarded as different in essential terms from themselves. There is considerable evidence for this hypothesis. Hart *et al* (2000) found that black and white Americans showed different amygdala responses to racial in-group and out-group members. The amygdala is the seat of emotion in the brain and deals with the most basic evolutionary sources of fear (Le Doux 1996). Clearly, these tests related to faces and other research **has** shown high human sensitivity to the face, with people trusting others more if their face resembles their own (De Bruin 2002).

Equally, there is an increasing body of evidence which indicates that genetics – which is, anyway, ultimately a matter of evolution to a specific environment – is a significant dimension to personality and, therefore, to the dynamics of a different 'cultures.' For example, Alarcon, Foulks and Vakkur (1998, 11) observe that:

> 'A direct link between genes and personality traits has been established in several cross-cultural studies. Researchers in the United States and Israel independently discovered that people who score high on psychological test items that reflect traits of extroversion, impulsiveness, thrill-seeking, quick-temperedness, novelty-seeking, euphoria and extravagance have a particular variant of a gene (D4DR) that allows the brain to respond to dopamine and D4 receptor sites.'

So-called 'novelty-seeking traits', which are partly controlled by D4DR, variably interact with temperamental tendencies such as harm-avoidance, reward-dependence and persistence in order to create an individual personality. They conclude that, 'Such findings suggest that the expression of these basic personality traits could vary from one population to another because of genetic selection and drift over time' (Alarcon *et al* 11) – this is the tendency of certain genetic mutations to become dominant in very small populations. 'Genetic natural selection of this sort might result in certain personality traits being more common in some societies than in others, thereby creating a modal personality characteristic for each cultural group' (Alarcon *et al* 11). A consilient explanation must be grounded in this kind of research.

This is not generally what has occurred with regard to culture shock. As we will see, culture shock substantially reflects – in its most common form – the widely discredited school of cultural determinism, debunked, in anthropology, by Freeman's (1983) research in Samoa which undermined Mead's (1928) assertion that she had found a 'negative instance' in terms of teenage angst. It also reflects, as we shall see, cultural relativism, which is scientifically problematic because if we cannot make comparisons then we are left with epistemological pessimism (see Kuznar 1997).

Culture Shock and False Rationalism

But as already indicated, much of this research is not consilient. Oberg's model reflects cultural determinism, such as when he (Oberg 1954) writes:

> You become aggressive, you band together with your fellow countrymen and criticize the host country, its ways, and its people. But this criticism is not an objective appraisal but a derogatory one. Instead of trying to account for conditions as they are through an honest analysis of the actual conditions and the historical circumstances which have created them, you talk as if the difficulties you experience are more or less created by the people of the host country for your special discomfort.

This is inconsistent because he also seems to believe that Westerners, unlike those from the developed world, can be blamed for their reactions: "You take refuge in the colony of your countrymen and its cocktail circuit which often becomes the fountainhead of emotionally charged labels known as stereotypes. This is a peculiar kind of invidious shorthand which caricatures the host country and its people in a negative manner" (Oberg 1954). And, indeed, they have the ability to rapidly overcome this if they would reach a moment of realisation whereby they understand that the culture is "just another way of living." This is a common view amongst Culture Shock scholars. For example, Marx (2001, 60) asserts:

> The aim of acquiring a cultural framework is to be able to adopt *cultural relativism* . . . , the concept admits that there is no absolute right or wrong – that no one approach is the best – and acknowledges that a variety of approaches can be effective, depending on particular cultural context. Being able to change methods according to the situation in which you find yourself is a key part of breaking through culture shock.

Underpinning this is, I think, a strong belief in personal free will. In effect, the listeners are assumed to be equal with relatively equal abilities to, for example, overcome culture shock and to make free decisions. There is a wealth of scientific evidence that this is not accurate and that humans are very limited by both heredity, life development and economic circumstances as to what decisions we can really make (see Wilson 1998, Pinker 2002 and below). However, as I have argued, to cease our analysis with 'economic circumstances' or 'family history' is not consilient. It is average differences in character which ultimately underpin the other factors; genetic differences having been shown to be highly significant in aspects of character leading to differences in personality and thus life choices (Alarcon *et al* 1998, Lynn and Vanhanen 2002) though I emphasise we should not forget the way that environment can interact with genetic predispositions in complex ways in individual cases.[4] Moreover, as Dawkins (2003) notes, different cultures are superior or inferior according to culturally shared desires such as to

survive serious illness. Thus, the belief that the differences merely reflect 'just another way of living' seems to be an assertion that ultimately stops you from asserting perceptions based on empirical evidence and shared first principles. It is thus unscientific (see Kuznar 1997).

The Evidence for Culture Shock

But, cultural relativism aside, there is a wealth of evidence for Oberg's broad model of culture shock that has not been grounded in evolutionary theory and I should emphasise that I am not challenging the veracity of the entire culture shock model but rather the elements of it which are built upon and advocate both cultural determinism and the need to accept cultural relativism. The remainder seems to be empirically sound. Ethnographic research in New Zealand (Holmes 2005) has pointed to the way in which Chinese international students form social groups and have little contact either with native or other international students. The development of an international student gang has also been noted in other ethnographic research. For example, Myles and Cheng (2003) found that international students at a Canadian university tended to have little to do with Canadians but seemed surprisingly well-adjusted to the country through information accrued through other international contacts.

Studies of friendship patterns among foreign students have found that the students tend to belong to three distinct social networks: fellow compatriots; influential people from the host nation such as teachers; and other non-compatriot foreign students; the latter being based on their shared foreignness (Bochner, MacLeod and Linn 1979). Studies from Britain, the USA and Australia have consistently found that, of the three networks, the 'fellow-foreigner network' is the most significant, and that it is found again and again amongst foreign students (e.g., Nowack and Weiland 1998 and Wiseman 1997). Of a sample of 37 overseas students at an Oxford University college**,** forty-four percent reported that their best friends were co-nationals compared to 29 percent whose best friend was from the host nation (Bochner, Lin and McLeod 1979). Furnham and Bochner (1982) found that, of a sample of 150, only eighteen percent of overseas students in the UK had close British friends, whereas 39 percent had close friends who were co-nationals and 38 percent had close friends who were fellow overseas students. Bochner, Hutnik and Furnham (1985) found that only seventeen percent of overseas students had close British friends while seventy percent had no close friends who were not co-nationals after over a year in the UK, using the same Oxford University sample of 37. There has been research in many cities on how expatriate infrastructures develop and the form they take. Findlay *et al* (1996) and Beaverstock (2002), who highlights expat bars in Singapore, produce findings congruous with Oberg's observations.

Methodological Issues

Before continuing, I must deal with an important methodological point. There are two significant traditions, certainly within biology, with one regarding the other's work as unacceptably speculative. Ullica Segerstråle (2000, 255) summarises the conflict thus:

> 'The controversy about socio-biology can at least be partially explained as a conflict between the taken-for-granted attitudes to research held by practitioners trained in two different scientific traditions: naturalists and experimentalists. Indeed, one might say that, as scientists, naturalists and experimentalists live in partly different worlds.'

For those in the experimental tradition of science, 'good science' is science which is absolutely proven, beyond reasonable doubt. Moreover, for these experimentalists, naturalism – whereby you describe components of nature and show how they are congruous with evolution – is uninteresting. You should, instead, focus on understanding the features common to all ecosystems. This is a tradition strongly associated with sociobiology critic Richard Lewontin (Segerstråle 2000, 256). Experimentalists do not wish to simply gather facts, but explain those facts using a law.

Scientific naturalists, by contrast, are in an older tradition of science whereby you wish to understand nature and speculate, based on the available evidence, in an attempt to understand the natural world as a whole. This kind of 'naturalism' is related to the naturalistic school of anthropology in that it involves actually going out into nature and collecting specimens. Clearly, Darwin's Theory of Evolution was in this tradition. Darwin was a naturalist and, based on his observations, he suggested his Theory of Evolution by Means of Natural Selection. It was not absolutely proven when he suggested it but there was certainly a body of evidence for it. It rendered the animal world congruous with the materialist

underpinnings of science and made sense of various disparate empirical observations. Accordingly, there was a degree to which it was 'speculative' but it was also a contribution to science because it attempted to understand the nature of the world based on empirical evidence.

Experimentalism is to be praised for its exactness but it is problematic because it demands such exacting standards of evidence before an assertion can be made. This leads to little room for intelligent speculation and the public, collegial dimension to science whereby ideas are freely discussed (see Kuznar 1997). Moreover, we will never be able to make any assertions if the level of proof required is so absolute that, for example, Richard Dawkins' attempts to understand, historically, why certain animals have evolved the features they have is 'bad science' as Lewontin suggests it is (Segerstråle 257). To a certain degree, it is in the spirit of science to speculate, to suggest models and see if they work. Evolutionary Theory was, once, precisely such a speculative model. Naturalism can be problematic if it focuses too intensely on describing the natural world without contextualising this into broader models and formulas. Also, there is the danger of it being too speculative and we must be careful in this regard.

But mindful of its faults, there is a degree to which this article is in the latter tradition. It will attempt to render the observations we have noted about culture shock congruous with psychological and biological research. It will not prove – beyond doubt – that they are congruous but it will demonstrate that they could, likely, be and so demonstrate how it is possible for culture shock to be consilient. The work of the scientists I will cite, as with Wilson's work, may have been criticised. There is always an ongoing debate over contributions to science. But, as an anthropologist, I am not in a position to take sides in technical, scientific debates. Accordingly, in rendering my work consilient, I think the most useful method is draw only upon research which is widely accepted and thus seen in scientific textbooks or accepted by leading scholars. This is not a perfect method as bad science can, alas, become widely accepted even amongst scientists (see Segerstråle 2000). Accordingly, it is also necessary for the anthropologist to note which side of a debate – amongst eminent scientists – is feeling the need to employ fallacious arguments and be more suspicious of this side accordingly.[5]

The other problem with the possibilities I will raise is that some of them appear to be in what is called the 'Radical Behaviourist' tradition of psychology. Radical Behaviourism makes a number of assumptions such as that psychology should be a consilient science; that measurable, observable behaviour should be focussed upon, that people have no free will; that humans are ultimately animals and so can be understood through experiments with animals and that all behaviour can ultimately be reduced to stimulus response. Unlike 'Behaviourism' it accepts that an organism's actions are also genetically and hormonally influenced. Some of the research cited below draws upon some of these ideas. And so I must emphasise that I am simply suggesting scientific explanations for culture shock; suggesting how it can be consilient. This does not mean that I do not appreciate the debates over the usefulness of different scientific methodologies such as aspects of Radical Behaviourism.[6]

Genetic Similarity Theory: A Summary of the Evidence

It is my belief that culture shock makes sense as a process underpinned by evolutionary adaptation and, most importantly, the desire to assist those who are genetically similar to us. In essence, Genetic Similarity Theory answers the question: Why, when experiencing culture shock, do expatriates create cliques composed of co-nationals?[7]

Darwin first proposed the idea that altruism (that is assisting somebody other than yourself and your immediate relatives) – and so morality – had a basis in evolution (1871, 489–90). It was important for Darwin to emphasise the moral continuity between humans and other animals because the opponents of human evolution had argued for their discontinuity in these regards. Darwin provided numerous examples of how there was a continuity. For example, Darwin described how leaders of monkey troops act as guards and alert their comrades to danger.

In *The Origin*, Darwin (1859) saw that altruism posed a major enigma for his theory of evolution. How could altruism evolve through 'survival of the fittest' if altruism means self-sacrifice? If the most altruistic members of a group sacrifice themselves for others, they will have fewer offspring to pass on the genes that made them altruistic. It should be selfishness that survives, not in-group altruism. A knowledge of genetics was necessary in order to solve this apparent paradox and it was substantially solved by William Hamilton (1964). In a word, you don't just look out for yourself and for your children

but, more broadly, for your genes which may be present in more distant family, friends, co-ethnics and, ultimately, all humans. But, he argues, you are, on average, more desirous to be altruistic to people the more genetically similar they are to you. Siblings share fifty per cent of their genes, nephews and nieces twenty-five per cent, and cousins twelve and a half per cent. As such, when you lay down your life for your kin, you ensure the survival of at least some of your own genes just as you do by simply assisting these relatives through life. This only makes sense if the world is looked at through the prism of individual genes – 'the selfish gene' as Dawkins (1976) termed it. The human is merely a vehicle for these genes, which metaphorically co-operate with each other for their own survival. Hamilton's idea was widely popularised – and, at the time controversially, extended to humans - by Edward Wilson in his 1975 book *Sociobiology* (Wilson 1975). There is clear evidence that many animal species do detect and then act on genetic similarity: that is as distinct from resemblances that are not genetic (Hauber and Sherman 2001). In a classic study of bees, Greenberg (1979) bred for fourteen degrees of closeness to a guard bee, which blocks the nest to intruders. Only the more genetically similar intruders got through.

In 1984, Rushton began to apply this model to humans (Rushton *et al*. 1984; Rushton 1986, 1989, 2004; Rushton and Bons 2005). He termed his approach 'Genetic Similarity Theory' and argued that if genes produced effects that allowed bearers to recognise and favour each other, then altruistic behaviour could evolve well beyond 'kin selection' to, indeed, nationalism. Rushton applied his theory to mate-selection. He found that both spouses and best friends are most similar on socio-demographic variables such as age, ethnicity and educational level (r 5 0.60), next most on opinions and attitudes (r 5 0.50), then on cognitive ability (r 5 0.40), and least, but still significantly, on personality (r 5 0.20) and physical traits (r 5 0.20). Even marrying across ethnic lines 'proves the rule.' In Hawaii, men and women who married across racial lines were more similar in inherited aspects of personality, such as the desire to take risks, than those marrying within their group, suggesting that couples 'make up' for ethnic dissimilarity by choosing spouses more similar to themselves in other respects (Ahern *et al*. 1981). But Evolution has also set an upper limit on similarity – incest avoidance - because this can lead to harmful genes being more likely to be passed on.

Several studies have shown that people prefer genetic similarity in social partners, and befriend each other on the more heritable components of traits, rather than on the most conspicuous ones. In a study of married couples, Russell *et al*. (1985) found that across thirty-six physical traits, partner similarity was greater on attributes with higher heritability such as wrist circumference (seventy-one per cent heritable) than it was on attributes with lower heritability such as neck circumference (forty-eight per cent heritable). When spouses are more similar in terms of heritable dimensions they report greater marital satisfaction (Russell and Wells 1991). In a study of best friends, Rushton (1989) found the similarity of friends was more pronounced on the more heritable dimensions. Rushton (2005, 496) argues that these results cannot be explained by cultural theories. 'Genetic Similarity Theory and cultural determinist theory make opposite predictions about social assortment. Cultural determinist theory predicts that phenotype matching by spouses will be greater on those traits that spouses have become more similar on through the shared experiences that shape attitudes, leisure time activities and waist and bicep size (e.g. through diet and exercise). Genetic Similarity Theory, on the other hand, predicts greater matching on the more heritable traits.'

Salter's (2007) analysis of Cavalli-Sforza's (1994) data showed that if the world population were just English then the kinship between any random pair of Englishmen would be zero. But if the world population consisted of both English people and Germans, then two random English people would have a kinship of 0.0044, 1/32 of a cousin when compared to a German. As genetic distances between populations become larger, the kinship coefficient between random co-ethnics within a population gets larger. Two English people become the equivalent of 3/8 of a cousin by comparison with people from the Near East; 1/2 cousins by comparison with people from India; half-siblings by comparison with people from China or East Africa; and are like full-siblings compared with people from Southern Africa. Thus, the 'ethnic nation' is a direct extension of the family and this becomes germane in relations with people from other nations when those from one's own nation are present.

Genetic Similarity Theory has been widely criticised, but I cannot see how many of these criticisms stand-up. Some, for example, assert that people associate with people 'like them' because doing-so backs-up their particular view of the world. But this is question-begging and is not grounded in evolutionary theory. There is clearly evidence of a genetic dimension to holding shared opinions and that

people associate according to aspects of character, and thus opinions, which are genetic. And, therefore, they are associating with people who share their genes and this is congruous with evolution which, we would assume, anybody of an analytical bent would accept. Moreover, we might ask why they are, on average, attracted to people who are genetically physically similar? Alternative theories can explain bits and pieces here and there, but Rushton's theory seems to explain the entire spectrum of information. Theories similar to Rushton's are also advocated and accepted by leading scholars (see Salter 2007 and related endorsements). Rushton has the reputation for being 'controversial' – mainly because he has written about race (see Rushton 2000) - and there are many critics of him (e.g. Kuznar 1997). But, as I have said, we are not in a position, as outsiders, to engage in the technicalities involved in these debates. It is my view that Rushton's thinking helps to explain 'culture shock.' His theory may one day be proved wrong but, in science, we can only work with current knowledge; something always developing. Culture shock is a time of distress in which people are most inclined to act on their instincts at it appears that humans are instinctively driven to be with the people most genetically like them. Accordingly**,** there is at the very least a case for arguing that Culture Shock is an almost inevitable by-product of humanity's evolutionary past.

Culture Shock: Other Scientific Possibilities

Though Genetic Similarity Theory seems to explain a specific phenomenon in Stage Two, other stages can also be explained scientifically**.** We might begin by examining the first stage; the fascination with the new culture. There is evidence that we tend to find new experiences initially fascinating as long as they are not obviously threatening. The inquisitiveness of humans, and many other pack animals, is widely known and it is scientifically explicable. Zuckerman (2005, 196) observes that being confronted with something novel and interesting results in a release of dopamine, in rats, which tends to create feelings of anticipatory desire and excitement, if not actual pleasure. He equally observes various experiments that indicate that thrill-seeking rats – those who like taking risks – release more dopamine, in response to the same stimuli, than those who are less risk-oriented (see Dellu *et al* 1996). Accordingly, extrapolating this to humans, we might suggest that the sense of fascination in the initial stages of culture shock can be explained by the release of dopamine in response to something novel. Humans enjoy 'arousal jags' (Berleyne 1960) even though these 'jags' involve a mild level of anxiety and some can cope with stronger jags than others. Excitement, on a scale of arousal, is sometimes posited as between 'attention' and full 'anxiety' (e.g. Lynn 1971, 31). In evolutionary terms, this taking pleasure in the novel, and in taking risks within certain limitations, has obvious benefits because it encourages exploration and learning.

However, in the next stage of culture shock, we see the opposite reaction: a deep dislike of that which is novel. Other research has examined the animal need for an environment which is predictable. Mild risk is exciting but extreme risk leads to anxiety. Even with dogs, an entirely unpredictable environment for a sustained period of time, will tend to lead to a nervous break-down (Hogan 2007, 6) and certain kinds of depression, with the physical symptoms which they entail, are often caused by dramatic change with which the victim finds it difficult to cope. Humans thus strive to find pattern and predictability in their environment, as well as a protective pack, and – as such – it makes sense that they would be drawn towards other foreigners and especially co-nationals because these would give pattern to the environment as well as engaging in adaptive evolutionary behaviour.

Another way of gaining this predictability would, of course, be to spend enough time in the new country in order to understand its patterns, including its language. But, again, this demonstrates a kind of inevitability to every stage of culture shock and the lack of a personal ability to do anything about it. You simply get used to it. Lynn (1971, 84) paraphrases Eysenck's (1957) research looking at the possible genetic origin of personality types. Eysenck observed that: 'whenever a stimulus is repeated several times, the nervous system builds up an inhibitory potential to that stimulus and the result is that that stimulus has less and less effect on the nervous system.' Being in a new environment involves precisely this kind of state of arousal. An environment that does not make sense is a potentially threatening situation and in potentially threatening situations the body has evolved a mechanism to prepare you fight or flight that is extremely well-known. If maintained for too long such a state can lead to physical damage. Lynn (1971) observes that, even in dogs, there are two kinds of response to being in a highly unpredictable environment: one is to break-down into withdrawal (introvert) while the other is become

highly aggressive (extrovert). These observations may, perhaps, be observed in some forms of culture shock. The 'fits of anger' described by Oberg would be extrovert breakdown.

Eysenck's observations would also help to explain the way in which culture shock involves something close to altered perceptions. During the second phase there is a high level of stress and, accordingly, the body releases high levels of adrenaline. This substance is known to enhance emotions. Accordingly, something which might be deemed mildly annoying when a person is calm is experienced as infuriating when high levels of adrenaline are being released throughout the body (Goldstein 2006, 76). Also, it is very widely accepted that the brain will tend to be selective in its perceptions. It focuses on that which is novel and which does not make sense and filters out the rest (Wolf 2010, 112) and so heightened emotion makes the novel object appear acutely so. This might also explain why people in Stage Two of culture shock are able, so readily, to note what is distinctive, in their view, about a particular culture. Stage Two also involves romanticising the culture which has been left behind; a nostalgia for the past which has also been examined by evolutionary psychologists. St Jacques *et al* (2009) have found that the human brain tends to deliberately de-emphasise unpleasant memories in favour of pleasurable ones, in order to aid current well-being. They found that this habit was particularly common amongst the elderly because their brains have fewer connections in an area of the brain that generates emotions and fewer in an area that controls memory and learning. The development, in culture shock, of relatively crude stereotypes is an understandable response because it renders the environment predictable, so decreasing the levels of stress, as we have suggested. However, Lindau (2010, 366) cites evidence that it is extremely difficult for animals to learn and understand when they are either too stressed or too relaxed and so we would not expect a genuinely sophisticated model of, for example, a new culture to develop until the sojourner had calmed down and this appears to be the experience of some anthropologists – there is a false dawn in Stage Two before a more profound understanding is reached later.

Oberg argues that – though there are moments of strain – by stage four you have accepted that the culture is 'just another way of living.' To the extent that this is accepted, we can possibly understand why. As Eysenck (1957) notes, humans find satisfaction in predictability and in understanding their environment and, by this stage, both would be achieved so there would be a sense in which the new culture would be just as satisfactorily predictable as the old one was. In this state, differences would no longer be perceived in a stark and emotional fashion and, indeed, one would be so used to them that one might begin to forget about them. This would scientifically explain reverse culture shock.

Conclusion

My aim in this article has been to rescue what I regard as a quite useful concept for understanding aspects of immigration and movement to foreign countries and demonstrate its scientific consilience. In so doing, I want to open up an aspect of intercultural communication to all scholars.

In this article I have argued that we must render this information consilient with biology and that Rushton's Genetic Similarity Theory permits us to do that, alongside other more widely accepted theories in evolutionary biology and psychology. As I have shown, this is indeed possible. Culture shock is a useful concept, but it is not (as is so commonly believed and even promoted by some businesses) something you 'get over' by your own efforts. It is an explicable process, consilient with current scientific knowledge. In the growing field of Intercultural Communication, scholars must understand the significance of genetics in how sojourners react with natives and how they react to new environments. Otherwise, the entire discipline may become yet another unscientific enterprise that will take students farther and farther from the truth. To avoid this, we must foster a dialogue between intercultural communication and science. This article – focussing on culture shock – contributes to this.

Notes

[1] The concepts of 'culture' and 'culture shock' are increasingly criticised in anthropology. For a defence of them see Dutton (Forthcoming). For a further defence of 'culture' see Dutton (2009, Ch. 2).

[2] For a useful bibliography see, for example, Furnham and Bochner (1986) and subsequent editions. For a detailed examination of 'culture shock's' popularity and origins see Dutton (Forthcoming).

[3] See Kuznar (1997, Ch. 3) for a comparison between 'scientific anthropology' and cultural theory when applied to particular tribes. In each case, the scientific method is shown to make more accurate predictions.

[4] I should emphasise that, in my view, people should be treated – as far as possible – as individuals, even if they can be better comprehended as part of a group. It is obviously a fallacy to assert that what is true, on average, of the group is therefore true of the individual member.

[5] Segerstråle (2000) observes the degree to which Lewontin engages in such arguments in opposing socio-biology.

[6] For a critical discussion of Radical Behaviourism see Popper and Eccles (1984, 60 – 66). They argue that conscious experiences are, in a sense, real because they involve measurable changes in the brain. This is focussing on internal behaviour which Radical Behaviourism has not done traditionally. For a critique of Popper's views on Radical Behaviourism see O'Donohue and Noll (1995). See also Staddon (2001).

[7] That there are other foreigners might simply be understood as a useful alliance as well as, possibly, in terms of this theory or aspects of it.

References

Abarbanel, J. (2009). 'Moving with emotional resilience between and within cultures.' *Intercultural Education,* 20: 1-2.

Ahern, F. M., R. E. Cole, R. C. Johnson and B. Wong. (1981). 'Personality attributes of males and females marrying within vs. across racial/ethnic groups.' *Behavior Genetics* 11: 181–94.

Alarcon, Renato, Edward Foulks and Mark Vakkur. (1998). *Personality Disorders and Culture: Clinical and Conceptual Interactions*. New York: John Wiley and Sons.

Ashamalla, R. (1994). 'The cultural adaptation of international student families: what can be done to help spouses and children.' *NFSA Working Papers* 45.

Beaverstock, Jonathan. (2002). 'Transnational Elites in Global Cities: British Expatriates in Singapore's Financial District.' *Geoforum,* 33:4.

Bochner, S., N. Hutnik and A. Furnham. (1985). 'The friendship patterns of overseas and host students in an Oxford student residence.' *Journal of Social Psychology,* 125: 689 - 694.

Bochner, S, B. MacLeod and A. Linn. (1979). 'Cross-cultural contact and the development of an international perspective.' *Journal of Social Psychology,* 107: 29 – 41.

Brody, Elizabeth and Marietta Baba. (1991). 'Explaining Differences in Repatriation Experiences: The Discovery of Coupled and Decoupled Systems.' *American Anthropologist,* 93: 2.

Cavalli-Sforza, Luigi L., Paolo Menozzi and Albert Piazza. (1994). *The History and Geography of Human Genes*. Princeton, NJ: Princeton University Press.

Darwin, Charles. (1859). *The Origin of Species*. London: Murray.

Darwin, Charles. (1871). *The Descent of Man,* London: Murray.

Dawkins, Richard. (2003). *A Devil's Chaplain: Reflections on Hope, Lies, Science and Love*. New York: Basic Books.

Dawkins, Richard. (1976). *The Selfish Gene*. Oxford: Oxford University Press.

De Bruine, Lisa M. (2002). 'Facial resemblance enhances trust.' *Proceedings of the Royal Society of London, B* 269: 1307–12.

Dellu F; Mayo W; Vallée M; Maccari S; Piazza P V; Le Moal M; Simon H. (1996), 'Behavioral reactivity to novelty during youth as a predictive factor of stress-induced corticosterone secretion in the elderly--a life-span study in rats.' *Psychoneuroendocrinology*, 21:5:441-53.

Dutton, Edward. (2009), *The Finnuit: Finnish Culture and the Religion of Uniqueness*. Budapest: Akademiai Kiado.

Dutton, Edward. (2011). 'The Culture Shock of St Patrick.' *Estudios Irlandeses: Spanish Journal of Irish Studies,* 6.

Dutton, Edward. (Forthcoming). *Saving a Symbol in Social Anthropology: Why Libertarians Should Care About Culture Shock*. London: Libertarian Alliance.

Findlay, A. M.; F. L. N. Li, A. J. Jowett and R. Skeldon. (1996). 'Skilled International Migration and the Global City: A Study of Expatriates in Hong Kong.' *Transactions of the Institute of British Geographers,* 21:1.

Freeman, Derek. (1983). *Margaret Mead and Samoa: The Making and Unmaking of an Anthropological Myth*. Harvard University Press.

Furnham, Adrian and Bochner, Stephen. (1986). *Culture Shock: Psychological Reactions to Unfamiliar Environments,* London: Methuen and Co. Ltd.

Furnham, Adrian and Bochner, Stephen. (1982). 'Social difficulty in a foreign culture: An empirical analysis' in Stephen Bochner, (ed.), *Cultures in Contact: Studies in Cross-Cultural Interaction,* Oxford: Pergamon.

Goldstein, David. (2006). *Adrenaline and the Inner World: An Introduction to Scientific Integrative Medicine*. Baltimore: John Hopkins University Press.

Gil-White, F. J. (2001). 'Are ethnic groups biological species to the human brain? Essentialism in our cognition of some social categories.' *Current Anthropology,* 42:4.

Greenberg, L. (1979). 'Genetic component of bee odor in kin recognition.' *Science* 206: 1095–7.

Gu, Quing. (2009). 'Maturity and Interculturality: Chinese Students' Experiences in UK Higher Education.' *European Journal of Education*, 44: 1.

Gullahorn John and Gullahorn, Jeanne. (1963) 'An Extension of the U-Curve Hypothesis.' *Social Issues,* 19: 3.

Hamilton, William D. (1964). 'The genetical evolution of social behaviour: I and II'. *Journal of Theoretical Biology,* 7: 1–52.

Harner, Michael. (1996). 'Concluding Discussion: The Anthropologist as Healer.' *Anthropological Quarterly,* 69: 3.

Hastrup, Kirsten. (1990). 'The Ethnographic Present: A Reinvention.' *Current Anthropology,* 5: 1.

Hart, A. J., P. J. Whalen, L. M. Shin, S. C. McInerney, H. Fischer and S. L. Rauch. (2000). 'Differential response in the human amygdala to racial outgroup vs ingroup face stimuli.' *Neuro-Report,* 11:11.

Hauber, Mark E. and Paul W. Sherman. (2001). 'Self-referent phenotype matching: theoretical considerations and empirical evidence.' *Trends in Neuroscience* 24(10): 609–16.

Hirschfield, Lawrence A. (1996). *Race in the Making: Cognition, Culture, and the Child's Construction of Human Kinds*. Cambridge, MA: MIT Press.

Hogan, Robert. (2007). *Personality and the Fate of Organisations*. Mahwah, NJ: Lawrence Erlbaum.

Holmes, Prue. (2005). 'Ethnic Chinese Students' Communication with Cultural Others in a New Zealand University.' *Communication and Education,* 54:4.

Irwin, Rachael. (2007). 'Culture shock: negotiating feelings in the field.' *Anthropology Matters,* 9:1.http://www.anthropologymatters.com/index.php?journal=anth_matters&page=article&op=view&path%5B%5D=64&path%5B%5D=123

Jokikokko, Katri. (2009). 'The role of significant others in the intercultural learning of teachers.' *Journal of Research in International Education,* 8:2.

Kuznar, Lawrence. (199 7). *Reclaiming a Scientific Anthropology.* Walnut Creek: AltaMira.

Le Doux, J. E. (1996). *The Emotional Brain*. New York: Simon and Schuster.

Lindau, M., O. Almkvist and A. H. Mohammed. (2010). 'Learning and Memory, Effects of Stress on' in George Fink, (ed.), *Stress Consequences: Mental, Neurological and Socioeconomic*. Oxford: Academic Press.

Lumsden, Charles and Wilson, Edward O. (1981). *Genes, Mind and Culture: The Co-Evolutionary Process*. Cambridge: Harvard University Press.

Lynn, Richard. (1971). *An Introduction to the Study of Personality*. London: MacMillan.

Lynn, Richard and Vanhanen, Tatu, (2002), *IQ and the Wealth of Nations,* Westport: Greenwood.

Marx, Elisabeth. (2001). *Breaking Through Culture Shock*. Yarmouth, Maine: Intercultural Press.

Mead, Margaret. (1928). *Coming of Age in Samoa: A Psychological Study of Primitive Youth for Western Civilization*. London: Penguin.

Messner, Ellen. (1993). 'Anthropology and Human Rights.' *Annual Review of Anthropology,* 22.

Myles, Johanne and Liying Cheng. (2003). 'The Social and Cultural Life on Non-Native-English Speaking International Graduate Students at a Canadian University.' *Journal of English for Academic Purposes,* 2:3.

Nagata, Adair Linn. (2004). 'Promoting Self-Reflexivity in Intercultural Education.' *Journal of Intercultural Communication* (Japan), 8.
http://www.humiliationstudies.org/documents/NagataSelfreflexivity.pdf

Nowack, R. and R. Weiland. (1998). 'Culture Shock Coming Undone: Social Selection and the International Student Sojourn.' Society for Australasian Social Psychology. Christchurch, New Zealand.

Oberg, Kalervo. (1960). 'Culture Shock: Adjustment to New Cultural Environments.' *Practical Anthropology* 7.

Oberg, Kalervo. 1954. 'Culture Shock.' Presentation to the Women's Club of Rio De Janeiro, Brazil, August 3 1954. http://www.smcm.edu/Academics/internationaled/Pdf/cultureshockarticle.pdf

O'Donohue, William and Noll, James. (1995). 'Is behaviourism false because there is no such thing as conditioning? Popper and Skinner on Learning.' *New Ideas in Psychology,* 13: 1.

Paige, R. Michael. (1993). *Education for Intercultural Experience*. London: Intercultural Press.

Pinker, Steven. (2002). *The Blank Slate: the Modern Denial of Human Nature*. New York: Viking.

Popper, Karl and Eccles, John. (1984). *The Self and Its Brain*. London: Routledge.

Popper, Karl. (1963). *Conjectures and Refutations: The Growth of Scientific Knowledge*. London: Routledge, Kegan and Paul.

Resnik, Julia. (2009). 'Multicultural Education – Good for Business but Not for the State? The IB Curriculum and Global Capitalism.' *British Journal of Educational Studies,* 57: 3.

Rushton, J. Philippe. (1986). 'Gene – culture coevolution and genetic similarity theory: Implications for ideology, ethnic nepotism, and geopolitics.' *Politics and the Life Sciences* 4(2): 144–8.

Rushton, J. Philippe. (1989). 'Genetic similarity in male friendships.' *Ethology and Sociobiology* 10(5): 361–73.

Rushton, J. Philippe. (2000). *Race, Evolution and Behaviour,* Port Huron: Charles Darwin Research Institute.

Rushton, J. Philippe. (2004). 'Genetic and environmental contributions to prosocial attitudes: a twin study of social responsibility.' *Proceedings of the Royal Society of London, B* 271: 2583–5.

Rushton, J. Philippe. (2005). 'Ethnic nationalism, evolutionary psychology and Genetic Similarity Theory.' *Nations and Nationalism,* 11:4: 489 – 507.

Rushton, J. Philippe and Trudy A. Bons. (2005). 'Mate choice and friendship in twins: evidence for genetic similarity.' *Psychological Science* 16(7): 555–9.

Rushton, J. Philippe, Robin J. H. Russell and Pamela A. Wells. (1984). 'Genetic similarity theory: beyond kin selection.' *Behavior Genetics* 14: 179–93.

Russell, Robin J. H and Pamela A. Wells. (1991). 'Personality similarity and quality of marriage.' *Personality and Individual Differences* 12: 406–12.

Russell, Robin J. H., Pamela A. Wells and J. Philippe Rushton. (1985). 'Evidence for genetic similarity detection in human marriage.' *Ethology and Sociobiology* 6(3): 183–87.

Salter, Frank. (2007). *On Genetic Interests: Family, Ethny and Humanity in an Age of Mass Migration*. New Brunswick: Transaction Publishers.

Samovar, Larry, Richard Porter and Edwin McDaniel. (2010). *Communication Between Cultures,* Boston: Wordsworth.

Segerstråle, Ullica. (2000). *Defenders of the Truth: The Sociobiology Debate*. Oxford: Oxford University Press.

Shaules, Joseph. (2007). *Deep Culture: The Hidden Challenges of Global Living*. Clevedon: Multilingual Matters.

Staddon, John. (2001). *The New Behaviorism: Mind, Mechanism and Society*. Philadelphia: Psychology Press.

Stier, Jonas. (2006). 'Internationalisation, intercultural communication and intercultural competence.' *Journal of Intercultural Communication,* 11. http://www.immi.se/intercultural/nr11/stier.pdf

Tedick, Diane. (2009). 'K12 Language Teacher Perception: Problems and Possibilities.' *Modern Language Journal,* 93: 3.

Teng, Loretta. (2005). 'In a Cultural No-Man's Land – or how long does culture shock last?' *Journal of Intercultural Communication,* 10. http://www.immi.se/intercultural/nr10/tange.htm

Thiagaraian, K. M. (1971). 'Cross-Cultural Training for Overseas Management.' *Management International Review,* 11: 4/5.

Wagner, Roy. (1981). *The Invention of Culture*. Chicago: University of Chicago Press.

Ward, Colleen, Stephen Bochner and Adrian Furnham. (2001). *The Psychology of Culture Shock*. Hove: Routledge.

Ward, Martha. (1999). 'Managing Student Culture and Culture Shock: A Case From European Tirol.' *Anthropology and Education Quarterly,* 30: 2.

Wilson, Edward O. (1975). *Sociobiology: the New Synthesis*. Cambridge, MA: Harvard University Press.

Wilson, Edward O. (1998). *Consilience: the Unity of Knowledge*. New York: Knopf.

Wiseman, H. (1997). 'Far away from home: The loneliness experience of overseas students.' *Journal of Social and Clinical Psychology,* 16: 277-298.

Wolf, Patricia. (2010). *Brain Matters: Translating Research into Classroom Practice*. Napa, CA: ASCD.

Zuckerman, Marvin. (2005). *Psychobiology of Personality*. Cambridge: Cambridge University Press.

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