

Ethnolinguistic vitality and intergroup processes¹

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Abstract

The paper argues that ethnolinguistic vitality depends on four crucial social psychological factors: perceived strength differential, intergroup distance, utilitarianism and intergroup discordance. The influence of these factors on the vitality of subordinate and dominant groups is outlined. It is proposed that the vitality of both types of groups could be measured on the same scale. The low end of this scale indicates group members' disposition to dissociate themselves from the in-group's cultural values and practices. The high end indicates a perception of cultural distinctiveness, superiority, closedness and derogation of out-groups, i.e. high level of ethnocentrism. A theoretical model is proposed explicating how the interaction of vitality profiles of the dominant and subordinate groups leads to different acculturation orientations of subordinate groups (assimilation, integration, segregation, or marginalisation).

Keywords: ethnolinguistic vitality, acculturation, language shift, ethnocentrism, interethnic processes

1. Introduction

The 21st century is believed to be the century when 50 to 90 percent of languages currently spoken will cease to exist (Krauss 1992; Crystal 2000). In many cases, the immediate and inevitable loss is so acute that documentation is seen as the only action left to save languages from total disappearance, because securing normal transmission as a living practice already appears impossible.

Although the pessimistic forecasts of the speed of the extinction of languages may well be accurate, this need not be the inevitable outcome for all endangered languages: there are cases where one small language

is disappearing through shift while another, under apparently similar conditions, continues to be used and inter-generationally transmitted (see Harris Russell 2001). This suggests that the sustainability of a small language does not depend entirely on the size of the community or on external conditions beyond the control of the community and language revitalisation activists; sustainability also depends on the disposition and attitudes of the speech community. If this is so, there must be opportunities to improve the sustainability of endangered languages without an impossible attempt to restore the whole old ecology in which they were sustainable.

To do so requires precise knowledge of the social psychological processes that make a speech community (or in fact any ethnic group) feel and act as a collective entity. This property is called ethnolinguistic vitality (see Giles, Bourhis & Taylor 1977), and it is, to a large extent, constructed discursively (Giles & Johnson 1987; Harwood, Giles & Bourhis 1994; Ehala 2005, 2010). Although vitality is socially constructed within the speech community, it is not entirely a group internal phenomenon, but is also influenced by the attitudes of the majority group (Bourhis *et al.* 1997). The main goal of this paper is to specify how different intergroup processes, such as assimilation, integration and segregation depend on the vitality profiles of the minority and majority groups that are in contact.

The second section outlines the notion of ethnolinguistic vitality and gives an overview of the previous theories that have attempted to define its role in shaping intergroup processes. Although the importance of minority vitality and dominant group attitudes to intergroup processes is recognised, no theory has yet developed that explains intergroup processes as the relational outcome of the vitalities of both the minority and the majority group. The third section proposes such a theory, based on the ethnolinguistic vitality model developed by Ehala (2005, 2009 & 2010). The section outlines how vitality factors – perceived strength differential, intergroup discordance, intergroup distance and utilitarianism – shape minority and majority groups' ability to act as a collective entity. The fourth section refines the Interactive Acculturation Model proposed by Bourhis *et al.* (1997), by specifying how different combinations of vitality profiles lead to different types of intergroup processes.

2. Overview of previous research

Ethnolinguistic vitality is what 'makes a group likely to behave as a distinctive and active collective entity in intergroup situations' (Giles *et al.* 1977: 308). As argued in Ehala (2010), vitality manifests itself as group members' readiness to participate in collective action, and this

readiness is created by a shared understanding of the world, of the group and of one's relations to both. In a sense, vitality is based on what Bourdieu (1991: 170) calls symbolic power – the power of 'making people see and believe, of conforming or transforming the vision of the world and, thereby, action on the world ... by virtue of the specific effect of mobilization ... capable of producing real effects without apparent expenditure of energy'. Undeniably, this state of mobilisation is, to a large extent, based on a shared perception of the intergroup setting in which the group is involved.

The connection between the vitality perceptions of dominant and minority groups has been discussed in a number of previous studies of ethnolinguistic vitality. For example, Harwood, Giles & Bourhis (1994) outlined four possible types of intergroup vitality profiles. The first type they called 'perceptual distortions in favor of ingroup vitality'. In this profile both the minority and majority agree that the majority vitality is higher, but the minority group perceives the vitality difference between groups to be less than the majority does. Studies have shown that such a pattern occurs between Greek- and Anglo-Australians (Giles, Rosenthal & Young 1985), Italian- and English-Canadians (Bourhis & Sachdev 1984) and Arab- and Jewish-Israelis (Kraemer & Olshtain 1989). This pattern suggests that the groups are well established and distinct and that integrative or assimilative tendencies are discouraged. It would suggest good sustainability for the minority group.

The other pattern was called 'perceptual distortions in favor of outgroup vitality'. In this case, the minority perceives the vitality difference between its own group and the dominant outgroup to be larger than perceived by the dominant majority. This pattern is characteristic of first generation Chinese immigrants in London and Toronto, as well as for germanophone students in francophone Switzerland (Sachdev *et al.* 1987; 1990; Young, Bell & Giles 1988). This pattern shows typical low self-esteem among first generation immigrants, who often seek a way to assimilate to the dominant group, if possible.

The third and fourth patterns show 'nonconsensual vitality perceptions' (Harwood *et al.* 1994). Both of these patterns seem to indicate the situation of identity threat. In the case where the minority group assesses its vitality to be higher than that of the majority, it feels that its identity is being threatened by the majority and, in order to defend it, a shared perception of superiority is constructed. In a case in which the majority assesses that the minority has higher vitality than their own group, but the minority considers the majority to have higher vitality, the groups are unsure about their intergroup relationship, and the dominance relationship is open to debate. In fact, such a pattern has been attested to in Pierson *et al.* (1987), who studied the vitality perceptions of Western

and Chinese students in Hong Kong during the negotiations over the territory's future.

These results clearly indicate that intergroup processes are related to vitality perceptions, and that they are constructed relationally in an intergroup contact situation. Based on this rationale, the Interactive Acculturation Model (IAM) was proposed by Bourhis *et al.* (1997). According to this model, 'through intercultural contact, dominant host majority members do influence the acculturation strategies of immigrant group members, who in turn may also affect the orientations of the host majority' (Bourhis *et al.* 1997: 375). IAM is based on Berry's (1974, 1997) bi-dimensional acculturation model, which proposes a typology of four immigrant acculturation orientations: integration, assimilation, separation/segregation and marginalisation. Integration is the orientation in which the immigrant group adopts the core elements of the host culture, maintaining their heritage culture; assimilation is the orientation in which the host culture is adopted and the heritage culture abandoned; segregation is when the heritage culture is maintained, but no host society culture is adopted; marginalisation occurs when heritage culture is abandoned, but host culture is rejected.

IAM states that the outcomes of intergroup relations are influenced by the acculturation orientations that both the dominant group and a particular immigrant group have in the context of this particular intergroup setting. Bourhis *et al.* (1997) draw a matrix that maps the dominant group orientations to the immigrant group orientations, deriving a 25-member typology. Each type contrasts the attitudes of the immigrants to the attitudes of the dominant group by comparing the answers to two questions: 1) Should immigrants adopt the values of the host culture? and 2) Should they maintain their heritage culture? This leads to three logically possible combinations: consensual (both groups agree on both questions), problematic (groups agree on one question) or conflictual (disagreement on both questions).

As often happens with such matrices, this leads to a large number of logical possibilities that may not correspond to reality very closely and need not all be necessary. Take, for example the situation where the host society would prefer that immigrants retain their culture, but they prefer to assimilate. The matrix predicts that this would be a problematic outcome, but it is fairly clear that the situation is far less problematic (if at all) than the situation in which the host society prefers that immigrants assimilate, but they are oriented towards marginalisation. In addition, the question may be raised as to whether marginalisation is ever an acculturation attitude that immigrants choose freely, or whether it is imposed on them by the exclusivist orientation of the dominant group.

Despite this criticism, the concept of interactive acculturation is a strong one, and the authors make several useful generalisations from its principles. First, they suggest that state policies aimed at integration are more likely to yield positive relational outcomes than assimilative policies, while 'segregationist and exclusionist policies reflecting the ethnist ideology are likely to foster conflictual relational outcomes' (Bourhis *et al.* 1997: 384). They also state that, despite state policies, there could be sections of the host society whose acculturation orientations favour segregation or exclusion and this would have an interactive effect on the orientations of the minority, too. The authors also state that the relative vitality of the groups is likely to influence the acculturation orientation and inter-ethnic processes, predicting that low vitality groups are more vulnerable than medium vitality immigrant groups.

To summarise, IAM leads to, at least, the following generalisations: 1) although state policies influence intergroup relations, the orientations of the majority have a considerable influence on the relational outcomes of acculturation; 2) the openness of the host society is the main factor that leads to integration and assimilation, while closedness leads to segregation and/or marginalisation; 3) the vitality of the minority group is what influences the relational outcome – low vitality groups tend to assimilate or marginalise, while medium vitality groups become integrated or segregated.

Although the insight of IAM is valuable, to date there has been no theoretical treatment of how the openness of the host society relates to the concept of vitality. This paper argues that the intergroup processes described and predicted by IAM result from the impact of the very same social psychological factors that in Ehala (2010) have been claimed to determine ethnolinguistic vitality. In other words, intergroup processes are shaped, to a large extent, by the vitality of the groups that are in contact. The next section will elaborate the model of vitality proposed by Ehala (2010) for majority groups in order to use the concept of vitality in predicting the relational outcomes of intergroup contact.

3. The impact of vitality factors on dominant and subordinate groups

The approach taken here for ethnolinguistic vitality is based on the V-model developed in Ehala (2005, 2009, 2010), which differs, to some extent, from traditional accounts (Giles *et al.* 1977; Bourhis, Giles & Rosenthal 1981; Giles & Johnson 1987; Harwood *et al.* 1994; Abrams, Barker & Giles 2009). According to the V-model, there are four factors that affect the vitality of a group: 1) perceived strength differential (PSD), 2) intergroup discordance (D), 3) intergroup distance (r) and 4) utilitari-

anism (U). These factors influence the vitality (V) of both the subordinate and the dominant groups.

Since the V-model is based on group members' perceptions and other shared dispositions, it is a theory of what traditionally has been called subjective vitality. As a group's perception of its standing relative to other groups could be 'distorted' (see Harwood *et al.* 1994), it must not be confused with actual relations of dominance and power. For example, a subordinate group may feel itself to be stronger than the dominant group, but this does not make it automatically the dominant group. Therefore, the terms *dominant group* and *subordinate group*, which will be used throughout this article, refer to the actual existing power relations between the groups, which do not necessarily coincide with the notions of high and low vitality. However, as will be argued later, such 'distortions' could give rise to a perception of intergroup instability, which may lead to collective action and a subsequent renegotiation of intergroup relations.

3.1 *Perceived strength differential*

Most researchers agree that the driving force behind language shift is power differences between dominant and subordinate groups. Edwards (2006: 5) notes that 'the attraction that a "larger" language has for "small"-language speakers has nothing to do with intrinsic linguistic qualities, and everything to do with perceptions of power and its concomitant features: status, prestige, economic clout, cultural dominance, elevated levels of education and income, opportunities for social and psychological mobility, and so on'. In a sense, the stronger, more prestigious, more powerful and more culturally attractive the outgroup is perceived to be in comparison with the ingroup, the stronger the motivation to be associated with the outgroup. If the groups are perceived as equally powerful, or the ingroup is perceived as stronger, there is little to gain from language and identity shift. Thus, provided that the influence of all other factors is constant, the vitality (V) of the group would depend on the differential of strengths (S_1 and S_2) of the ingroup (G_1) and outgroup (G_2) as presented in (1).

$$(1) \quad V = \text{PSD} = S_1 - S_2$$

When S_1 is smaller than S_2 , PSD has a negative value, which indicates that the group members have a low potential to act as a group; the more this is true, the larger the negative value of PSD. Such a disposition is characteristic of subordinate groups and it could be a catalysing factor for a possible language and identity shift. When the PSD value is close

to 0 or higher, the group can be considered vital. It could be argued that the higher the positive value of PSD, i.e. the more superior the group feels in comparison with its out-group, the more likely its members are to act in-group terms, but as will be argued later, the relationship is hardly that straightforward.

In a typical majority minority-situation, the PSD of a dominant group (PSD_d) would be positive, as its members would perceive their in-group strength (S_d) to be higher than the subordinate group strength (S_s). Similarly, the PSD of a subordinate group (PSD_s) is typically a negative number, as the members of the subordinate group would perceive their in-group strength (S_s) to be lower than the strength of the dominant out-group (S_d). Thus, the dominant group vitality (V_d) and subordinate group vitality (V_s) can be calculated as in (2a) and (2b):

$$(2) \quad \begin{array}{l} \text{a} \quad V_d = PSD_d = S_d - S_s \\ \text{b} \quad V_s = PSD_s = S_s - S_d \end{array}$$

However, the value of PSD does not determine which group is dominant and which is subordinate. It expresses only how a group perceives its standing relative to the other group. As such a perception can either enhance or hinder group members' readiness to take part in collective action, it is a component of V .

3.2 *Intergroup discordance*

Intergroup discordance (D) expresses the perceived illegitimacy of the intergroup power relations, as well as distrust towards the out-group. Tajfel & Turner (1979) argue that if the low status of the in-group is perceived to be legitimate, the members of the group are more likely to abandon their membership. In such situations, the subordinate group members may even exhibit out-group favouritism (Batalha, Akrami & Ekehammar 2007), which encourages even greater identity and language shift. On the other hand, if the situation is perceived to be illegitimate, the members will be more prone to fight collectively for improvement.

For dominant groups, the relationship between legitimacy and distrust has the reverse relationship: the more legitimate the low status of the subordinate group is perceived to be, the more likely the members of the dominant group are to feel aversion towards this out-group. The more illegitimate the status difference perceived by the dominant group members, the more likely they are to show sympathy towards this group. The reverse correlation between legitimacy and out-group distrust in the perception of dominant and subordinate groups is called ideological asymmetry (Levin *et al.* 1998).

For both the subordinate and dominant groups, D and PSD combine to lead to the perception of stability (STB), as in (3a) and (3b):

$$(3) \quad \begin{array}{l} \text{a} \quad \text{STB}_d = (S_d - S_s) + D \\ \text{b} \quad \text{STB}_s = (S_s - S_d) + D \end{array}$$

For a dominant group, STB is lowest when PSD_d is small or even negative and the level of discordance is low. For a subordinate group, STB is lowest when PSD_s is close to zero or even positive and the D level is high. The interaction is best illustrated by a hypothetical example.

Let us assume a situation in which there is a small dominant group and a large subordinate group, something similar to the historical situation in the South African Republic. The stability of such an inter-ethnic situation depends, to a large extent, on the perceived stability of the situation by the participating groups. Let us consider two prototypical states: that of a high perceived stability at time point 1 and a low perceived stability at time point 2.

3.2.1 Subordinate group high perceived stability

At time point 1, the subordinate group perceives itself to be relatively weak ($S_s = 0.2$ on a scale from 0 to 1), whereas it perceives the small dominant group to be relatively strong ($S_d = 0.8$). The power of the dominant group is perceived to be legitimate and there is even a mild degree of out-group favouritism. Thus, the discordance level is low ($D = -0.1$, on a scale from -0.25 to 0.75). This would give an STB_s value of -0.7 , as presented in (4). For a subordinate group, the lower the negative value of STB_s , the higher the perceived stability. As stability is a component of V, the more stable the subordinate group perceives the inter-ethnic situation to be, the less likely they are to act collectively, and thus the lower their vitality.

$$(4) \quad V_s = \text{STB}_s = (0.2 - 0.8) - 0.1 = -0.7$$

3.2.2 Dominant group high perceived stability

Let us imagine the perceptions of the dominant group members at time point 1. Firmly in power, they have a clear perception of their strength, because of their technological, cultural and military supremacy ($S_d = 0.8$), but they might assess the strength of the subordinate group to be somewhat higher ($S_s = 0.4$) than the subordinate group itself does. Having a strong feeling of the legitimacy of their power, accompanied by a mild feeling of aversion toward the subordinate group, their discordance

could be characterised as medium ($D = 0.3$). For a dominant group, the higher the value of STB, the more stable the intergroup setting is perceived to be. In this case, it is 0.7 as in (5), which is relatively high (the extreme, but unlikely value of the STB, given these scales, could be 1.75). A high STB value would also signify that the group is likely to engage in collective action to ensure their apparently justified privileges and power. A terrifying example of this is provided by the Nazis, whose perception of strength and supremacy combined with high discordance towards out-groups led to the systematic and institutionalised extermination of the out-groups. Thus, high STB_d would indicate the dominant group's high vitality.

$$(5) \quad V_d = STB_d = (0.8 - 0.4) + 0.3 = 0.7$$

3.2.3 Subordinate group low perceived stability

Let us imagine that after several decades, at time point 2, this subordinate group starts to perceive itself to be considerably stronger ($S_s = 0.5$), whereas it perceives the dominant group to be slightly less strong than before ($S_d = 0.7$). The perception of legitimacy has changed a lot, as the group has become aware of the unjustness of their situation, which is also accompanied by a considerable aversion towards the dominant group, leading to a noticeable level of discordance ($D = 0.3$). This would give an STB_s value of 0.1, as presented in (6). For a subordinate group, if the value of STB is higher than 0, the situation is perceived to be unstable, because the group has both the motivation (injustice) and the feeling of strength to challenge the intergroup power relations. For a subordinate group, such a perception is favourable for collective action, so the positive V value signifies the (relatively) high vitality of this subordinate group.

$$(6) \quad V_s = STB_s = (0.5 - 0.7) + 0.3 = 0.1$$

3.2.4 Dominant group low perceived stability

It is likely that, at time point 2, the strengthening of the subordinate group is perceived by the dominant group, which starts to see the two groups as more equal in strength ($S_d = 0.7$ and $S_s = 0.6$). At this point, the dominant group may start to reinforce the sense of legitimacy of their power, which would inevitably also increase the discordance level, but occasionally (as in the case of the South African Republic and the dissolution of the Soviet Union) an understanding grows that the power relations are not entirely just, which is manifested in a low discordance level ($D_d = 0.0$). This would give an STB value of 0.1 as in (7).

$$(7) \quad V_d = STB_d = (0.7 - 0.6) + 0 = 0.1$$

Such a low value indicates that there is some readiness for negotiation regarding the existing power relations, which also means that the members of the dominant group are unlikely to engage in collective action against the subordinate group. This disposition also signifies a (relatively) low vitality for the dominant group, although this does not mean that the group is going to assimilate. It is just less likely to fight for its alleged supremacy.

3.3 *Intergroup distance*

Although the high perceived stability might provide motivation for the subordinate group members to become associated with the dominant group, the actual shifting behaviour also depends on the intergroup distance (r) between the groups. Intergroup distance is the sum of racial, linguistic, religious and cultural differences between the two groups, as perceived by the group members. For example, a Muslim community speaking an African language and living in segregation in the suburb of a European city would perceive a fairly large distance from the dominant white Christian majority. On the other hand, a regional language community, such as speakers of Low German or Occitan, would perceive a considerably smaller distance from their respective standard-language-speaking populations, as both are likely to be racially and culturally similar to the majority.

The larger the intergroup distance, the more difficult it will be to shift one's group membership. Thus, all else being equal, the higher the vitality of the group, the larger the perceived distance between the groups, i.e. the more distinct they appear. As argued above, the perceived stability ($STB = ((S_1 - S_2) + D)$) is a component of vitality and, thus, integrating it to the formula together with r , the vitality for the subordinate and dominant groups would be as presented in (8a) and (8b)

$$(8) \quad \begin{array}{l} \text{a} \quad V_d = r((S_d - S_s) + D) \\ \text{b} \quad V_s = ((S_s - S_d) + D) / r \end{array}$$

Let the minimal value for r be 1. This would correspond to the minimal degree of perceived distinctiveness. In such a case, r has no impact on V , as either multiplying (as in [8a]) or dividing (as in [8b]) the other factors by 1 does not change the value of V . When r is larger than 1, it starts to increase the V value for the dominant group, as in (8a), and reduces the negative V value for the subordinate group, as in (8b).² Thus, the larger r is, the more it enhances vitality for both groups. In the case

of subordinate groups, a large r may prevent the group from assimilating; in the case of dominant groups, a high perception of group distinctiveness may also enhance the feeling of groupness and even ethnocentrism.

3.4 *Utilitarianism*

Each culture functions as an interplay of innovation and tradition. Both types of behaviour rely on distinctive value sets, called utilitarianism and traditionalism. Utilitarianism is a value system that underlies pragmatic and economically beneficial courses of action. Its basic principles are the following: 1) humans are defined as rational economic entities; 2) 'good' is defined as what will give the greatest happiness for the greatest number; and 3) values are established by statistical (i.e. quantitative) means (Scollon & Scollon 1995). The principles of the traditionalist value system are the logical opposite: 1) the essence of humanity is emotional; 2) the notion of 'good' is set by the moral authority; and 3) values are defined by tradition.

As all diversity, including cultural and linguistic diversity, has a clear economic cost, the utilitarian discourse encourages reduction of this diversity. Often, this means discarding education, TV programmes or literature in one's own language, as there is no need to duplicate these practices in two languages. This would mean that the more utilitarian the minority community, the more it would be disposed towards language and identity shift. The traditionalist value system, on the other hand, resists innovations and favours the maintenance of traditional linguistic and cultural practices, since they are valued as a part of identity. In the case of extreme traditionalism, even small linguistic communities, such as the Russian Orthodox Old-believers or Amish, have shown remarkable sustainability over the centuries.

Let us assume that utilitarianism and traditionalism form the two opposites on a single scale. In this case, the utilitarian end of the scale would reduce the vitality of a group, while the traditionalist end would enhance it. The middle point of the scale would represent a good balance between these two value systems, characteristic of many well-functioning societies. Let us assume that this middle point has the value of 1, the traditionalist end the value of 0 and the utilitarian end the value of 2. In this case we could formalise its impact on V as follows:

$$(9) \quad \begin{array}{l} \text{a} \quad V_d = r((S_d - S_s) + D) / U \\ \text{b} \quad V_s = U((S_s - S_d) + D) / r \end{array}$$

When the value of U is 1, its impact on overall vitality can be disregarded in both (9a) and (9b). This corresponds to a situation where

utilitarian and traditional values are well balanced in a group's shared value system. If the value of U is greater than 1, this leads to lower V values. If the value of U falls below 1, it starts to raise the V value. This is a correct prediction, as both the dominant and subordinate groups are more likely to act collectively if their members value the group and its norms.

4. The impact of vitality on intergroup processes

As argued by Bourhis *et al.* (1997), the language and identity shift of a subordinate group depends not only on its own vitality, but also on the attitudes of the dominant group. If the latter is not ready to accept the shifting minority members, this can hinder or prevent the shift, indirectly securing the maintenance of this minority, but also creating intergroup tensions. Interestingly, the same factors that influence the vitality of the minority group influence the openness of the majority group towards new members.

One would expect that, all else being equal, the dominant group would be more ready to include shifting minority members if the D level were low and the PSD were not large – in this case the subordinate out-group members are considered more or less equal and respected. In the case of large D values and large PSD, the minority members are too stigmatised to be readily accepted as in-group members.

Utilitarianism also affects the dominant group's readiness to accept shifting minority members. The more utilitarian the value system of the dominant group, the more open it will be to new members. Very traditional and conservative dominant groups are often quite exclusive in regard to admitting new members. Thus, one would expect that low U values would increase the closedness of the dominant group, whereas high U values would reduce it.

Intergroup distance would have the opposite effect: the larger the perceived intergroup distance between the dominant in-group and the minority out-group, the less likely it is that the dominant group would accept the shifting minority members. If the perceived distance is small, the willing minority members are more easily incorporated into the majority.

Looking at these relationships in the V formula for dominant groups, it becomes evident that the more open the dominant group is to accepting minority members as part of their in-group, the lower the value for V_d , as specified in (9a), repeated here as (10):

$$(10) \quad V_d = r((S_d - S_s) + D) / U$$

The reverse is also true: a dominant group with a high V_d would have a very conservative traditional value system, perceive the distance between the groups to be large, consider itself vastly superior to the subordinate group, and perceive the intergroup hierarchy to be absolutely legitimate.

This indicates that what a high V_d shows is not only the vitality of the dominant group but also its ethnocentrism and ethnic closedness. In such a way, the notion of vitality, which traditionally has been used only for minority groups, to measure their tendency to assimilate, could be expanded to form a continuum of groupness ranging from extreme low values, indicating a lack of willingness to be associated with this group, to extreme high values, when the group is perceived as distinct, superior, resistant to change and hostile to out-groups. Certainly, in this latter type of group, the individual members are under heavy social control, feel solidarity, and sense a strong outside threat, so that they are in a constant state of collective mobilisation. Metaphorically speaking, a group with a high V value could be considered to be a 'hot' group, whereas groups whose V values are low are 'cold'.

When groups with different 'temperatures' come into contact, different intergroup processes are likely to result, as shown in Table 1:

Table 1. *Interethnic processes as a function of dominant and subordinate group vitality.*

		Dominant group	
		$V_d > 0$	$V_d \approx 0$
ordinate group	$V_s \approx 0$	Segregation	Integration or separation
	$V_s < 0$	Marginalisation	Assimilation

As the V values are just summaries of quite a complex set of relations, their single numeric values are themselves not very informative with regard to the real acculturation processes that are underway in this particular intergroup situation. It is important to consider what the values for the main V factors (PSD, D , r and U) are. This could be summarised as follows:

- (11) a. Large PSD + small inter-group distance + low discordance + high utilitarianism = assimilation
- b. Large PSD + large inter-group distance and/or high discordance and/or low utilitarianism = segregation
- c. Small PSD + large inter-group distance and/or high discordance and/or low utilitarianism = separation
- d. Small PSD + small inter-group distance + low discordance + high utilitarianism = integration

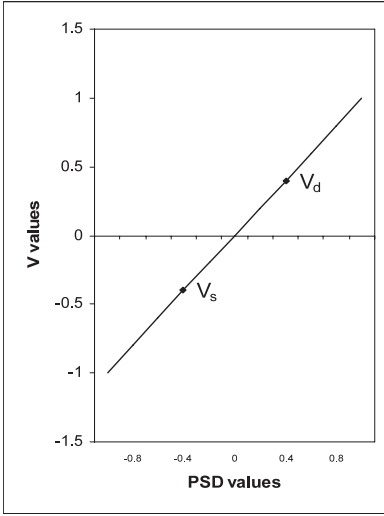


Figure 2. *Base line of dominant and minority group vitality.*

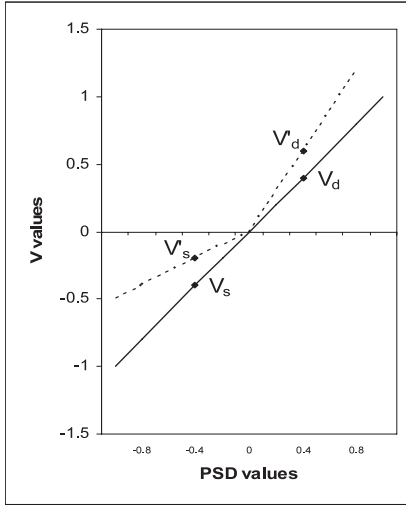
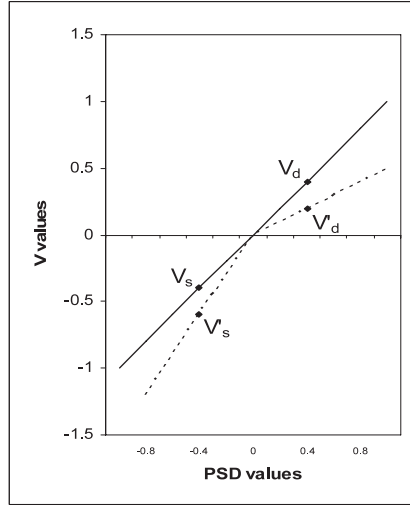
As the relationships are complex, the best way to grasp the effects of the vitality factors would be graphically, as illustrated below.

PSD is the feature that indicates the perceived strength of the in-group in respect to the particular out-group. If V depends only on PSD, the possible V values can be plotted on the line in Figure 2. In the case of undistorted perception, the values for subordinate group PSD would be below 0; and for the dominant group, they would be above zero. The points V_d and V_s here have just an illustrative function as representatives of the vitalities of two possible groups in an intergroup setting.

Adding the values of D , U and r to the PSD, the actual value of V is not on the base line specified in figure 2, but either above or below it, depending on the values of D , U and r .

In the case of low U , and both high r and D (when the groups are both very conservative and the intergroup distance and discordance are large), the most likely relational outcome for this particular intergroup situation is segregation. In this case, the actual vitality values (signified by V'_d and V'_s) rise above the base line (see Figure 3). The dotted line represents all other possible V values for this configuration of D , U and r .

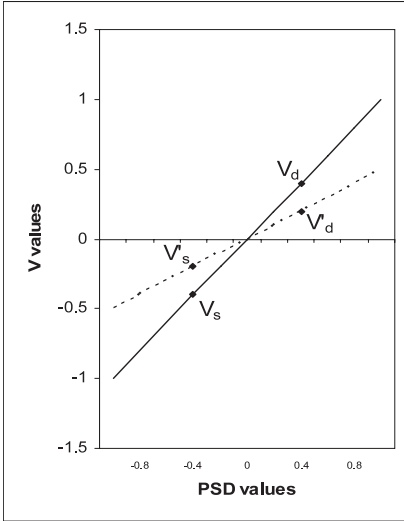
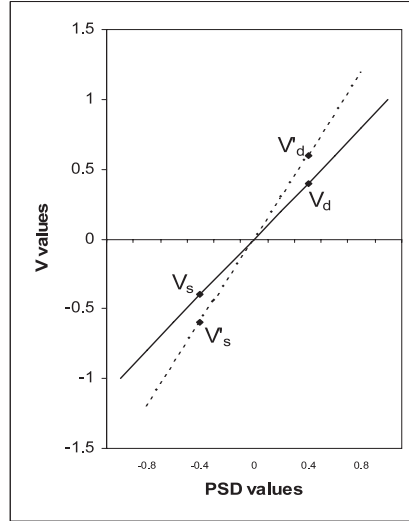
In the case where the U values are high and r and D values low, the groups have low discordance, utilitarian value systems, and they are culturally and racially close. This configuration would suggest assimilation as the relational outcome of acculturation orientations: both groups

Figure 3. *V* pattern for segregation.Figure 4. *V* pattern for assimilation.

are pragmatically minded, the intergroup distance is small and, all other factors being equal, it would be relatively easy to change group membership, as the former in-group members approve the motives (since they are utilitarian themselves) and the small intergroup distance also makes the shifters easily accepted by the utilitarian dominant group members. In this case, both V'_d and V'_s would be located below the base line (Figure 4). Again, the dotted line represents all possible *V* values given this particular combination of *C*, *U* and *r* values.

If the dominant group has high *U* values, and low *r* and *D* values and the minority has low *U* values, high *r* and possibly also a high *D*, the lines cross the base line as shown in Figure 5. In this case, the dominant group is pragmatic, respects the minority, considers it culturally close and may even admit that their low position is not entirely justified. The minority will, in turn, value its heritage culture (lower than average *U*), perceive itself to be culturally distinct from the dominant group (higher than average *r*) and is aware of the injustice in the inter-ethnic relationship. Thus, the majority would be ready to accommodate the needs of the minority, and the minority would be willing to maintain its heritage. The likely outcome of this configuration is integration or separation (see Figure 5).

Marginalisation is the likely outcome when the dominant group is very traditional and conservative, and perceives large discordance and distance from the minority (low *U*, high *D* and *r*), and the minority

Figure 5. *V* pattern for integration.Figure 6. *V* pattern for marginalisation.

group has low *D* and *U*, and high *r*. This means that the minority accepts its low status, and wishes to abandon its heritage culture, but the high intergroup distance does not allow it to assimilate to the majority. The situation would, in the most prototypical case, be represented as in Figure 6.

When the *V* factors are operationalised and measured through a survey, the graphic method is very useful for analysing the intergroup setting: the lines drawn through V_d and V_s to the 0-point characterise the type of the relationship, while the distance between the points on the *x*-scale characterises the perceived stability of the situation.

5. Conclusion

It is widely known that the economic, social and cultural diversity of societies poses a major methodological problem for comparative studies to obtain viable generalisations. This paper presents a formal model that can be used to obtain directly comparable data from diverse inter-ethnic contact situations.

It was hypothesised that vitality depends on four crucial social psychological factors: perceived strength differential, intergroup distance, utilitarianism and intergroup discordance. These factors affect not only the vitality of minority groups, but also the dominant groups. Two mathematical formulas were suggested that explained the relations between

these factors in the case of subordinate and dominant groups. Further, it was shown how the four minority acculturation orientations can be derived from the vitality profiles of the groups. A graphic analysis method was presented that makes it possible to interpret the mathematical outcome of the formulas.

Theoretically, the mathematical V-model offers precise hypotheses about the interaction of these factors. This makes the model falsifiable through empirical testing, and permits systematic and cumulative refinement of the theory through comparative studies. The V-model is now fully operational (Ehala 2009). It has passed its first empirical test in measuring the vitality of the Võro people of southern Estonia (Ehala & Niglas 2007), and is being further applied to Estonian–Russian intergroup settings (Ehala & Zabrodskaia forthcoming). As the empirical evidence accumulates, the premises of the theory can be tested and the mathematical model fine-tuned.

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Notes

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2. Note that both multiplying a positive value by another value (such as r), as well as dividing a negative value by the same value make the sum larger in both cases. Provided that the larger r values enhance vitality, it must multiply the $(PSD + D)$ when this is a positive value and divide it when it is a negative value. If a subordinate group has a positive $(PSD + D)$ value, it needs to be multiplied by r , not divided, as suggested in (8b).

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