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ABSTRACT

A study investigated Finnish high school students' second language learning motivation, attitudes, self-concepts, inhibitions, and selected personality traits. The study attempted to learn more about the nature, content, and functions of the "affective filter" in foreign language learning. A variety of relationships between these factors were found, and a number of "filter" and "non-filter" learner types were distinguished. The study's design, results, and implications for language teaching and for future research efforts are discussed. A bibliography of over 60 references is included. (MSE)

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THE AFFECTIVE FILTER IN FOREIGN LANGUAGE LEARNING AND TEACHING

Report 2: A validation study of filtering factors with a focus on the learner's FL self-concept

by

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Abstract. The study was undertaken to give theoretical and empirical content to the concept of 'affective filter'. The theory (largely discussed in Report 1, q.v.) posited 'filtering' of several 'levels' valid in formal FL learning. The learner's foreign language self concept (FL SC), a specialized part of his overall hierarchical system of self-notions, was assumed to form the core of the filter.

The Ss were 541 Finnish basic (= comprehensive) school ninth-graders, aged 15-16, in city and countryside schools in two provinces, Central Finland and North Karelia. They had studied English as their first FL for 6,5 years. A questionnaire was used to test their motivation, various attitudes relevant in the learning situation, FL SCs plus subsumed inhibitions, and some of their personality traits. The measuring instrument showed high internal consistency and test-retest reliability, and distributed the empirical data logically.

In an examination of the distinctive features of the filter areas, the theoretical categories stood out distinctly. Their filtering influence was revealed in a number of analyses. A circle of influence, from achievement to the FL SC and inhibitions, from these via target language and learning situation related attitudes to motivation, and finally from motivation to achievement was established. A number of recursive relations between variables operative in the learning situation came up. Trait anxiety and alienation appeared as affected remarkably by FL SC variables. Some determinants affecting filter development were examined. Finally, a number of 'filter' and 'non-filter' learner types were detected.

The main results were considered to approach national validity, and serve as basic research for continued research along the basic lines, and in various studies in other settings. Furthermore, it was argued that practicians in the field can profit from this investigation directly.

Descriptors: Filter, self-concept, motivation, attitudes, formal FL learning.

FOREWORD

This report gives an account of the validation stage of research into the affective factors involved in formal FL learning. The theoretical concepts and framework, the operationalization of said concepts, and the first pilot stage of research were discussed in Report 1. As regards theory, a review of the background ideas, and a brief representation of the framework adopted are given in this second report, introductory to the results.

Some considerations as to why filter research is important may be in order here. Beyond the general observation that knowing the learner's affective filter we may be able to release his cognitive powers, we should note that filter research (1) concerns millions of general school FL learners who often have great problems within the affective domain; conscious or unconscious, their mental blocks mostly remain an unsolved problem due to a lack of coping mechanisms. (2) The same is true of FL teachers, who may have similar problems, professionally or personally. (3) Researchers, again, need a clear framework and a solid set of basic results to use as a starting point for theory elaboration and research application to varied settings. For such reasons, this attempt at basic research into the affective domain in FL learning, particularly the filter with the foreign language self-concept as its core, was undertaken. For the benefit of further research and FL didactics, this Report 2 - like Report 1 - has been given a form partly resembling a manual.

The study reported upon here is the concluding stage of a project prepared in various ways over a period of several years (see Rep. 1). It is my contention that the results actually outline the FL learning situation in the school setting in a homogeneous educational system with considerable adequacy, and can therefore form a basis for further studies.

With an eye to further study in various forms and

settings, the report has been compiled with a special view on the replicability of the study, including translated samples of some central items of the measuring instrument. Similarly, brief explicatory comments are made concerning sampling, data collection, and research techniques. It is obvious that research in these areas is, as it were, underdeveloped, and the state of the art hardly satisfactory. This state of things will be improved more speedily if not every researcher is compelled to start from scratch. It is my sincere wish that this approach should give impetus to would-be researchers of affective factors, and help them in their enterprises.

The main stage of this study was made possible by a research grant from the Finnish Academy, which relieved me for a time from the daily routines as a teacher-educator. The Academy also supported the enterprise otherwise materially, and thus guaranteed possibilities of success: any eventual failure is mine. I am very grateful for this rare opportunity to concentrate on what every lover of knowledge desires to do: research.

In my undertakings I have received study help from many quarters. Professors Jouko Kari and Raimo Konttinen have discussed various points of research strategy, techniques, and sampling with me. Concerning automatic data processing and related issues, Mr Alvar Koppinen, MA, has always been prepared for reassuring talks. In some special problems, especially concerning LISREL techniques, Docent Eero Blåfield, PhD, gave a great deal of his time to the technical part of model construction, also helping my assistants generously. To all these supporters of this piece of work I am most grateful. The errors that possibly remain in it are mine.

The study group which formed round this scheme was a source of satisfaction. Ms Marja-Kaisa Pihko, MA, listened patiently to my theorizing and planning and read the manuscript in part and in whole: at all stages, she came up with valuable comments. Ms Mirja Räsänen, MA, worked very ably as a full-time research assistant on automatic data processing and various jobs at report compilation. Ms Anja Cabble, BA, helped with great ability with computer work. Mr Geoffrey

Jackson, MA, has corrected my English with his remarkable skill, which I learned to appreciate already while working on Report 1. I owe sincere thanks to all of these people.

My thanks are also due to my own department, the Department of Teacher Training, University of Jyväskylä, which has backed me fully with its facilities.

Like Report 1, this report is published in the Jyväskylä Cross-Language Studies. While thanking the Department of English at the University of Jyväskylä for this opportunity, I hope my work can help the readers of this series both home and abroad.

Lastly, I wish to dedicate my study to the Unknown FL Learner, wherever he or she is struggling with his/her emotional hindrances to optimal learning.

Jyväskylä, 25.11.1987

E.J.L.

(Abstract)
(FOREWORD)

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1. INTRODUCTION

In formal (school-type) FL learning, cognitive factors are considered of prime importance. Yet, affective factors often prove to be decisive: what is the benefit of cognitive ability and skills, if the learner is not willing to use them?

Historically, there have been various attempts to circumvent the mystical block that seems to stand in the way of good language learning. Modern theory has termed this block 'affective filter'; there have been lively discussions concerning it, dealing both with its general nature and with the single features that are supposed to make it up. Unfortunately, this interest has not been able to take us very far, either theoretically, or in the field of teaching practice.

In teaching, there are obvious modern attempts to answer the old question of how to break down the learner's apprehensions, hidden resistance, or whatever his 'block' might be composed of. Absolute confidence in the teacher- 'knower', found in more modern approaches than one, is a case in point; so is the use of classical music and yoga techniques. The big discovery - not exactly very novel - is that it is the whole person that learns: personality is thus brought into play.

Undoubtedly, this is all well and good. Music, for one, has worked wonders since the days of the Ancient Greeks, and the times of Saul and David. Similar observations can be made concerning other 'relaxing techniques' aiming at decreased emotional resistance and liberation of the learners' mental powers. For many reasons, however, it should also be asked, "Why not dissolve the 'block' rationally - as far as it is possible?" In point of fact, an analysis of maximal 'relaxed' activity will reveal very quickly that cognitive abilities are involved to a high degree - why not also make optimal use of them? A cognitive approach aiming at this leads us to a set of questions: What, really, is the filter? What are its

distinctive features? How does it function? What are the characteristics of the 'filter' type of learner? For a researcher, these questions take on urgent form: Define and identify the construct; reveal its structure and mechanisms; identify the 'patient'; do it all in a broad, holistic framework so as to get to grips with a 'whole person' in a real situation.

Such lines of thinking have led to this venture. Theoretical analyses of the issues, a pilot stage of research and the resulting, tentative hypotheses formation was reported previously (Report 1). In this report, a review of background ideas is presented in Chapter 2. In accordance with the holistic approach, it begins with a sketch of those broad theories contributing to the widest spheres of the theoretical framework, proceeding then to narrower spheres, and finally focusing on the filter. More specifically, the theoretical close-up discusses the theory and concept analysis of the filter in general and the foreign language self-concept (FL SC) in particular. Here, a number of hypotheses concerning both concepts are set out. The problems to be studied are collected in Chapter 3, to be answered, in a collective way, in sub-chapter 5.8. This is done in order to help the reader to form an overall picture of the many-faceted problem; a more rigorous research scheme might be in order were this a case of a 'field experiment' with a narrower scope.

Worthy of note in this connection is the extensive work done in the operationalization of the concepts and development of the measuring instrument reported previously (Rep. 1). Without it, the data collection stage could not have been as economical and the instrument as reliable (Ch. 4 in this report), nor the results as clear-cut as they proved to be (Ch. 5).

In the results section (Ch. 5), certain elements of interpretation creep in. This lies in the very nature of the method, and even in statistical methods such as factor analysis; furthermore, an early allusion to the meaning of the findings may be of help to researchers and practicians alike. The underlying principle of the research procedure, then, has

been to measure the phenomenon as exactly as possible, and to use the researcher's powers of understanding to the full measure available. Every attempt has been made, however, to avoid mixing facts with interpretation. Strict computational measures - e.g. LISREL - are used to rule out unwarranted inferences. The discussion proper, naturally, is collected and placed conventionally (Ch. 6).

By and large, this Validation Study aims at confirming a set of landmarks in the affective domain of FL learning, thus establishing the general build-up of the filter in the school setting. Such knowledge, again, may serve further research as well as immediate application.

2. THEORETICAL FRAMEWORK

2.1. Review of background ideas

The widest sphere included in the theoretical approach of this study concerns the school FL learning situation, with its connections to the surrounding society and the learner's 'life story': what we are concerned with here is the learner's physical and psychological 'life space' (consider K. Lewin, in Bigge 1968, 178-212). In that space, a number of forces are driving the subject towards the goal, but there are also many restraining forces blocking in the way. It is the negative forces of a psychological nature operative in the situation that are at issue here.

To understand the school learning situation, school theory and school learning theory have to be taken into consideration. A model like that of Dunkin & Biddle (1974) or that of the DPA Helsinki project (see Komulainen 1982) may help us to understand and control the situation. As for school learning, some of the essentials are included in (1) cognitive views about human learning in general (Piaget & Inhelder 1977, Bruner 1966, Gagne 1970, Ausubel 1968, et al.), and (2) school learning with its specific aspects in particular (Ausubel & Robinson 1969, Carroll 1974, Bloom 1976). Turning to school FL learning, theoretical views held by Carroll (1963) and Stern (1972, 1983), to name but the foremost, are constituents of the framework. In addition to all these fields of background theories, considerations coming from the theory of information processing (see e.g. Lindsay & Norman 1972) are important. The whole of this general framework helps us to put our findings into perspective, and functions as a series of check-points preventing arbitrary interpretation (not so uncommon in educational linguistics).

Turning to the affective domain, we come to grips with the general problem of human purposive behaviour. 'What makes

them tick?' In the general theory of motivation we find, analogous to Lewin's view referred to above, the idea of avoidance behaviour vs. tendency to approach the goal, and of activity as a function of the net result of such forces (Atkinson 1964, Cattell & Child 1975, and others). It can be argued that affective elements lie at the very heart of this orientation (see e.g. McClelland et al. 1953).

Foreign language learning motivation (Gardner & Lambert 1972, Gardner et al. 1974) is understood better against such a background: interpretation, criticism, and elaboration of the narrower theory may ensue in the broader framework (Laine 1978, 1986a). An understanding of general theory is also necessary in any attempt to put the sub-concepts into a logical relation to each other, e.g., when building a model of causal relationships. A case in point is the locus and function of self-ratings (Laine 1978; cf. Clement et al. 1977 and criticism in Laine 1986a).

In an attempt to grasp the 'whole person', theories of personality are a necessity. Here, the viewpoint has been confined so as to concern the 'core of personality', the self-concept. Literature dealing with the general theory is abundant (Brookover et al. 1964, Burns 1982, Coleman 1960, Coopersmith 1967, Epstein 1976, Jersild 1969, Rosenberg 1979; see Rep. 1, ? 2.4.). FL specific views, especially those advocated by Brown (1981: see Rep. 1, 2.2.4.2.) are discussed in this investigation in the framework condensed from the general theory of self-concept. This part of the theory is discussed in detail in Report 1, and collectively below in this chapter.

Up to date, issues concerning the nature, composition, and modes of influence of the "filter" have remained obscure, diffuse, and unsettled. In an attempt to clarify these issues, a concise review of the relevant ideas is presented below in order to pinpoint the elements for the framework proper of this study (presented in sub-chapter 2.2.). Filter ideas are first discussed, as it were, as covering the whole area (2.1.1.), following which the alleged core of the filter, the foreign language self-concept, is brought under scrutiny

(2.1.2.).

2.1.1. Review of filter ideas

The "filter" is in present-day literature and professional communication usually connected with Stephen Krashen and his 'filter theory', which maintains that "affective variables act to block input from the LAD" (Language Acquisition Device); that filter strength "can vary according to personality, the relationships between the acquirer and the source of input, and the acquisition situation"; and further that "Filter strength increases markedly at about puberty" (Krashen 1981, 101-102). The term actually goes back to Dulay and Burt (1977), in the form "socio-affective filter", later "affective filter", or just "filter". The term has been shortened, but the essential concept denoted has remained the same, namely, "that part of the internal processing system that subconsciously screens incoming language based on what psychologists call 'affect': the learner's motives, needs, attitudes, and emotional states" (Dulay et al. 1982 46). These theses are considered important in this study, but some essential points of disagreement are presented below; the really hard core of this outline is that previous discussion lacks solid content.

That psychological factors can form an obstacle in the way of FL learning is a common observation. It was dealt with by Stengel (1939), as a case study by Nida (1957, 1958), but also by students of motivation like Jones (1949, 1950). We might call Stengel's article the appropriate starting point of the modern 'filter story'.

Stengel's ideas were taken up by Schumann (1974, 1978), Segalowitz (1974), Krashen (1981), and Brown (1981) in reviews of affective factors in FL learning. Of these, especially Brown will be built on, under 2.2. (for more detailed discussion see Rep. 1, 2.1., and Laine 1986b). The other reviews give real insights concerning this area, but fail to give a systematized representation.

Concerning the actual quality and contents of the "filter", constructive discussion has remained meagre. On the nature, or quality issue, Dulay et al. (1982) assume that the "filter" works subconsciously. In their specification of the concept, the authors seem to posit a diffuse construct which determines a number of important things, including conscious selection, motivational intensity, and others. Their contribution is interesting, but open to question on several psychological counts (Laine 1986b). Furthermore, it reveals little of the quality and nature of the filter, and even less about its real content.

As regards the content of the "filter", basing their ideas largely on Stengel's excellent article (and Larson & Smalley 1972), Schumann (1978), Stevick (1976), and Krashen (e.g., 1981) have discussed, in a somewhat superficial way, features which characterize the "filter". These features include 'motivational orientations', 'emotional states', 'egocentric factors', 'sociocultural variation', various kinds of alienation, and others (see Laine 1986b). Schumann (1978, 164) even presented a "taxonomy of factors influencing second language acquisition". It consisted of lists of factors potentially relevant, grouped under various categories; half of these apparently concern the filter. The 'taxonomy' is an attempt at systematization, but does not possess any of the qualifications of a true taxonomy. An attempt at true systematization of one relevant domain (the self concept) is found in Brown (1981; see Laine 1987 and 2.2. below). This is doubly significant because it is in harmony with views of consensus in general theory (see esp. Shavelson et al. 1976).

Towards operationalized concepts. Laine (1986b, 1986c, 1987) criticized the state of the art on these two counts: the superficiality and inadequacy of the analysis, and the lack of constructive synthesis. The main theses of this criticism were as follows:

1. The filter is to be regarded as a psychological construct both unconscious AND conscious in nature; not a dichotomic concept, but rather a continuum of states along the

dimension conscious-unconscious. Similar views have been presented, among others, by Stern (1983). The theoretical stand adopted here seems feasible from the point of view of cognitive psychology. (To be noted here is that although this notion of a 'socio-affective filter' is not free from cognitive elements, the 'cognitive filter' in cognitive psychology is a different concept. It deals mainly with sense perception and is connected with physiological conditions/limitations of information processing; on this see e.g., Lindsay & Norman 1972).

2. By way of tentative synthesis, the following theses were set out concerning the problem of the relations of the filter factors to each other:

- the filter is to be construed in a holistic setting, with a 'whole' person in an integral learning situation (formal FL learning, preferably concerning whole age cohorts)
- further, the filter has to be concretized in terms of the learner's notions of himself as a FL learner, and his notions of objects outside him relevant to FL learning,
- the 'places' of the contributive factors are to be shown in a model operative in the general setting,
- the learner's FL SC should be seen as the kernel of the filter.

The theoretical break down of the issues leads us to take the following steps:

1. Verifying the distinctive features of the filter.
2. Pinpointing, above all, the FL SC as the focus of interest (discussed below).
3. Constructing working models of the filter and the foreign language self-concept, to be tested empirically. These models are discussed under 2.2.
4. Operationalization of the concepts in the formal FL learning milieu. This is done in Chapter 4 (see esp. 4.3.).

2.1.2. Review of ideas relevant to the FL SC

In compliance with ideas presented in the discussion above, a further review of the foreign language self-concept (FL SC) follows.

A person's views of life depend largely on his views of himself. In learning, optimal results may ensue only if the learner feels free and confident enough to allow the inflow of information, and even to reach out for it. This is why personality factors have long been considered significant in FL learning; yet the aspects, traits, or features studied have not proved very significant. Study of the self concept may turn the scales here.

A person's self-concept is considered to be 'the core of his personality' (see 2.2.): this expert opinion alone should attract the researcher's attention. I have argued elsewhere that the learner's FL SC be considered a central personal factor determining the way in which, and how efficiently, his motivated activity turns (see Laine 1978, 88: inner structure of motivation; Laine 1986b: 'map' of filter factors). If, for instance, a person feels that he or she is 'no good for anything' / 'no good for FL learning', this will certainly affect his/her activity, although the true reasons may be covered, and the responses disguised (cf. this, e.g., with Atkinson's 1964 discussions of goal-directed, or motivated, behaviour).

A FL learner's self-ratings of his FL skills have long been a standard parameter in, say, research into FL learning motivation (for an elaborate stage of this research, see Gardner et al. 1974, and Laine 1978). The ratings do not differ much from the FL teacher's assessment, or from objective test results (Laine 1978); furthermore, they do not give much information of anything else, for example the learner s notions of himself.

Turning to the general psychological construct of the self-concept, we find numerous analyses of its quality and nature; many different terms are also found for more or less

the same concepts. Yet, at a certain level of generalization, remarkable agreement concerning its quality and content can be found. It was argued in Rep. 1 (Laine 1987) that a division of the construct into three components, the actual self, the ideal self, and self-esteem, is a summary of this agreement. Of these, self-esteem, the individual's notions of his worth, dignity, and competence (potency?) represents the 'net result' of his self-notions. All these notions have been developed in interaction with the outer world, with 'significant others' (parents/family, peers, teachers, eventually ideals/idols) as significant modifiers. Further, the proposition of the SC materializing at three levels, general/global, specific, and task, has been accepted here; and further still, elaborated to fit FL learning conditions (see below discussion of the FL SC, identity, and 'language ego'). Thus the construct of SC can be broken down into an 'academic self-concept' and 'foreign language self-concept' operative under the respective conditions (Brown 1981; Laine 1986b, 1986c, 1987). The whole set of concepts, and their organization in a manner sketched above, seem a sound enough basis for empirical study. A practically identical set and organization of concepts (identical at this level of generalization), with much of the same terminology, has been represented by Shavelson (1976, 413) in diagrammatic form.* This finding is a further proof of remarkable theoretical consensus on central issues concerning the SC.

A person's notions of himself as a FL learner form his foreign language self-concept (FL SC). In school FL learning, this is part of his academic self-concept, i.e., his notions of himself as a student in general. The FL SC may be broken down into components and levels, like the general SC. The student's self-ratings of his FL skills, familiar from previous research, find a natural place in the actual component of the FL SC (and, possibly, as determinants of

* I am grateful to M.-K. Pihko for drawing my attention to this diagram, which gives a very clear overall view of the organization of ideas propounded here.

self-esteem). They may refer to special skills at the task level, all-over knowledge of the target language at the specific level, or general FL capacity at the 'general FL' level; previously, they have appeared as measures of the task level only.

Note 1 on terminology. Speaking of self-concepts, one finds the terms 'general' and 'global' occasionally used in much the same meaning; at other places, a distinction is made between them (see Brown 1981). While it is true that such a distinction can be made, say, in calling one aspect of the SC 'the general global SC', another 'the global academic SC', etc., it is considered sufficient here to call them 'the general SC', 'the general academic SC' and further, 'the general foreign language SC'. This is a simplification, natural here, as no distinctions of the general SC - which just serves as background for the more specific aspects - are needed (i.e., distinctions like 'general global'/'general specific'). Thus the principle of terminology seems clarified on this point; the same is aimed at as regards the second alteration (see Note 2 below).

The FL SC, language ego, and identity. It is a specific feature of FL study that it requires the (successful) learner to move into new spheres, to adopt new modes of behaviour; as it were, he has to take on a new identity. Especially Guiora has discussed this phenomenon in various contexts (Guiora 1972, 1983; Guiora et al. 1972; see also Laine 1987); actually, the problem was handled earlier by E. Stengel (1939) and Brachfeld (1936), two psychologists interested in the affective conditions of FL learning.

"Identity" is understood in this study as a person's feeling of sameness, integrity, unity at different times, places, and situations (cf. Rep.1, 19, and consider Erikson 1959). To venture outside one's own identity, even in a small way, or temporarily, is an enterprise successful only to a person with a sound SC. Most FL learners will stop at some point: "This far, no farther"; learners with weak SCs will stick to their old identity protected by, among other things,

the walls of their native language. (Guiora actually seems to over-emphasize this.) In extreme circumstances we have a pronounced case of the 'ego' defending the individual's mental balance against dissonance, disturbance, ambiguity (besides Guiora, consider literature discussed in Burns 1982). In such cases, we can posit but little traces of 'FL identity'.

Note 2 on terminology. Efficient, authentic FL learning, then, presupposes that the learner 'take on a new identity', i.e., develop a 'foreign language ego'. The term, introduced by Guiora, seemed handy, and was accepted by the present author as a working term, with an aim to giving it a more general meaning than Guiora's psychoanalytically oriented view. A mature consideration, however, seems to weigh the scales in favour of the term 'foreign language self-concept' (FL SC), as such a term connects neatly with the psychological 'school' in which the general view of the SC has been elaborated in this research scheme, and follows the logic of the rest of SC terminology. Consequently, the term covers in a natural way the various aspects of this specific subconcept of the SC reviewed above. The term 'language ego' is still considered useful in some contexts to emphasize aspects so keenly observed by Guiora, aspects touching upon 'identity' and identity problems in FL learning. It is obvious that in successful FL learning the learner has to develop something to be called his 'FL identity'. The term 'FL SC', again, can represent the learner's overall notions of himself as a FL learner more adequately.

2.2. Framework for the present study

In the sub-sections below, the filter and its essential part, the FL SC, are defined and given hypothetical content: hypotheses based on the theoretical positions adopted are set out here. Generally speaking, they concern the content, interrelations, functions, and inner structure of the constructs. They are reflected in the study problems (Ch. 3) and tested in the Validation Study.

2.2.1. Filter theory and hypotheses

Definition: The foreign/second language learner's affective filter is a psychological construct consisting of a set of affective factors which make the learner screen incoming TL information either consciously, or unconsciously.

The filter, then, is postulated as operative at both conscious and unconscious levels. The conscious part can be studied directly, and the unconscious by projection, e.g., through the subject's emotive reactions to relevant stimuli. Rational analysis of the construct, again, makes handling and therapeutic treatment of the phenomenon possible.

For study and exploitation purposes, the construct has to be given a concrete form, i.e., it has to be operationalized. A first stage of the operationalization of the filter functioning in formal FL learning is presented below in hypothesis form, to be further operationalized in the measuring instrument, and tested in the empirical part of the study. In addition to hypotheses concerning the nature and content of the filter, further hypotheses concerning the mutual relations of the filter variables, and the operation of the filter are set out in this connection too.

Hypotheses concerning the filter. The affective filter is proposed as appearing in the formal FL learning context in a number of factor groups termed 'filter levels' in this study. The levels are as follows:

1.Motivational factors (affective motivational elements). The components to be considered here are motivational indices and types of orientation.

2.Certain personality traits (or, generalized attitudes). The main variables here are trait anxiety, alienation, and the ethnocentric syndrome.

3.Attitudes towards TL related objects. The main attitude objects here are target language speaking groups (TG), target culture (TC), and the target language (TL) itself.

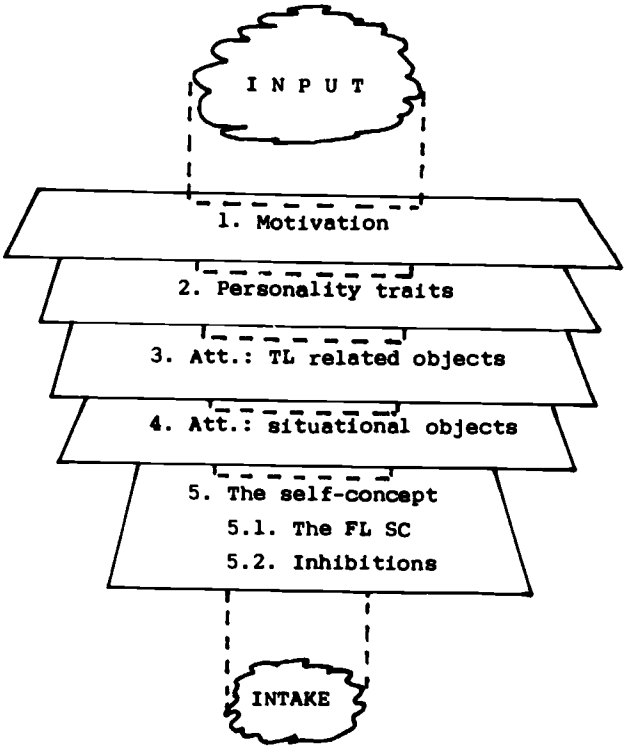
4. Attitudes towards objects in the learning situation.

Objects here are the TL teacher, the teaching method (instructional measures or arrangement), and the learning materials (TL course) used.

5. The learner's self-concept, especially his FL SC, including relevant inhibitions and defences.

The levels proposed here can be construed as factors 'setting in the way' of incoming information, and presented diagrammatically as follows:

FIGURE 1. Levels of the filter



The levels correspond to various aspects of the general FL learning setting, and can therefore be posited to be psychologically and empirically valid. They are not, however, to be understood as having a similar status within the filter.

Level 1, motivation, contains affective elements (especially in the orientations) which can be taken into consideration in a discussion concerning the filter proper. Yet, in the final analysis, motivational factors are best construed as a level where other levels of the filter take effect, lowering the strength and changing the direction of motivation, but also affecting the type of orientation. Thus Level 1, measures of motivation, should in the first place be seen as criterion variables antecedent to the final criterion, namely achievement in FL study. Levels 3 and 4 contain attitudes towards objects 'out there'; these attitudes may augment motivation, or decrease it (see Ausubel & Robinson 1969, 352). The same is true, at a generalized level, of Level 2 (traits). Level 5, again, contains the subject's attitudes towards himself (see Rep. 1, Ch. 2.2.4). Level 2 taps the subject's personality, and comes closer to Level 5 (the self-concept being often called 'the core of personality', see Rep. 1, 14; cf. Brookover et al. 1964, Brown 1981, Burns 1982, Coleman 1960, Coopersmith 1967, Epstein 1976, Jersild 1969, Rosenberg 1979) than the other levels. Level 3 (TL related attitudes) is clearly more connected with the subject's long-term motivation, Level 4 (situational attitudes) rather with his short-term motivation (cf. Laine 1978, 99-106; on the concepts cf. Apelt 1981). These observations are reflected in the construction of a model of the mutual relations on the filter levels, to represent the inner structure of the filter (see below).

Hypotheses concerning the operation of the filter. In compliance with the discussion of filter levels above, the (high) filter is proposed to be operative when

1. the subject's anxiety, alienation, and ethnocentrism are high (Level 2),

2. his TL related attitudes are negative/indifferent (Level 3),

3. his situation related attitudes are negative/indifferent (Level 4), and/or

4. his FL SC is weak, with strong inhibitions (Level 5:

5.1., 5.2.).

Various combinations of filter factors, naturally, will appear. A systematical presentation and valid operationalization of the factors makes possible the gaining of solid empirical study results, e.g., the calculation of the contributions of the factors and their combinations to the net effect of the filter.

Further, it is hypothesized that the influence/effect of the (high) filter is shown in

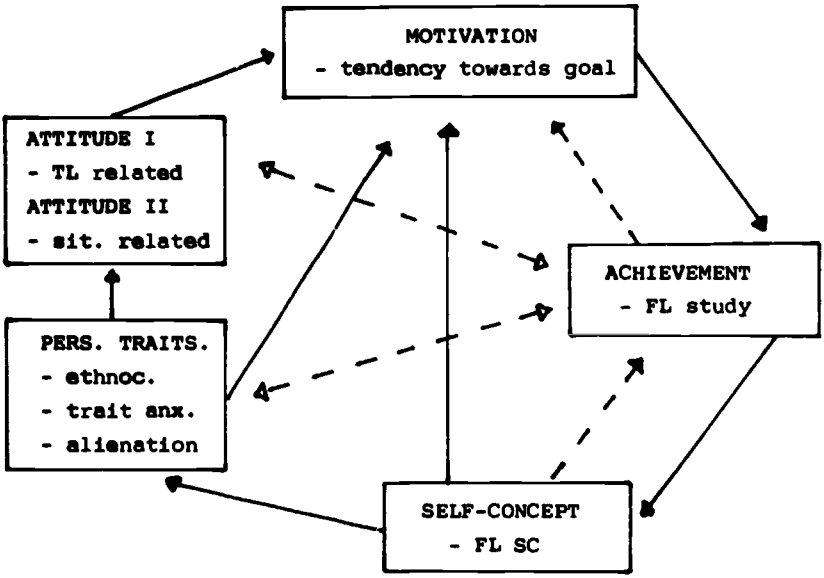
1. low measures of motivational indicators,
2. low measures of TL learning orientation, and crude (instrumental) forms of orientation, and
3. low achievement in TL study (actually: low in relation to the subject's capacity).

Influence of filter variables. As was stated above, filter variables as measured at the personality trait, attitude and self-concept levels are proposed as exerting their influence on (the measures/indices of) FL learning motivation in the first place, and via this route on achievement in FL study. The FL SC is supposed to be the most general factor affecting the personality traits measured here, and TL and situation related attitudes; as for personality traits, they are allegedly more general than the attitudes. Generally speaking, the filter variables promote, or detract from, the learner's tendency to approach the goal. In addition to this, they allegedly have some direct influence on achievement. (Strictly speaking, reciprocality can be detected in most of these relations.)

Achievement also affects filter factors and motivation, reciprocally. This direction is considered secondary except for the influence of achievement on the self-concept.

On the basis of these assumptions, a theoretical model of the filter was compiled, to be tested empirically (see Ch. 5).

FIGURE 2. The filter model to be tested (Model 1)

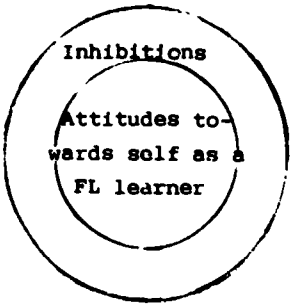


2.2.2. FL SC theory and hypotheses

Definition: The foreign language self-concept (FL SC) is a person's fairly stable overall notion of himself as a FL learner, of his notions of competence/potency, worthiness, and ideals, with defences and inhibitions as guardians of the vulnerable construct.

The central idea, that of a 'globe' of self notions surrounded by defences and inhibitions, can be illustrated by a simple diagram:

FIGURE 3. The FL SC: 'the emotional hedgehog'



The FL SC - in keeping with the general self-concept - can be defined in terms of three components: the actual (real, cognized) self, the ideal self, and self-esteem, each of which materializes at three levels, namely a general level, a specific level, and a task level. Inhibitions - defences between self and others - can be described as the 'reverse side' of attitudes towards self. Thus the construct can be represented in 'map' form:

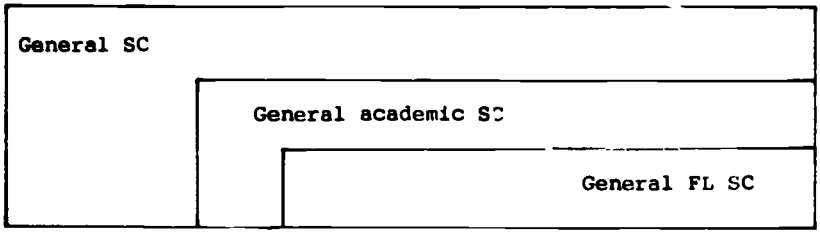
FIGURE 4. Components and levels of the FL SC: 'the map'

Levels	Components: Actual	Ideal	Self-esteem	Inhibitions
General				
Specific				
Task				

The locus of the FL SC. At the general level, the FL SC

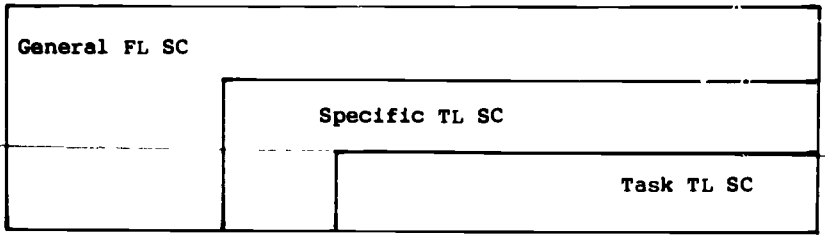
shows a significant parallellism with the learner's general academic self-concept, which, again, largely runs parallel to the person's general overall self-concept. The FL SC is to be seen in this larger framework:

FIGURE 5. Putting the FL SC into perspective



The general FL self-concept comprises a person's overall notions of himself as a foreign language learner. These will show differences even from the general academic self-concept (in the school context, these differences very often are differences for the worse). The more specific the domain, the more heterogeneous the content: at the task level, considerable variation in a person's notions of himself may appear. It therefore seems feasible to discuss the FL SC construct in the following framework:

FIGURE 6. Focussing on the FL SC



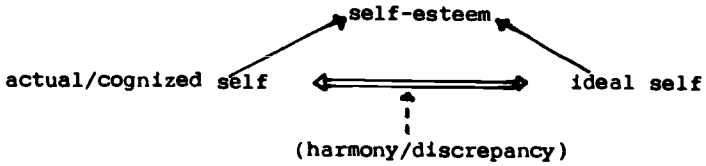
On discussing the FL SC proper, it seems advisable to take some measure of the other two 'general' levels into

consideration: in doing so, the researcher may gain some insights concerning e.g. the gravity of some affective dilemmas.

The specific level of the FL SC concerns the target language at large. At the task level we have the learner's self-ratings of his TL skills, forming the essential part of the actual self component here. (In many earlier studies, such self-ratings have been the only measures of the 'FL SC', with little or no reasoning as to why they were there.)

Inner structure of the FL SC. As depicted in FIGURE 3 above, the FL SC is to be understood as a host of attitudes toward oneself as a FL learner, 'protected' by a layer of inhibitions and defences. These attitudes can be grouped under three headings, called components. The components, represented above in 'map' form, are actually hierarchical in the sense that self-esteem is considered largely the result of harmony or discrepancy between the actual and ideal selves:

FIGURE 7. Hierarchical relation of the components

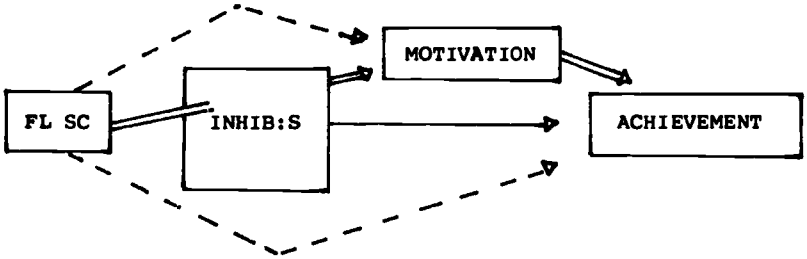


For these reasons, FL related self-esteem is to be regarded as the best predictor of the influence of the FL SC; the interplay between the actual and ideal selves, and their optimal relation are research problems in themselves.

Main influences of the FL SC. It follows from the basic idea that elements within the FL SC have to penetrate the layer of inhibitions to take effect in TL learning (see FIGURE 3). It is also feasible to think that these elements (and inhibitions) affect motivation rather than achievement

directly (see FIGURE 2). We thus get the following model to be tested:

FIGURE 8. The FL SC model to be tested (Model 2)



The alternative paths of influence are to be computed (LISREL), to shed some light on the 'interior' of the concept. Compare this model also with the other model to be tested (Model 1), concerning the influence of filter factors at large.

3. PROBLEMS OF THE VALIDATION STUDY

In this chapter, the problems to be studied, and the hypotheses concerning each issue have been assembled under general headings, for a concise overview. They have been discussed under 2.2. above. Their operationalization is reported in Ch. 4 below.

1. The first problem to be tackled was simply, "What is the filter?" Here the general content, and the general construction of the filter were at issue. The general hypothesis, already present under 2.2., was that in the formal FL learning context, the filter appears in a number of factor groups, or 'filter levels'. These levels were considered situationally valid, but their relations to each other variable and largely to be disclosed in this study.

2. The second problem was parallel with the first: "What is the foreign language self concept (FL SC)?" Here, then, the content and construction of the FL SC was to be revealed. The general hypothesis concerning the FL SC consisted of propositions about (a) the FL SC as part of a hierarchical general system of notions of self, (b) inhibitions as a subsumed, or closely connected, area of negative affective emotive factors, (c) three main components, and (d) hierarchical levels within the FL SC.

3. The next question to be taken up was "How does the filter exert its influence? The problem concerned the paths of influence, as well as the contributions of filter variables to FL learning motivation, and, eventually, to achievement in FL study. A hypothetical model of these paths illustrated the logic behind this part of the study.

4. Problem no 4 was analogous to no 3: "How does the FL SC function?" The complication here was that the FL SC can be

construed as part (the heart?) of the filter. Hypotheses concerning the influence of the FL SC were exemplified by means of a model. Owing to the relation between Problems 3 and 4, they were to be considered together.

5. The question that followed logically from the first four was "What is the relation between the filter and the FL SC?" The problem to be studied here was how the concepts and subconcepts are interrelated, and whether there are signs of (some part of) one construct affecting the other in a way possibly indicative of a causal relation. Hypotheses of intercorrelations as well as paths and directions of influence (discussed in Ch.2) were to be taken under closer scrutiny here.

6. Thinking of the growth of affective attitudes in favour of or against FL learning, the next question was, "How do some central determinants affect filter and FL SC development?" The general hypothesis was that the influence of determinants at home and in the learning situation ('significant others', outside incentives, and processing factors) is shown in filter factors, accounting for some part of their development.

7. To study the variability of the filter, and the generalizability of the results, the question, "Are there differences in the main filter variables regionally or between city and countryside (schools)?" was posed. It was hypothesized that regional difference, at a general level, would not be significant, while greater difference was expected between cities and country centres.

8. Lastly, to help identify the 'filter' and 'non-filter' type(s) of learner, the question was posed, "What 'filter' and 'non-filter' types can be detected among school FL learners?" It was hypothesized that a number of such types, and their central characteristics, could be outlined on the basis of their reactions to statements concerning the issues studied.

4. MATERIALS AND METHOD

4.1. Subjects, sampling, data collection

Subjects. The subjects (Ss) in this study were 541 ninth-graders (i.e., school leavers) in Finnish comprehensive, or basic, schools. They were in the 15-16 age range. They had studied FL/English for 6,5 years. All of them had started a second foreign language, Swedish, in Grade 5 (Swedish is the second national language, but ipso facto 'foreign' in the psychological sense for most learners). Many even had an optional third FL, starting from Grade 8, on their programme. Thus the Ss had a great deal of personal experience of FL learning; on the other hand, they were approaching a crossroads at the end of the school year where they would have to decide about continuing their future FL learning - or finishing it.

A pilot test was carried out on a sample of 55 Ss among ninth-graders in one school in Central Finland. These subjects had English as their first FL. In addition to this group, a small group (N= 14) of Ss who had only had English for 1,5 years was tested, for eventual observations concerning different trends in their 'filter' development. The main group of Ss was tested after the pilot test had been analyzed and conclusions drawn about the reliability and practicability of the method. This process is considered under 4.2. and 4.3.

To check the test-retest reliability of the measuring instrument, the Ss in two big city schools (N= 129) were retested 5-6 weeks after the main test (see 4.2.2.).

Sampling. The sample was planned to be representative of ninth-graders in Finnish schools. Some arguments in favour of sampling this phase of 'filter' development were given above; it is feasible to think that a valid picture of a 'well-developed filter' would be attainable at this stage. As Finland has a general school system that is more homogeneous

and unitary than in most Western countries, the results may provide incentive for discussions about 'filter prototypes' in formal FL learning elsewhere.

The sampling scheme contained two stratifications: one regional and the other between cities and countryside schools. The regions were Central Finland, allegedly very typical of the Finnish school system, and North Karelia, where some 'remote area' effects might appear, especially in the countryside. On the basis of the author's previous research into FL learning motivation (Laine 1977, 1978), no great differences between areas/districts were to be expected. Thus if no difference of statistical significance were to appear between regional means, it could be taken, with some reservation, as proof of the national validity of the information in hand. The same was true of differences, or non-differences, between city and countryside schools. Here, it was known beforehand that some difference would occur (Laine 1977).

The sampling units were schools and school classes. In education these two units are outstanding; from the point of view of research practicability, in group testing they are critical. Furthermore, with all the advance information available about schools, and in schools about classes, it was possible to elect typical schools and classes where extraordinary features were unlikely to distort the picture. (It was the 'filter prototype' that the study was after.) On these grounds, upon expert agreement, a fully non-random sampling scheme was arrived at. It was argued that random sampling, especially noting resource limits and error due to, say, mailing questionnaires, would obviously produce more erroneous results than the procedure adopted.

There was one more complication. The sample was to be representative of the whole age cohort. In the academic year 1986-87, ability grouping was still used (for the last year) in Grade 9. Therefore, English classes at each level (termed 'long/extensive course', 'middle/medium course', and 'general course') in each school had to be included in the sample. During the testing phase it became obvious that the line of demarcation between 'longs' and 'mediums' varied a lot from

school to school, and some extra classes were included to make sampling cover the age cohort in each school with maximal adequacy. After these arrangements it can be argued that the results of this study approach national validity concerning the age group. On this basis, generalizations in various directions are possible.

The square frequency planned was N= 100, and the sum total of subjects N= 400 (in brackets). For the reasons given, the final frequencies were somewhat higher:

TABLE 1. The sampling scheme

	Central Finland	North Karelia	Total
Cities	(100) 149	(100) 140	(200) 289
Countryside	(100) 104	(100) 148	(200) 252
Total	(200) 253	(200) 288	(400) 541

Data collection. After consultations with regional school administrations, the headmasters of the schools were contacted by the researcher personally. The tester group was trained in advance, and had some practice with the pilot test. The researcher also visited all schools, interviewing the headmasters and TL teachers, and testing the general courses, i.e., the hardest group. Thus measures were taken to guarantee a good and confidential test atmosphere; personal knowledge of the schools was also considered necessary for the elimination of misinterpretations of test results. The research group met with co-operation and understanding at each school, and the subjects, as a rule, seemed to do their best to fill in the questionnaire conscientiously. Talks with pupils gave evidence of remarkable interest in the study. All of this arrangement aimed at the reduction of error in results because of Ss' indifference or carelessness. On the other hand, some odd

cases of intentional carelessness could be singled out immediately. The testers thus managed to collect the data smoothly and efficiently.

The tests were undertaken in the course of two weeks in February, 1987. The retest took place 5-6 weeks later in March, 1987.

4.2. Measuring instrument

In keeping with theoretical analyses (see 2.2.), the following content areas were to be measured: (1) motivation, with its subcategories: general school learning motivation, general FL learning motivation, and three kinds of motivational orientation: instrumental, integrative, and cognitive; (2) personality traits: ethnocentrism, trait anxiety, and alienation/anomie; (3) TL related attitudes: attitudes toward target group 1/Englishmen, attitudes toward TG 2/Americans, attitudes toward the the target language, and attitudes toward target culture; (4) situation related attitudes: attitudes toward the TL teacher, attitudes toward teaching methods, and attitudes toward the TL course; (5) self-concept categories: the general self-concept, the general academic self-concept, the general FL self-concept, the specific TL self-concept, and the task TL self-concept, and correspondingly, (6) categories of inhibitions: general inhibitions, general academic inhibitions, general FL inhibitions, specific TL inhibitions, and task TL inhibitions. In addition to these, a number of determinants, or background variables, and some criterion variables in the field of school achievement were included in the measuring instrument (see APP. 1).

4.2.1. Construction of the measuring instrument

In the selection of items to measure affective variables, two important sources in previous research were used: the Gardner et al. 1974 and the Laine 1977 studies. An extensive review of research into the self-concept yielded many SC items to start

with. Contributions from small tests over the years (see Rep. 1) were included into the pool of items; in an intensive developmental phase 1984-86, the author's seminars also contributed. The aim was to ensure a good coverage by producing a large pool of items, the best of which would form the final measuring instrument. In this way also many previous, less satisfactory items could be replaced by new ones, more relevant to the FL learning situation.

In the pilot test, the functioning of the items was studied thoroughly. After a survey of means and deviations, the intercorrelations within the content areas and the correlations of filter variables with determinant and criterion variables were studied to pick out items with zero correlations. Next, the inner consistencies of the content areas were computed: observations about items which weakened the inner consistency were made here. Lastly, in factor analyses of the 'filter levels', items with low communalities were noted. Before accepting or discarding an item, its theoretical significance was contemplated. A number of items were discarded on redundacy principles. This set of screens reduced the number of items from 270 to 210. The same checks were carried out on validation study data, and a few more items were discarded.

A final selection of items, then, was carried out on the final data. The number of items accepted into computational analyses was 199. Twenty-five sum variables were formed to represent the content areas. At this stage, sum variables were also formed of certain determinants (parental, peer, and school class influence), while a number of further determinant variables, and four criterion variables were selected into the instrument as single-item variables. The full list of research variables is given in APPENDIX 1.

4.2.2. Reliability of the measuring instrument

The summed filter variables were tested for their inner consistencies, and so were the more extensive content areas, viz. the levels of the filter, and, lastly, the whole

measuring instrument (Cronbach's alpha). All of these were also measured for their test-retest reliabilities (Pearson's r). The consistencies were high, with just a few lower figures for some single variables. At variable level, they ranged from .51 to .90; alphas for 'filter levels' ranged from .73 to .93; for the whole instrument the consistency was α = .88. The test-retest reliabilities were also high, ranging from r= .58 to .82 at variable level, and from .77 to .88 between 'filter levels'; the coefficient for the whole instrument was r= .85. For the crucial subconstructs, the FL SC and the relevant inhibitions, the alphas were in the .90 range and the r's in the .85 range. Thus the reliability of the measuring instrument was adjudged to be signally good.

The reliabilities are given in full in APPENDIX 2.

4.3. Content of the measuring instrument

The measuring instrument was scanned thoroughly on the pilot test. Some technical viewpoints, significant in the development of the scales, were discussed above (4.2.). Here, comments on the content of the items are made, so as to help the reader to a better understanding of the results. Factorial structures are commented on under 5.1. and 5.2.

Motivation. Items representing various motivational aspects - intensity and direction; willingness to apply oneself and to accomplish TL learning tasks, etc. - were lumped together to represent 'motivational indices'; in point of fact, they were noted to represent, contentwise, general FL learning motivation adequately. Measures of general school learning motivation, again, formed a distinct dimension of their own.

On the basis of correlational examination (... 4.2.), the three kinds of motivational orientation were clearly distinguished. In instrumental orientation, the old-established prospect of 'a good job in the future' was accentuated, but so was the point of view, "I learn English

just because it is one of the school subjects". In integrative orientation, possibility to communicate with people from the target groups, and from other cultures, came to the fore. In cognitive orientation, aspects of self expansion and self-growth were significant. These aspects, then, were strongly reflected in the final scales.

Personality traits. Ethnocentrism and authoritarianism formed on single dimension, with a heavy weight on the ethnocentrism side. In later screens the share of auhoritarianism diminished further. Significant items were reserved attitudes toward foreigners, education for international understanding, and extensive FL programmes in schools, plus preference of the in-group. Thus the scales finally contained 'old' and new, situationally relevant items in equal shares.

Trait anxiety and alienation formed two distinct features. Both of these consisted mainly of 'new' viewpoints as compared with previous research into FL learning motivation. General anxiety depression, fear of the future, feelings of difficulties many and grave characterized the former. Significant features of the latter were general anomie, lack of confidence, alienation from parents, friends, and teachers, and a wish to escape from the prevailing situation. The scales, then, largely consist of items more relevant to the learning situation than previously.

TL related attitudes. The scales for attitudes toward the two target groups, Englishmen (TG1) and Americans (TG2) consisted, after screening, of items indicating positive attitudes in general, admiration for the TG, and wishes to learn more about them, and notions that members of the TG are easy to get on with. Some stereotypical attributes also qualified, for TG1, "polite and friendly", for TG2, "modern and ambitious".

Attitudes toward the target language (TL) consisted of items indicating an affective interest in the language, its 'sound', and the way it 'works', and further, of wishes to understand and process it.

The scales for attitudes toward target culture contained finally a willingness for cultural contacts, general interest, considering learning about TC important, and a (latent) willingness to move into that culture.

Situation related attitudes. Items reflecting attitudes toward methods and the TL course had largely the same content, namely, notions of pleasantness, usefulness, interest; wishes to participate, and to have 'more of the same sort' completed the lists. Attitudes toward the TL teacher also contained liking and interest; a willingness to comply with the teacher's instructions contributed. Two teacher attributes also qualified in the screens: "intelligent" and "competent".

SC and FL SC variables. Items of the general self-concept in the final scales represented the Ss' notions of their personal competence and dignity. Ability to 'get on', intelligence, and 'having many good qualities' were items of the actual self; wishes for success in one's enterprises, for more esteem, and for popularity among friends, of the ideal self; notions of personal worthiness and adequacy/lack of adequacy represented self-esteem.

General academic self-concept items that qualified for the scales indicated notions of academic competence, absolutely and in comparison with classmates (actual self); a wish for better academic success and dislike of failure (ideal self); a feeling of sufficiency and adequacy, obviously, represented the self-esteem component.

The actual self of the general FL SC was represented in the final, 'screened' items by notions of personal FL skills, and of a new identity while using a FL. Ideal self items were wishes for superior capacity in FL learning, and for being a 'FL virtuoso' in other people's eyes. The self-esteem items that qualified for the scales were notions of adequacy/non-adequacy as a FL learner, and fear of appearing incompetent in the eyes of peers.

Items of the specific TL SC were, after selection: for the actual self component, notions of personal ability to learn the TL, absolutely and in comparison with others, plus experience of a new identity while using the TL; for the ideal

self, a wish to learn the TL perfectly, together with cue for distinguishing oneself through TL skills among peers. The latter came also close to self-esteem (or, lack of it). Notions of the impossibility to learn the TL formed a clear item representing self-esteem.

All tested task TL SC items were accepted: they were good technically, and gave a good overall picture of the Ss' notions of their TL skills at specific tasks: pronunciation, spelling, speech, grammar. The previous 'self-ratings' were thus represented in dimensions significant from the psychological and didactic points of view; on the other hand, the three SC components were represented in an apparently adequate way.

Inhibition variables. Items representing general inhibitions indicated failure of coping mechanisms, putting the blame on hard luck, plain alienation, and a wish for change.

General academic inhibitions indicated a general discomfort and feeling that the school atmosphere was tense; passivity, frustration, value denial, and general alienation; furthermore, there were the classical fear of mistakes, laughter from schoolmates, and fear of 'performing' present in this content area.

At the level of general FL inhibitions, there were corresponding items: fear of 'blunders', helplessness, tenseness of the FL class atmosphere, alienation; difficulty in applying oneself in FL use, and seeing such use as a silly game, or a clown's activity, accompanied these.

At the next level, specific TL inhibitions, similar negative feelings were met with: various feelings of anxiety, alienation, identity problems, fear of mistakes, symptoms of failing self-esteem.

Task TL inhibitions were interpreted as symptoms of alienation, identity problems, frustration, failure of coping mechanisms, value denial, and task avoidance.

The wording of the items tied together with the respective levels of self-concepts and inhibitions. These two essential domains - the SC and inhibitions - were represented

in the final scales by the most extensive number of items. The most significant items appear in the analyses of factorial structures in Ch. 5 (see also APP. 3).

4.4. Data computation scheme

A number of automatic data processing techniques were used in solving the problems posed in Chapter 3. They are reported on in the list below.

1. In the development of the scales, a study of the means, deviations, and correlations was followed by a study of internal consistency (Cronbach's alpha), and, finally, a test of correlation between two measures on the same scales (test-retest reliability; Pearson's r).

2. In the verification of the critical features and general constructions of the filter and the (foreign language) self-concept, a study of correlations, and factor analyses (principal axis, Varimax) were resorted to. These procedures concerned Problems 1 and 2.

3. The study of constructions and paths of influence was conducted by means of the LISREL (LISREL VI) technique. Correlational and factor analyses were also used in building up the general picture. (Problems 3 and 4.)

The same techniques were used in analysing the relations between filter factors, and between the filter and the FL SC in particular (Problem 5).

4. To study the alleged development of filter factors, factor analyses (principal axis, Varimax) with predictors and criteria in the same analysis were applied. Studies of correlations were used to form, and support, the views arrived at. (Problem 6.)

5. Analyses of differences between means (Student's t) were used in studying the similarity, or difference, between

regional districts, and between schools in cities and country centres. (Problem 7.)

6. In the identification of 'filter' and 'non-filter' types of FL learners, a cluster analysis of the research variables (QUICK CLUSTER) was used. (Problem 8.)

5. RESULTS

5.1. Factorial structure of filter levels

In this subchapter, the factorial structure of the 'filter levels' is reported, excluding that of self concepts and inhibitions. These two are focussed upon in subchapter 5.2. As was pointed out under 2.2., the levels do not have similar, or, e.g., clearly hierarchical status within the filter. Level 1, motivational variables, or just the 'motivational indices' serve mainly as criteria for the rest; within the rest, there are obviously several recursive influences; the self-concept, with subsumed inhibitions, again, allegedly affects the whole area. The interrelationships, therefore, are best left to a specific analysis. The factorial structures reported below aim at a clear overview within the system of concepts that act as the framework for this study.

The outstanding features of the factor solutions, then, are discussed below. These factors are given in the appendices (APP. 3.1.).

Motivational variables. At the pilot stage, four clear factors were extracted from the material. In the Validation Study, a solution with five factors was finally chosen. Of these factors, the first two were the main contributors, and even of these the first (F1), the general FL learning motivation factor, was by far the most powerful. Within it the items of the three orientations and some motivational indices received high loadings. The integrative-type orientation came here to the fore, the cognitive-type 'came in second', and the instrumental-type orientation had remarkable loadings on three items out of six. The outstanding feature was a willingness to have contacts and to co-operate with many kinds of English-speaking people: thus it was obvious that the true purport was communication, not integration of any kind, with TL speakers. Of the motivational indices, especially a

willingness to learn English (voluntarily!), and to use it actively outside school correlated with this factor.

The second factor (F2) was very clearly a school learning motivation factor, stressing school learning as useful, important, even enjoyable, and showing voluntary school attendance. (Items of FL learning motivation did not receive high loadings in this factor.)

The third factor (F3) was weighted on the three types of orientation: it was a specific factor of motivational orientation. Judging by the coefficients, the most important indicators were learning TL out of free will, willingness to have more of it (in school!), concentration in TL study, and active seeking of TL practice outside school; an example of this general principle of spontaneous activity was 'trying to follow English TV films through TL' (i.e., not sub-titles in L1). Thus this factor emphasized intrinsic motivation.

The fourth factor (F4) contained an appreciation of the instrumental value of TL knowledge, but also aspects of self expansion and growth; in this context, the item "I would like to be like an English-speaking person I admire", which here received a remarkable loading, was taken as a sign of a cultural-type idol. In all, the factor seemed to reflect a growth motive. Factor 5 (F5), again, emphasized the significance of school TL learning as compared with other possibilities. (Somewhat surprisingly, perhaps, this appreciation of school FL learning appeared in various contexts when the material was examined and processed.)

The relative shares of the area accounted for by all factors in the analysis were as follows: F1 60.9 %, F2 13.6 %, F3 10.3 %, F4 8.1 %, and F5 7.1 %.

In sum, the analysis outlined a very neat picture of the motivational field: general FL learning motivation - with a significant emphasis on communicational viewpoints - was the central dimension, further elucidated by intrinsic motivation, growth motivation, and specific school FL learning motivation. General school learning motivation was a distinct dimension with little connection to these FL specific aspects. The results concern not only the theory of FL learning motivation

directly, but also the theory of filter factors: these factors open views onto filter-lowering effects in FL learning in directing and strengthening goal-directed activity. The organization of items under theoretical categories offered a solid basis for interpretation, and for elaboration (e.g., the formation of sum variables for further analyses).

Personality trait variables. At this 'level of the filter', four factors were extracted in the pilot study. In the Validation Study, the fourth factor was weak and narrow, while the three-factor solution was exceedingly clear, and was therefore chosen for interpretation.

The two important factors (F1, F2) were in complete accordance with theory: anxiety and alienation joined together in Factor 1, ethnocentrism forming Factor 2. The central feelings of anxiety were, "I am often depressed" and "There are many oppressing things in my life"; that of alienation, "I feel that I don't belong anywhere". In the ethnocentrism factor, some 'new', situationally relevant views took the upper hand. These contained criticism against the amount of "all sorts of education for international understanding", and the amount of FL teaching in school; further, the claim that FLs should be taught as such, as language per se, without tying it up with the respective culture and mode of life was accentuated. Old, well-known ethnocentric attitudes toward foreigners were secondary to these aspects, but were still noteworthy. Authoritarianism was only present in one item with a considerable loading. This was the old-established "Basically, people can be divided into two categories: the strong and the weak".

The third factor (F3) was not perfectly clear in content. It seemed to reflect non-acceptance of authoritarianism, at the general level as well as in the FL teacher; good, open relations with one's family completed the dimension.

Authoritarianism, then, largely fell outside the picture, while ethnocentrism assumed some new content, relevant situationally. The division into theoretical categories was very clear-cut: the interesting finding here is that the two

main dimensions, ethnocentrism and anxiety/alienation, had but negligible connection with each other. It was concluded here that it might be feasible to study the two separately. It is conceivable that while (trait) anxiety and alienation may be outcomes of, and certainly are strengthened by, adverse FL learning experience, ethnocentrism is essentially to be understood as a personality trait fixed prior to L2 influence. At any rate, the filter-raising quality of both factors is obvious; here the question as to how they work, and what they are ultimately connected with, remained open.

The relative shares of the area accounted for by all factors in the analysis were as follows: F1 48.7 %, F2 32.2 %, and F3 19.1 %.

TL related attitudes. In the pilot study, five factors were extracted at this 'filter level'. In the final Validation Study solution the number of factors was limited to three. In this solution the information of the variables could be accounted for in a clear and economic way, revealing a TC/TL factor on the one hand, and on the other, TG factors with some interesting connections.

The first factor (F1) consisted of attitudes toward the target language and target culture, the emphasis lying on the TL side. There was an interesting connection with TG1/Englishmen: this combination of language, culture and TG1 was a clear phenomenon in this material. In addition to this, attitudes toward TG1/Englishmen appeared as an independent factor (F3), with little connection with the rest. Attitudes toward TG2/Americans came out second (F2). In this factor, interest in the American mode of life (including musical bands), and an integrative wish also received appreciable loadings. Thus TG2 was connected with a 'fan' effect. This obviously concerned a subgroup of the Ss; the phenomenon was shown (in other contexts) to be relatively unconnected with TL learning.

These results as such can give clues as to how to use factors of this level for 'lowering the filter': pupils

interested in TC and/or TG1, can be activated in a natural way with materials concerning these, while TG2 'fans' may need extra incentive to give up eventual restraints when it comes to concentration on language. The relation of these factors to, e.g., situational variables is a problem to be tackled later (see 5.3.1.). Technically the factorial solution was neat and clean, speaking for valid contents, categories, and measurement. The 'little extras' (in F1, F2) yielded significant information of the differential connections of the TGs with TL learning.

The relative shares of the area accounted for by all factors in the analysis were as follows: F1 69.8 %, F2 17.2 %, and F3 13.0 %.

Situation related attitudes. In the pilot test, the 'filter level' of attitudes toward objects in the learning situation (teacher, methods, course) seemed somewhat undifferentiated: the general impression was one of a holistic setting. In the main study, two main streams and two auxiliary (or, compensatory) factors were detected. The two main streams were (1) the teacher and his way of teaching, and (2) the TL course and the way it was taught; thus it was 'methods' that did not clearly distinguish themselves. When more factors were extracted, the result was: (1) attitudes toward the teacher (F1), (2) attitudes toward the TL course (F2), (3) a factor reflecting situational dynamics, activity in FL learning (F3), and (4) a factor of methods, teaching arrangement (F4). In F1, the teacher factor, the teacher appeared as "competent", "professional" and "intelligent". This factor was by far the most powerful in the analysis; this was taken as evidence of the teacher's significance as the moving force in the learning situation. The course (F2) was assessed both affectively, cognitively and along psycho-motoric lines ('dynamics' might even here be the word). Concerning methods (F3), the picture was much the same as in the case of the course. As teacher related dynamics (F1) were also recognizable, and as there was a specific factor reflecting 'dynamics', action, activity, this should be considered the distinctive feature extracted

from the data. The obvious first-hand conclusion concerning the filter, then, is that lack of activity in the FL learning situation is a 'filter-raiser', while a dynamic/active approach, teacher, and course tend to lower it.

The relative shares of the area accounted for by all factors in the analysis were as follows: F1 71.4 %, F2 12.5 %, F3 8.8 %, and F4 7.4 %

5.2. Factorial structure of the FL SC

In the factor analyses of filter variables, three analyses concerned the FL SC directly. These were (1) the analysis of SC variables, (2) the analysis of inhibition variables, and (3) the analysis of the sum variables covering the whole affective area measured. Of the factors extracted in these analyses, those dealing with the FL SC are discussed below. The factors are presented in APPENDIX 3.2., with translated items to give a fuller picture of this central area.

From the theoretical point of view, the factors were strikingly 'clean' in the sense that all the high loadings occurred in one domain, or in a meaningful set of domains, with lower coefficients showing the eventual connections of the main dimension detected with other content areas. Regarding the analysis of SC variables, of the six factors extracted three were FL SC factors. The first of these (F1) reflected the 'FL SC proper', the second (F2) the 'ideal FL SC', while the third (F3) consisted of measures of the general academic SC and of levels of the FL SC. Of the seven factors extracted in the area of inhibitions, again, five were 'FL SC inhibition' factors (F1, F2, F4, F6, F7), with just one of these (F7) consisting substantially of other measures ('general academic'). Of the five factors extracted in the analysis of the sum variables covering the whole area, two (F4, F5) were FL SC factors with clear connection to other affective factors, whereas the other three factors showed pictures reversed to these, i.e., affective factors with

connections to the FL SC were formed.

FL SC factors. The three FL SC factors were the most significant ones accounting for the greater part of the variance accounted for by the analysis (42.5 %, 21.5 %, and 10.9 %). The first one (F1) was weighted on self-ratings of TL skills: that was the main content of the 'actual self' component reflected here. There was, however, a shade of self-esteem present in the ratings; at the specific TL and general FL levels, this formed the other, strong component of the factor. Thus the 'actual' and 'self-esteem' components of the FL SC were closely connected, if not inseparable. This had already become apparent in logical analyses of the single items at the pilot stage of research. (The problem is both theoretical and practical, one of measurement.)

The 'ideal FL SC' factor (F2) could be summarized under the item with the highest loading, "I'd like to master English like a native in every way" (x125). The other variables with high loadings supported this view of a native-like TL user at various tasks. Feelings of a new identity - eventually referring to good learning experiences - accompanied this aspiration at native-like 'perfection'.

The general academic - general FL SC factor (F3) was clearly a self-esteem one, weighted on the general academic side. The parallellism of the two aspects of SC and self-esteem became apparent here: strictly speaking, the 'message' of this factor might read, "Self-reliance in the general academic area is reflected on the FL SC".

FL SC inhibition factors. As was stated above, five factors out of seven were concerned with FL inhibitions. They accounted for 86.3 % of the variance accounted for by the seven factors altogether. Of this total variance, F1 accounted for 50.9 %, F2 13.2 %, F4 7.2 %, F6 6.4 %, and F7 5.6 %.

The first factor (F1) reflected a strong denial of the value of TL learning. Identity problems experienced in TL use

also came up with considerable loadings (representing the apparent cause of such value denial); understandably, aversion to TL use also received a loading worth noting here. The TL (eventually: negative experience in TL learning) seemed to be the cause of disturbance within this factor. This defence could be called 'denying the value of FL/TL learning owing to an identity problem'. Various apprehensions and inhibitions thus seemed to be summed up within this factor.

The second of the FL SC inhibition factors (F2) reflected feelings of inferiority and helplessness, accompanied by apprehensions during the lessons. This seemed to result in aversive/avoidance behaviour; the eventual cause of all this, which was present in the situation, were classmates, all of whom 'knew TL better' and 'were too good'. Thus 'significant others' present in the learning situation possibly became scapegoats for personal disturbance (which may have had its ultimate causes outside the situation). The factor could be named 'avoidance tendencies owing to feelings of incompetence'.

The third factor connected with FL SC inhibitions (F4) consisted of a set of negative feelings toward the TL teacher, but also feelings of uneasiness and unreality in the learning situation; the identity problem, 'having to stop being a Finnish speaker' was weighted considerably. The interpretation of this factorial dimension, then, reads 'unreal language class atmosphere, with the TL teacher as the scapegoat, and the identity problem as the apparent real reason'. (It follows that the real reason may well be weakness of the general SC.)

The fourth FL SC inhibition factor (F6) reflected feelings of alienation ("The strange world of FL lessons worries me") and depression ("English as a language depresses me"). Irritation, a clown's feelings when using TL, and reluctance to use it accompanied these. The dimension was interpreted as 'language shock manifesting itself in alienation and aversive feelings toward TL'. Even here, problems of identity were to be read in the composition of variables that received appreciable loadings (and the ultimate explanation possibly lies at the general SC level).

The last FL SC inhibition factor (F7) to appear in the

analysis was the only one to have a general academic component, weighted equally with the general FL and task TL dimensions. The significant variables reflected a fear of 'blunders', and laughter from others when the student was expected to 'perform' anything in school, and, on the FL side, a fear of mistakes and an inclination to aversive behaviour because of feelings of helplessness and of appearing ridiculous. Thus the factor could be termed one of 'general academic and FL communication apprehension'.

The FL SC inhibition factors, then, reflected various tendencies in the direction of avoidance/compensatory/ substitute/ surrogate reactions obviously resulting from frustrations in FL learning. Identity problems in venturing onto the new ground of a foreign language, outside the safety of L1 identity, seemed to be a constant background factor. The really big finding that seems to be growing out of the analyses is that FL SC inhibitions - the core of the filter - have a very clearly FL/TL specific content, but the ultimate causes very often seem to be of a more general nature, outside the FL learning situation, possibly concerning general SC weakness.

Summary of the FL SC. As the FL SC, including relevant inhibitions, is considered very central in this study, the main points of subsection 5.2. are summarized below in table form, to delineate more clearly the distinctive features of the FL SC. The results of the factor analyses can be summed up as follows:

TABLE 2. Main characteristics of the FL SC

1. The FL SC proper

    1.1. The actual and self-esteem components: self-ratings of TL skills + self-reliance, feelings of competence.

    1.2. The ideal self component: aspiration for nativelike TL mastery.

1.3. The academic SC reflected on the FL SC.

2. FL SC inhibitions

2.1. Value denial; identity problem; aversion to use TL: summarizing aspects of FL inhibitions.

2.2. Avoidance tendencies (fear of mistakes & 'performing'); feelings of incompetence; aversion to classmates.

2.3. Aversion to TL teacher; frustration (alienation, anxiety, depression); identity problem.

2.4. Language shock, alienation; aversion to TL.

2.5. Academic and FL communication apprehension.

The results of the factor analysis of the whole area of affective factors (see below) fit in here as a check-list, confirming the two content areas in the above table. The items processed and analyzed for the table are given in the factor solutions, APP. 3.2.

The affective factors of the whole filter area. The sum variables covering the affective area (x301-x325) were factor-analyzed for an overall picture of the main features affecting FL intake. The variables concerning the FL SC represented the three levels of the FL SC and the corresponding inhibition levels. The general SC and general academic SC levels were represented in the analysis similarly, and so were the other affective variables: motivational, trait, TL, and situation related attitudes. The emerging two factors highly relevant to the FL SC were an all-covering FL SC factor plus a corresponding FL SC inhibitions factor. With respect to the remaining three factors, information concerning learning motivation in formal FL learning, TL related attitudes and their connections, and various general level manifestations of anxiety was collected. The factorial solution was exceedingly clear (APP. 3.3.).

The FL SC factor (F4) received its highest loadings on the three variables representing the levels of the FL SC. The

general academic SC also contributed very significantly, showing its parallellism with the FL SC. The lower coefficients (.30 - .39) showing connections with other affective areas joined the FL SC with motivation: general FL learning motivation, instrumental orientation, and cognitive orientation. (The general proposition is that the FL SC affects/influences motivation.) The factor accounted for 5.3 % of the variance accounted for by the analysis.

The FL SC inhibition factor (F5) consisted clearly of sum measures of inhibitions at the three levels. The connections with the other content areas were with general academic inhibitions, ethnocentrism, and (conversely) the task FL SC plus situation related attitudes. Ethnocentrism had its highest loading (a= .31) on this factor, whereas trait anxiety and alienation were loaded very strongly on the factor of general inhibitions, forming the other main constituent there (F3). Ethnocentrism seems best construed as an extraneous factor which reinforces FL SC inhibitions. The general picture regarding this factor was clear enough, and completely confirmatory to theoretical assumptions. It accounted for 4.0 % of the variance noted in the analysis.

The other three factors in this analysis showed connections with the FL SC. In the first factor (F1), which was a general FL learning motivation factor weighted strongly on measures of the learning situation, freedom from inhibitions received quite a high loading, emphasizing the significance of this variable in lowering the filter. The FL SC, then, was also connected. The fact that situation related attitudes were the peak variables in this factor, measures of motivation receiving somewhat lower loadings, pointed emphatically to the prime importance of short-term motivation. Of the TL related attitudes, again, TG2/Americans did not contribute to this motivational factor, while TG1/Englishmen did receive a remarkable loading; the main contributor in this area was the target language itself. The factor accounted for 63.7 % of the variance accounted for by the analysis.

In the second factor (F2), a factor of TL related attitudes (connected with motivation), the FL SC received significant loadings. This emphasizes the contribution of the

FL SC to openness toward outgroups and 'alien' cultures. The influence, of course, can also go in the opposite direction, such openness promoting the growth of a sound FL SC. (In fact, this line of thinking opens up a pedagogical starting point: "Promote openness!"). In this factor, all TL related attitudes (including those toward TG2) were very significant, with cultural aspects figuring prominently. The main connections were with motivational orientations, especially 'integrative'. Remembering the strong communicative content of that variable (see 4.3. and 5.1. above), the factor underlined communicative aspects of FL learning. The factor accounted for 17.6 % of the variance noted in the analysis.

The remaining third factor (F3) consisted of measures of trait anxiety and alienation, low/weak general SC, together with very high general and general academic inhibitions. It accounted for 9.2 % of the variance accounted for by the analysis. The very strong contribution of generalized/general level negative, filter-raising elements was the characteristic feature of this factor, to be noted in attempts to decipher the whole filter effect. There was a significant connection of this dimension with the FL SC: even here, the main influence may go either way. The main proposition, of course, is that these general level affective 'throttles' - which largely have their origins outside FL learning - affect the more specific level, the FL SC. However, also generalizing effects from the more specific SC domains - the FL SC - must be assumed, especially in the case of trait anxiety and alienation. Some more light upon this problem area is shed by the LISREL analyses under 5.3., further observations are made under 5.4., and finally in the cluster analyses, especially that of the whole filter area, under 5.7.

Note. In factor analysis, orthogonal rotation (Varimax) seeks factors with minimal common variance. When the content - and the underlying theory! - are clear, the main dimension appearing in a factor may show the same quality; the variables receiving lower loadings may give information equally significant concerning connections with other factors or theoretical categories. This is what typically happened in the

factor analyses reported under 5.1. and 5.2.

5.3. Influence of filter factors

In the section dealing with filter theory (2.2.1.), brief analyses of the relationships between the 'levels' of the construct were undertaken. Of the 'levels', the FL SC was posited to influence others. It was expected to affect measurably the Ss' TL related and situation related attitudes; in the long run, the self-ratings were hypothesized to affect even personality traits such as anxiety; finally, the influence of the FL SC on motivation was expected to manifest itself strongly. Correspondingly, negative influences of inhibitions were hypothesized.

Personality traits, as very generalized attitudes, were expected to exert an influence on other, less generalized attitudes, but owing to factors like the many reciprocal influences, and external influences on the development of the traits, hypotheses here were difficult to form.

TL related and situation related attitudes were expected to affect motivation.

The causal relationships within the filter at large are analyzed below under 5.3.1.; some essential problems concerning the FL SC in particular are discussed further under 5.3.2. The LISREL models are presented in the appendices (APP. 4).

5.3.1. Filter factors in a general model

Various LISREL models, formed on the basis of theoretical assumptions, were tested, and an acceptable model representing the relations of the empirical measurements on the indicator variables (sum research variables) and 'latent variables' (i.e., the theoretical concepts) was constructed (APP. 4.1.). In the best model that was formed within the limits of time and material resources, the measures for general and general

academic self-concepts and inhibitions were left out. Ethnocentrism proved to function somewhat differently from the other traits observed in this study, namely anxiety and alienation. Consequently, it was discarded from this analysis too, to be analyzed by other methods (see 5.4.). Motivation was represented by the measures of general FL learning motivation, achievement by ability grouping (x186) and TL school grade (x188). The significant paths of influence are discussed below.

The main observations were: (1) The FL SC was shown to influence personality traits, i.e., anxiety and alienation; even stronger influence from inhibitions was revealed. (Note, however, that (a) generalized anxiety and alienation can largely be formed by extraneous incentives, and ethnocentrism IS of an extraneous nature, and that (b) 'trait' observations here do not concern ethnocentrism at all.) (2) There were significant paths of influence from the FL SC and inhibitions to TL related and situation related attitudes, and from these, to motivation. The most significant path would seem to be from the FL SC to TL related attitudes, from there to situation related attitudes, and further, to general FL learning motivation. The negative path coefficient between the FL SC and situation related attitudes is possibly to be understood as the weak FL SC lowering positive attitudes - and raising the filter - in the learning situation. (3) Motivation influenced achievement; positive achievement, again, promoted the FL SC and lowered inhibitions significantly. (4) Recursive paths were established (a) between the FL SC and inhibitions and (b) between achievement and TL related attitudes.

The goodness of fit index (GFI) for the model was .89 - narrowly 'good' - and the ratio of the Chi square value to the number of degrees of freedom 4.8, which was judged to meet the criterion (see Gardner et al. 1983).

In another model, which was also found acceptable, the FL SC also showed significant direct influence on achievement while inhibitions seemed to function via the FL SC. To reach a fully developed and differentiated model of the whole filter area measured, a good deal of further developmental work would

have been necessary. For the reasons given, further model development was given up at this point. For now, certain instances of 'influence' are interpreted tentatively, and some others must be concluded, on theoretical grounds, from correlations between the measures for the concepts.

Summing up, the results (1) confirmed the hypothesis of anxiety and alienation being developed from negative affects at less general levels (although extraneous sources are by no means excluded). (2) The loop of influence, from achievement to the FL SC (and inhibitions); and further via the two groups of attitudes (TL and situation related), posited to augment motivation, to motivation; and finally, from motivation to achievement, was verified almost dramatically. (For a close-up of some essential relations, see further analysis of the FL SC below.) (3) Interplay between achievement and TL related attitudes (TL, TC, TG1-2) showed a negative influence, interpretable as (a) negative learning experience affecting these attitudes and/or negative TL related attitudes lowering achievement. (In any specific case in the field, it is possible to ascertain which way is the case in question.)

5.3.2. The FL SC model

Concerning the FL SC in particular, it was hypothesized that (1) the FL SC and inhibitions stand in close (negative) relationship; in fact that the relevant inhibitions could be subsumed in the concept. (2) A further hypothesis was that the FL SC affects other parts of the filter (see 5.3.1 above), and motivation in particular; its influence on achievement was expected to go largely via motivation. Inhibitions, the 'reverse side' of the concept, were assumed to show similar, but reverse influences, although the main connection was posited as existing between inhibitions and the FL SC.

The model for LISREL analyses was formed on the basis of these hypotheses. With the time and material resources allotted, an acceptable model of the relations between the

central latent variables, i.e., the FL SC, inhibitions, and motivation was arrived at. The three significant paths of influence showed that (1) there was a very strong reciprocal, negative relationship between the FL SC and inhibitions, (2) the FL SC affected FL learning motivation very strongly, and that (3) there was a weaker, yet significant negative influence from inhibitions directly to motivation.

The goodness of fit index (GFI) for the model was high (.95), and the ratio of the Chi square value to the degrees of freedom acceptable (4.1; cf. above). The model was accepted as representing the closest relations and influences of the FL SC (APP. 4.2.).

Another version of the model, with achievement included, showed that the FL SC influenced achievement directly to a significant degree; still, this path was weaker than the one leading to motivation. The other findings of the model accepted as the best one were repeated here. The influence of motivation on achievement, however, was not shown significantly in this model. Its GFI was good (.93), but the critical ratio (5.2; cf. above) exceeded the criterion (5.0). Thus the model yielded information fully harmonious with the hypotheses, but did not quite meet the criteria set for acceptability. At this point further elaboration of the model was interrupted for the reasons given. The results achieved were accepted for reporting here, and the materials were put aside to await eventual further processing.

To sum up, the FL SC and relevant inhibitions were shown to influence each other strongly, in a reciprocal way. This was taken as strong evidence for the validity of the hypothesis concerning the mutual relationship between the two subconcepts. It can be argued that the results support the subsumption, or 'reverse side' hypothesis; representation of the FL SC as the core of the concept, with inhibitions around to protect it (see FIGURE 3 under 2.2.2.) seems very feasible in the light of this evidence: note also that the main connections of inhibitions were with, or via, the FL SC.

The FL SC influenced motivation more strongly than achievement directly (Model 2). Although the evidence is not

conclusive, it supports fully the hypothesis, and confirms previous research conducted with crude measures of 'self ratings' to represent (a part of) the FL SC (Laine 1978).

The upward/downward spiral (cf. 5.3.1. above), so crucial to achievement in the long run, was reflected dramatically in these models.

5.4. Further observations concerning the filter and the FL SC

In this sub-section, research results concerning the relationships between the 'levels' of the filter, and those within the construct of FL SC, are analyzed further. Here a number of basic assumptions, and results reported under 5.1., 5.2., and 5.3. are taken under scrutiny. Also the influence of filter factors on TL achievement, as revealed by factor analyses of criterion and filter analyses combined (see APP. 5.2.), is analyzed in this context.

5.4.1. Relationships and influences of filter 'levels'

Motivation. General school learning motivation, in terms of the short scales used, was quite distinct from the main phenomenon in this study. Its connections with general FL learning motivation were shown to form a world of its own. (Cf. later the section on differences between the strata, 5.6.).

In the criterion/motivation factor analysis, general school learning motivation was connected with ability grouping, GPA, and TL grade. The coefficients were highly significant statistically, but inconspicuous as factor loadings. The correlation of general level motivation was strongest with general academic achievement (GPA, a= .30), which stands to reason; the lower correlations with TL related criterion variables evidenced the general parallellism of the two aspects of motivation. The essential 'message', then, was that of academic ability and achievement going hand-in-hand with academic motivation: no big news.

Two connections of FL learning motivation with criterion variables came up clearly. They were (1) communicative and self-expansive FL learning motivation proving to be a sex (girls), ability, and spontaneous TL use factor, and (2) spontaneous school FL learning being connected with academic ability (ability grouping, GPA, TL grade). What can be picked up here as meaningful observations considering FL pedagogy is (1) the obvious link between communicative/self-expansive instruction and spontaneous TL use out of school, and (2) spontaneous learning leading to good results: no great novelties, but worthy of emphasis.

These observations help us to interpret in some detail the influence of motivation on achievement variables, shown in the LISREL models (see 5.3. above).

Trait variables. It became apparent in several contexts that 'trait variables' in this study were best dealt with separately, ethnocentrism (+ some shade of authoritarianism) on the one hand, and anxiety + alienation on the other (see esp. 5.1. above). Secondly, the generalized nature of these variables was expected to manifest itself in influence on other filter variables. Some indication to that effect was found in the LISREL experiments; one of the models actually seemed promising. At this stage, however, the problem was left with some observations concerning anxiety and alienation (see 5.3. above). Later, ethnocentrism was shown to be affected by parental influence (see 5.5.1. below).

In the factor analysis of trait and criterion variables combined (APP. 5.2.), anxiety + alienation showed no linear connection with the criterion variables. Ethnocentrism, again, was correlated with two variables in the 'criterion' group: sex/boys (a demographic variable) and reluctance to use TL spontaneously outside school. All of these bits of information concerning the relations of trait variables are in line with the assumptions, but the area needs a great deal of elaborative research, especially concerning the issue of relations between trait variables in a total model of filter factors.

TL related variables. Factors in this area were (1) attitudes to TL/TC/TG1; (2) attitudes to TG1; (3) attitudes to TG2 + 'fan effect' (see 5.1.). A strong path of influence passed from the FL SC over TL related attitudes to situation related attitudes, and further to motivation; TL achievement affected TL related attitudes and vice versa. Inhibitions influenced these attitudes negatively. (See APP. 4.) The factor analysis with criterion and TL related attitudes combined did not bring very many new things to light. Girls showed more interest in components of the first factor: TL, TC, and TG1/Englishmen. These TL related attitudes were also connected with spontaneous TL use outside school. TG2/Americans were only slightly connected with one criterion variable, spontaneous TL use outside school. The criteria mainly formed a factor on their own, yet connected with a wish to get better acquainted with TG1, wishes to 'know the inside' of TL, and wishes to learn more about target culture. Thus a favourable combination of criteria - especially high achievement - was connected with aspects of genuine interest, indicative of 'low filter'. This, then, was the working out of the relationship that was shown to apply both ways between TL related attitudes and achievement.

Situation related attitudes. Attitudes toward central objects in the learning situation - teacher, methods, course - were shown to collect on separate factors, with a strong dynamic aspect pervading the situation (see 5.1.). The path of influence from TL related attitudes over situation related attitudes to motivation was noted in the sub-section above. There was also a path from the FL SC to the 'situation' directly (see APP. 4.). Thus the 'locus' of this set of attitudes was established as partly determined by the FL SC and TL related attitudes. The factor analysis of situation related attitudes and criteria combined (APP. 5.2.) showed a slight linear connection between these attitudes and the learners' TL grade. Further, spontaneous TL use outside school was connected with willingness to have more TL spoken in school and with positive attitudes toward the TL course. Whichever here is the ultimate cause, the link was notable,

for didacticians to ponder.

The factor of teacher attitudes showed practically no linear correlations with the criteria. The criteria, once again, largely collected together as a factor on their own. In addition to the dynamic nature of the learning situation as a filter-lowerer, then, the location of these attitudes in the total field, and their indirect influence on learning outcomes remained the main findings.

The FL SC. As was reported under 5.2., FL SC items yielded 3 FL SC factors, 'actual + self-esteem', 'ideal', and 'general + general FL'. The two first-named SC components were largely interwoven. The general level factor, again, gave us to understand that the general self-concept may depress (or, elevate) the FL SC. The LISREL analyses could shed no new light upon the relationships of SC components at the general level, as the model(s) developed dealt with FL SC levels only. Therefore, the factor analysis of the whole filter area was of special interest as the general background, among other things, could be assessed through it, and the factor analysis of FL SC and criterion variables combined even more so as to produce detailed information at the item level.

In the former analysis (see APP. 3.3.), the moderate intercorrelations between the general and specific levels of SC were demonstrated clearly; in fact, it served as a school example of the principle 'the more specific, the more relevant' (cf. Laine 1986c). There was a slight connection with general school learning motivation too, and one some degrees stronger with FL learning motivation: all of this testifies to the hierarchical organization of the concepts.

In the criterion/FL SC factor analysis (APP. 5.2.), few new observations came up. Still, the Ss' TL grade was remarkably connected with their FL SC; the FL SC aspects which were accentuated here reflected general FL level self-esteem ("I'm really good at FLs"), perhaps mingled with 'actual self' notions; at the task level, self-assessment of actual skills was foremost; at the TL specific level, actual self and self-esteem aspects shared the field. For one thing, this result illustrates how the real state of things, experienced at the

task level, is reflected as self-esteem - or lack of it - at the general FL level. The end result is success shown in the TL grade, which, again, affects the FL SC ...

The positive ideal FL self - aspirations at native-like TL skills - was also clearly connected with criterion variables, achievement (TL and general academic) and various forms of TL use outside school. These correlations probably evidence two-way influences, being parts in a loop, or spiral. (Eventual intervention programmes just have to break their way into the spiral; which end - here: activity or aspiration - is not decisive. Yet the principle of imparting to the learner a taste of success points the reformer to the action end.)

As was to be expected, the general academic SC (especially: self-esteem) was quite strongly connected with the achievement criteria. Moreover, it had some connection with the FL SC self-esteem component, i.e., it touched the generalized level of FL SC notions (see Rep. 1, 2.2.4.). The scrutiny of this chain of correlations re-emphasized the significance of general level phenomena in learning a specific subject.

In sum, the chief results of this examination of various sets of analyses concerning the FL SC were some close-up views of the rising-declining spiral so essential in FL study, in which the FL SC can be considered the crucial link.

Inhibitions. Value denial, avoidance tendencies (owing to feelings of incompentence), negative feelings toward the TL teacher, language shock, alienation, school and FL communication apprehension came up strongly in the basic factor analysis of inhibitions (5.2.). In the analysis of the total area of filter variables, the FL SC inhibition factor showed connections with the more general levels of inhibitions, providing proof of the hierarchical nature of the concepts (as happened in the case of self-concepts). The correlation of ethnocentrism with this factor was a notable finding too.

In the LISREL models (APP. 4.), FL SC inhibitions

participated in the same spiral of influence as the FL SC, inversely to the latter; the relation of the two sets of measures was in accordance with the theory, and the FL SC was seen as exerting its influence through the relevant inhibitions.

Lastly, in the factor analysis of inhibition and criterion variables combined, the general FL SC inhibition factor was connected with boys, the short TL course, low TL grades, and no or little TL use outside school. Moreover, boys, with low TL grades, were connected with feelings of uneasiness and unreality in FL lessons, and putting the blame on the teacher. Third, lack of coping mechanisms, and feelings of inferiority (FL and TL related) were connected with low TL grades; similarly, general academic inhibitions were connected with low GPA. These findings, then, offered ingredients for a typology of 'filter' types (resumed under 5.7.); they confirmed some theoretical views; and also, they may provide the teacher with some of the keys to the situation.

In short, the analyses dealing with inhibitions largely (1) identified a number of these inhibitions; (2) verified theoretical assumptions; and (3) produced information useful as such to a practician.

5.5. On the development of the filter

In the context of this study, a thorough investigation into the development of the filter was not possible. Still, a number of background variables were included to help delineate some points of filter development (see 4.3.).

The causal relationship between these determinant variables and the constituents of the filter can be inferred logically (see Rep. 1, 5.). The method of analysis was factor analysis: a determinant's correlation with (=loading on) a factor whose main content could be identified from previous analyses (see 5.1.-5.2.) was interpreted causally.

The variables elected to represent determinants of the

filter in the learner's life space came from a set of single items. Some of these 'remained single', while sum variables were formed of others, on the basis of their content and the observations made in the 'screens' (see APP. 1.). The determinant variables formed five main dimensions:

1. Parental support (sum variable of 4 items).
2. Support from peers (sum variable: 'friends' 2 items + 'our class' 2 items).
3. The TL teacher (3 single items).

These research variables were designed to represent the three central groups of 'significant others' affecting the Ss' TL related life space (cf. Rep. 1, 5., and 4.3. above). The teacher items stood for different teacher types - 'authoritative', 'democratic', and 'laissez-faire' - and therefore they could not be combined into one sum variable. (The results actually showed differential influence from the teacher items; see below.)

4. Two types of classroom activity, representing the 'atomistic' and the 'processual' approaches to TL learning, were hypothesized to affect, in the first place, extrinsic and intrinsic motivation, respectively. Of these, intrinsic motivation was assumed to function as a 'filter-opener', while extrinsic motivation was considered indicative of indifference, and 'curbed' activity (consider, e.g., the results under 5.1.).

5. TL contacts outside school: foreign pen-friends. This single item variable qualified in the 'screens' in an outstanding way. Allegedly, it represented outer world incentives in the development of 'low filter'.

Below, the findings are discussed under the categories of 'significant others' (5.5.1.) and other sources of incentives (5.5.2.).

5.5.1. Influence of 'significant others'

Parental support. Help, support, and stimulation from parents - eventually augmented by their own FL skills - affected the following aspects of the filter positively, in a filter-lowering way:

- general FL learning motivation;
- attitudes toward the TL and TC;
- attitudes toward the TL course and toward FL learning in school (as opposed to out-of-school learning);
- the (positive) development of the FL SC.

In the negative case, parental and home influence was shown in the development of ethnocentrism and the 'reverse side' of the FL SC, inhibitions.

Thus parental support was correlated with all central 'levels' of the filter (with teachers and teaching by emphasizing the importance of school learning). The correlations were relatively low, forming a kind of 'superstructure' to the well-known factors extracted at each level. As a rule, in the analyses reported in this chapter, there appeared a clear main dimension plus this 'super-structure' formed of determinant variables (see APP. 5.1.).

Combined with parental and home influence were in several cases TL contacts outside school, and the processual approach to school TL learning. It is conceivable that parents also affected the appreciation of these sources of incentives in a positive way.

Support from peers. This set of items implied support from peers at large on the one hand, and 'our class', as the essential community where TL learning takes place, on the other. Typically, the influence from both directions was combined: friends from whom the Ss received support if they were troubled were often found in a class where "things were done together" and where the S felt he could "be his natural self" The main influences of peer and class variables yielded

a variegated picture:

- there were signs that peers promoted the appreciation of out-of-school FL learning;

- peer and class factors joined to develop positive attitudes toward the American mode of life; this phenomenon, too, was relatively independent of school FL learning.

The above findings are to be regarded as distractors rather than supporters of school FL learning, developing indifference toward it.

- The peer and class variables, however, were also found as supporters of a good learning atmosphere in a harmonious, teacher-directed (sic!) learning situation. (The hint is more than obvious: it is the TL teacher that may harness the power of Ss' interests to good use.)

- At the general SC level, peer and class variables supported the Ss' self-esteem considerably;

- however, if Ss felt that 'things were not done together', and if they did not feel at home in the FL class, this contributed to the development of inhibitions at the general academic SC and the various FL SC levels. Fear of 'performing' anything in class, and of 'making blunders' came up here in particular. (The observation, in fact, is like a direct quotation from a sourcebook of pedagogical theory.)

The sum of the above findings concerning peer influence is that peers, especially the S's classmates, are a very significant filter-opening factor, but essentially to be controlled by the FL teacher. (There is great novelty in this; it is analysis in terms of the filter that gives it new significance.)

Teacher influence. Two of the three teacher types reflected in the teacher variables, viz., the authoritative and the democratic, came up in the analyses as significant determinants of filter development; the third type, 'laissez-faire', was a 'zero influencer'. The two 'types' appearing together are perhaps best seen as two qualities of an 'ideal' teacher type. These two qualities, authoritative and

democratic leadership, affected the following filter-related aspects:

- the intensity of general FL learning motivation;
- the development of a positive class atmosphere (which came up quite strongly);
- the development of Ss' positive attitudes toward TL and TG1/Englishmen (which group in this material was systematically combined with TL/English more strongly than was TG2/Americans);
- the two 'types' also promoted the growth of positive attitudes toward the FL teacher himself (the permissive type did not contribute even here);
- further, they seemed to be able to dissolve some of the Ss' inner disturbances of the SC.

In addition to these beneficial influences, a phenomenon was detected where all teacher types contributed to a state of things where Ss felt bad in various ways in the FL lesson, and felt that the teacher 'looked askance' at them. This was probably the notorious case of negative learning experiences leading to feelings of anxiety; the teacher became the obvious scapegoat (cf. Rep. 1, 56 ff.).

These findings emphasize strongly the FL teacher's role as a filter-lowerer in the actual TL learning situation. (Note also the conclusion drawn in the previous sub-section.) It goes without saying that the various forms of teacher influence may also assume negative forms, and act as very powerful 'filter-raisers'. From the teacher's point of view, also the scapegoat role seems to be an unavoidable part of the bargain in dealing with some learners. Lastly, the FL teacher's permissiveness seemed to bear no good fruit.

5.5.2. Incentives in the learning situation and outside it

Classroom activity. Of the two approaches reflected in the classroom activity variables, the processual approach item had

a number of positive correlations, whereas the atomistic one had fewer, but quite clear, negative connections. As regards the former set of influences, some seemed reciprocal. Such relationships were the correlations of the processual approach with

- the intensity of general FL learning motivation;
- teacher-directed classroom activity discussed previously under peer and teacher influences;
- parental support;
- spontaneous out-of-school TL use (pen-friends);
- possibly also attitudes toward TL and TGl/Englishmen,

and the TL teacher were affected by this approach, but also conversely, such attitudes may promote active processing.

Further, active processing was adjudged to promote the development of the Ss' FL SC, as well as to ward off inhibitions: this was taken as a sign of applying oneself leading to self-reliance and integration of the SC.

The atomistic approach item was negatively correlated with Ss' attitudes toward TL methods, the course, and the teacher; its positive correlations were with specific and task level FL SC inhibitions. Thus this incentive, common in the FL learning situation, promoted negative situation-related attitudes and FL SC inhibitions.

The loadings of the process variables were relatively low, but the picture drawn by these connections was fully coherent. It was concluded that useful insights into the influence of these variables on filter development were gained even at this level of measurement.

TL contacts outside school. As was stated above, incentives outside school activities were represented in the analysis by a single item, pen-friends, which had a considerable number of connections with filter variables. The main findings were that these TL contacts

- promoted general FL learning motivation, and
- were negatively correlated with ethnocentrism.

Both findings - not surprising in themselves - were considered significant as hints for FL pedagogy: promoting correspondence with TL speakers offered itself here as a potential cure for certain cases of high filter.

The results gained in this section of the study lack some of the reliability that the rest of the investigation has been shown to have; this is due to the simple level of measurement of several variables. Also, the important question of achievement/poor achievement affecting the FL SC, and the rest of the filter, is not discussed in this context (for this, see previous sub-chapters of Ch. 5). At any rate, the findings were so consistent and clear-cut that they can obviously serve as a worth-while sketch of some central aspects of filter development in the general school setting.

5.6. Regional and city/country differences

As was set out under 4.1., the sampling scheme included two stratifications, one regional and the other between city and countryside schools. On the basis of several arguments, the results were claimed to approach national validity, and to offer starting points for research in other school settings. A brief account of the differences and non-differences is given below, with the view of drawing special attention to this aspect of research. The computated data, results of t-tests of difference, are given in APPENDIX 6.

5.6.1. Regional differences

In the case of the two regions, the districts of Central Finland and North Karelia, the most important finding was one of non-difference. In analyses covering the whole filter area measured (sum variables x301-x325), only three pairs of

variable means out of twenty-five showed differences which were 'almost significant' statistically ($p <= .05$). On the whole, then, it was argued that from the regional point of view, the samples were drawn from the same population. This was in accordance with expectations (see 4.1.).

The three differences that came up, however, did not seem random at all, because they all appeared in a clearly defined content area. Ss in North Karelia were slightly more highly motivated to learn FLs than those in Central Finland; their general academic self-concepts were better/higher, and so were their general FL self concepts. In sum, the FL learners in this region showed more interest to learn FLs, and were somewhat better adapted to doing so, just as they were better adapted to school learning generally. What regional differences actually account for these results is not clear; what was noted in the process of data collection was that the slowest and 'hardest' school classes were in Central Finland. This was considered a sign of somewhat lagging motivation. This observation is in line with the outcomes of testing: concerning the Ss' school and FL learning, dissonance was greater in one area, and adaptation better in the other.

5.6.2. Differences between city and countryside schools

City and countryside schools did not differ drastically in size for reasons given (see 4.1.); it can be argued that the main difference was that of the general setting. The differences between the settings, again, did appear drastically. Out of the twenty-five analyses, eighteen showed significant differences, and only two of these were significances of the lower category ($p <= .05$), the rest being divided evenly between 'significant' ($p <= .01$) and 'highly significant' ($p <= .001$) differences. Below, cases where city schools were on the stronger side are reported first, to be followed by those cases where the countryside had higher measures of filter variables.

In the area of general FL learning motivation, and the

three modes of orientation, city schools surpassed country schools in a highly significant way; only instrumental orientation showed a somewhat smaller difference ($p <= .01$). The result, then, reads bluntly, "Students in cities are more highly motivated to learn foreign languages than those in the country". General school learning motivation showed no statistical difference!

Next, TL related and situation related attitudes were clearly more positive in city schools. The results were so consistent - repeating themselves in these content areas seven times over - that the explanation must reside in the general setting, and cannot be only a single factor in it.

On considering the above results, it came as no big surprise to find out that Ss in city schools also had stronger FL SCs. This was true at the general, specific, and task levels alike, although the differences compared with the situation in the countryside were not quite as large as in the case of motivation and the attitudes supporting motivation.

Students in countryside schools, then, appeared as underdogs in the filter issue. To complete the picture reflecting city superiority concerning FL learning motivation and the FL SC, students in the countryside were more ethnocentric and anomic, and were more troubled by general and specific level (FL) inhibitions. It is to be noted emphatically that their general academic self-concepts were better than with Ss in city schools: the problems lay in the field of FL learning. Supporting this conclusion, no statistical differences occurred in the measures of trait anxiety, general, and general academic inhibitions: to sum up, the general school learning setting seemed the same, even slightly more favourable in the countryside, but for some reason of general nature, the school FL learning situation in the country owed a consistent inferiority in comparison with cities. The reason(s) for this state of things did not come up in this context; the two big alternatives are poorer resources, or general attitudes (or both).

The big line of demarcation appearing in the research

material, then, was not regional, or geographical, but between city and country. The result is convincing enough to give cause for further research (and programmes aiming at amendment).

5.7. On filter and non-filter FL learner types

In the school FL learning situation, it is conceivable that various types of learner can be found, manifesting differential degrees of filtering, or freedom from it. The research material was cluster analyzed with this problem in mind. Analyses of the FL SC and the corresponding inhibitions were conducted at the item level; in addition, a third analysis comprising the whole area measured at the sum variable level was carried out. Analyses of variance were undertaken to check the significance of distinctions found. The groups selected for reporting on were further investigated as functions of ability grouping and TL achievement (TL grade). The results aim at an emotive typology of FL learners, for easy identification in research and FL teaching. A summarizing report is given below; cluster analysis data is given in APPENDIX 7.

5.7.1. FL SC types

In the cluster analysis of FL SC items, a solution of three clearly distinguishable groups was selected. Two of these (Gr.1, Gr.2) showed some weakness, or problems, of the FL SC, while the third (Gr.3) distinguished itself by balance and well-adaptedness.

Group 1. This group's (N= 218) TL achievement was mediocre (TL grade mean= 6.80; whole material/age group= 7.35), but not the lowest. Ss in this group typically studied the 'medium' course of TL. Their actual FL SC component - measures on items purely 'actual', not mixed with self-esteem - was the lowest of all groups; they also showed the lowest

self-esteem in view of TL speaking skills. They, however, possessed a high ideal FL self-concept. This, then, was a group of (medium course) TL learners who apparently suffered from some FL SC problems owing to a discrepancy between aspirations and achievement; with many, the triggering cause possibly lay in the area of TL speaking skills. The size of the group was quite large (N= 218), 41 % of the cases accepted into the analysis.

Group 2 (N= 62) consisted of Ss with considerably low TL achievement (TL grade mean= 6.44); still, these were not typically students of the short, or 'general' TL course, but those of the 'medium' one. Their actual self/self-esteem - items tapping both aspects, and some of those measuring self-esteem alone - were the lowest of all groups. In contrast to Group 1, their ideal self concept was low too, the lowest of all groups: they rated themselves as 'no good at FLs' in general. While Gr.1 had its specific FL SC problems, Gr.2 represented obviously the 'Weak FL SC Type'. Its size was 12 % of the sample studied. The remarkable thing about it was that it was typically the 'medium' course students that had this problem, not the 'general' course ones. (In the prevailing situation, it was presumably the 'medium' FL learner that was distressed, because of the accomplishment demanded; the 'shorts' were probably exempted from any high aspirations.)

Group 3. This was clearly the high-achieving (TL grade mean=8.06), medium/extensive course 'Strong FL SC Type'. Ss in this group possessed the highest actual and ideal selves, and their self-esteem was the strongest of all groups. Here, then, the balance was good, and so were the outcomes of learning. It would seem that almost half of the population (in the sample N= 252, 47 %; Gr.1 + Gr.2 = 280, 53 %) belong to this FL learner type with a sound FL SC. (Consider also the ratio of figures concerning Ss with high/low inhibitions under 5.7.2.)

5.7.2. 'Inhibited' vs. 'uninhibited' types

A cluster solution of four FL SC inhibition groups was chosen for reporting. Two of these groups reflected 'inhibited' FL learners, with a clear difference between them. In the remaining two groups, Ss with a smaller difference in their 'uninhibitedness' were assembled.

Group 1. This was very clearly THE filter group, characterized by all FL SC inhibitions, on most items with very clear differences from the other groups. It showed the highest measures of anxiety, alienation, value denial, language shock, fear of 'presenting' anything in class, lack of coping mechanisms, and identity problems. Their TL achievement was low (TL grade mean= 6.51; whole material= 7.35). Typically, however, they studied the medium course of TL, not the shortest (cf. Group 2 in the FL SC analysis). The size of the group was also considerable (N= 154), 29 % of the sample belonged to this 'Filter Type 1'. In comparison with the FL SC types, this 'inhibited' group would seem to comprise largely Ss in Gr.2, and partly those in Gr.1. The relieving aspect about this group was that, considering the average means of items, their filters did not seem to be totally closed, but partly open.

Group 2. The group was characterized by general alienation from the 'strange world of FLs'. At the specific and task levels of inhibitions, this was shown consistently in avoidance behaviour in the field of TL use, in FL communication apprehension, and task level feelings of uneasiness. On the measures of a number of these items, the inhibitions did not seem overpowering; still, the picture was consistent. Typically, Ss in this group, 'Filter Type 2', were average learners of TL, most of them in the 'medium' course. Their number (N= 75) seemed to indicate that about 15 % of 'average' students have less grave problems - essentially problems of identity - in learning a FL.

Groups 3 and 4. Ther were two non-filter groups, both of

which showed the lowest measures of inhibition on approximately one half of the items. The lowest scores were distributed evenly over the general FL, specific TL, and task TL areas. Both groups consisted of 'medium' and 'extensive' course students, Gr.4 standing close to 'mediums' and Gr.3 to 'extensives'. The latter was also the more high-achieving group in TL study as measured by school grades (Gr.4: 7.70 and Gr.3: 7.93). Both groups were quite large (Gr.4 N= 168, Gr.3 N= 132), yielding an estimate of 57 % of non-filter students in the research material.

Group 3 found FLs, TL, and TL speaking important, the TL not irritating or depressing; consequently, they showed no task avoidance. They found the class atmosphere free, and did not suspect the teacher of having some grudge against them; they did not consider the teacher's tempo or demands too high; to top it all, they did not have problems between their L1 and TL identity. In short, this 'Non-filter Type 1' distinguished itself by general well-adaptedness for FL learning. In the material, 25 % of the Ss belonged here.

Group 4 showed no/little problems in role adoption as FL speakers, nor did they suffer from 'masquerade' or 'clown' effects, at either the general or task level. There was little experience of 'being funny', 'ridiculous', 'like an ass', and consequently, no refusal to use TL. In the TL lessons, they felt easy, did not think their classmates were 'too good', and showed little fear of mistakes; their coping strategies in FL learning were in order. All in all, what characterized Gr.4, then, was freedom from the masquerade/clown effect good adaptation and readiness to learn/use TL in the FL class setting. This forms a very good emotional basis for formal FL learning. In fact, the characteristics of this group probably indicate very 'low filter'. In the research material, 32 % of the Ss belonged to this group, 'Non-filter Type 2'.

The cluster analysis of FL inhibitions produced an estimate of 57 % of more or less filter-free FL learners and 43 % of those more of less hampered by their filters in FL

study. As the figures for 'sound FL SCs' were somewhat lower (47 %; see 5.7.1.), this could be a sign of general level self-notions depressing the FL SC (consider especially the large FL SC Gr.1), while in the specific area of FL learning defences in many cases were lenient. Yet, 29 % had grave inhibitions, but only 12 % had really weak FL SCs: apparently a number of students with inhibitions had been able to cope with them successfully.

5.7.3. 'Overall filter' types

To get a picture of 'overall filter' types, the sum variables (x301-x325) covering the whole filter domain were cluster analyzed. Three distinct groups were detected, two of which were on the filtering side, the third being the 'general non-filter type'.

Group 1 was formed of 'general' and 'medium' course students with low achievement (TL grade mean= 6.05). It showed small general academic and general FL learning motivation; the same was true of all kinds of motivational orientation. The Ss in this group had the highest measures on ethnocentrism; their TL and situation related attitudes were the least positive; to round it off, their FL SCs were the weakest. Even though they were not, on the average, badly hampered by inhibitions, this area also showed the most negative state of affairs. This was the 'General Filter Type', comprising 13 % (N= 62) of the cases accepted into the analysis.

Group 2 consisted largely of 'medium' course students with mediocre learning outcomes (TL grade mean= 6.84). The group was also 'medium' on most filter scores. It scored highest on measures of trait anxiety and alienation (although it was lowest on ethnocentrism). Further, the Ss in this group had the weakest general SCs, and were most troubled by general, and general academic inhibitions. Their situation related attitudes, however, were quite positive: the root of the evil was apparently outside it, and possibly outside

school. This, then, seemed to be a group of Ss filtering for general personality reasons, or reasons other than FL study. They were 186 in number (!), representing a whole 38 % of the sample.

Group 3, consisting largely of students of the 'extensive' TL course, with good results (TL grade mean= 8.12), showed the most positive state of the filter in all aspects, and at all levels. Ss here had the highest measures of all aspects of motivation, the lowest on the filtering 'traits'; they had the most positive TL and situation related attitudes, the best all-round SCs and FL SCs, and the least measure of general, general academic, and FL SC inhibitions. The type reflected here was very clearly the 'General Non-filter Type', representing 49 % (N= 241) of the sample.

Generally speaking, the results in the whole filter area confirmed the notion that the proportion of filter and non-filter types in school FL learning is approximately 50-50. The result indicating that, in the majority of the cases, the ultimate reason for filtering may lie outside the FL learning situation, even outside school, remained to be checked and counter-checked in other contexts. Still, the results of this analysis are fully in line with observations made in the other two; judging by the figures here, FL learners filtering for purely linguistic reasons would seem to stand in a ratio of 1:3 to those whose 'filters are high' for more general reasons.

5.8. Summary of results

By way of summary of the results of the Validation Study, the problems posed under Ch. 3 are here taken under scrutiny one by one, in order to see to what extent they were solved in the given circumstances.

Problem 1 concerned the content and distinctive features of the affective filter in formal FL learning. The five

'levels' posed - motivational, personality trait, target language (TL) related attitudes, situation related attitudes, and the foreign language self-concept (FL SC), with relevant inhibitions subsumed - were considered empirically valid, and proved to be highly significant as 'filter-raisers', or 'lowerers'. More specif cally,

- motivation (motivational indices, instrumental orientation, integrative orientation, cognitive orientation) consisted of general school FL learning motivation, with a communicative purport; communicative viewpoints, intrinsic and growth motivation, and rational assessment of the value of formal FL learning were seen as promoters of this combination, i.e., as 'filter-openers';

- 'traits' (ethnocentrism, authoritarianism, trait anxiety, alienation) formed two main factors, ethnocentrism (authoritarianism practically disappeared) on the one hand and anxiety - alienation on the other; their filtering nature was clear, but differential;

- TL related attitudes (attitudes toward TG1/Englishmen, TG2/Americans, target language, target culture) formed clear factors with interesting combinations: the target language was the central variable, but it was remarkably connected with attitudes toward target culture and notions on one target group, Englishmen. The other target group, Americans, were connected with variables reflecting the American mode of life rather than the target language, English;

- situation variables (attitudes toward the TL teacher, method, and course) revealed a strong dynamic feature, obviously functioning as a strong 'filter-lowerer'; the TL teacher was seen as the driving force within this dynamic.

Problem 2, parallel to first, dealt with the content and distinctive features of . . FL SC. This 'Level 5' wa considered the core of the filter, and discussed separately in various contexts; the measures for the FL SC, and for the relevant inhibitions were analyzed separately.

The hypothesized components of the FL SC appeared very clearly, but the notions of actual self and self-esteem were largely intertwined at the specific TL and general FL levels;

at the task TL level, learners' notions of their actual TL skills largely replaced the self-rating measures used in previous research. The concept of self-ratings was thus also located in a theoretical framework. The third component, the ideal self, distinguished itself as a factor in its own right, characterized by a wish to achieve native-like TL skills, and coloured by the experience of a new identity.

FL related inhibitions reflected a strong denial of the value of TL learning, and other manifestations of frustration: avoidance tendencies, alienation, language shock, and aversions toward the TL teacher, and toward some classmates ('significant others'). Identity problems in many cases seemed the cause of such apprehensions. A general academic and FL communication apprehension completed the list of distinctive features in this content area.

The distinctive features in the whole filter area were a FL SC factor plus a factor of relevant inhibitions, a general FL learning motivation factor emphasizing communicative aspects in the learning situation, a factor of TL related attitudes, and one of anxiety, alienation and general level inhibitions. The factorial division of the whole area confirmed the validity of measurement, and accorded with theoretical assumptions. In the separate analyses, the theoretical constructions of FL SC components and levels (general FL, specific TL, task TL) established themselves.

The following two problems concerned the functions of the filter variables in relation to each other, and to achievement in TL study. Problem 3 concerned the filter at large while Problem 4 focussed on the FL SC, including relevant inhibitions. By way of analysis, an acceptable LISREL model to account for relations between research variables and theoretical constructs were developed.

The FL SC and inhibitions seemed to affect the development of trait anxiety and alienation; further, they affected the antecedents of motivation, i.e., TL related and situation related attitudes, and via them, motivation. Motivation influenced achievement, which, again, affected the FL SC and inhibitions. The verification of this upward/

downward spiral is a central finding. Recursive influence was shown between achievement and TL related attitudes (TL, TG1/2, TC), i.e., these sets of variables worked essentially in both directions.

As was hypothesized, the FL SC and the allegedly relevant inhibitions stood in a strong reciprocal, negative relation to each other: inhibitions were adjudged to represent 'guardians around the FL SC'. Both sub-constructs affected motivation strongly; besides, the FL SC also affected achievement directly (although the main direction was from achievement to the FL SC).

Problem 5 approached a provisional synthesis of results, building on preceding parts of the study, various other results, and the supplementary information concerning the connections between filter and criterion variables. Regarding motivation, general school learning motivation was parallel to general FL learning motivation, but formed 'a world of its own'. FL learning motivation was connected with ability and sex (girls), but also with spontaneous and communicative TL use; instruction for communication and self-expansion was an obvious promoting factor. Of the 'traits', anxiety and alienation showed no direct influence on the criterion variables, while ethnocentrism was in opposition to spontaneous TL use. Within TL related attitudes it was shown that genuine interest in TL, TG, TC - indicative of low filter - promoted TL achievement. In the field of situation related attitudes, vital, teacher-regulated dynamics - a filter-lowerer - was the central finding; however, this area did not show direct influence on achievement.

The idea of the FL SC as the crucial link in the upward/downward spiral school FL learning was supported; self-assessment of actual TL skills and FL SC self-esteem came to the fore here. General academic self-esteem, in many cases, seemed very significant even from the FL learning point of view. In the field of inhibitions, feelings of uneasiness and unreality, and a lack of coping mechanisms were connected with low achievement (and this was often the case with boys).

Problem 6 concerned some central determinants of filter development. The determinant variables were parental support, support from peers, the TL teacher, classroom activity, and TL contacts outside school (foreign pen-friends). All of these had significant connections with the filter, outlining their influence on the growth of negative/positive elements at the various 'levels' of filter. Parents affected the Ss' motivation and its antecedents, school learning attitudes, and the FL SC. Peers/classmates were found to be a remarkable filter-opening factor, but to be controlled by the teacher. Two teacher types, 'authoritative' and 'democratic', regulated the positive class atmosphere, promoted the intensity of motivation, and supporting attitudes, and were of help in some problems of the FL SC. The permissive type of FL teacher was a 'zero influencer'. Classroom activity aiming at a processual approach, among other things, promoted sound FL SCs and warded off inhibitions, while an atomistic approach raised negative situation related attitudes and TL specific and task level inhibitions. TL contacts outside school promoted FL learning motivation and was negatively correlated with ethnocentrism.

Problem 7 concerned differences between the stratifications of sampling. Regional differences were slight, i.e., in this respect the sub-samples were drawn from the same population in the case of most filter factors. The differences between city and countryside schools, again, were considerable, showing countryside schools at a disadvantage as regards the filter. General academic motivation and self-concept were even higher in the countryside, yet filter elements affecting learning positively were found in the cities, while country school Ss were characterized by stronger FL inhibitions.

Problem 8, finally, concerned the question of what typical 'filter' and 'non-filter' types of learner could be detected; analyses of the measures of the FL SC, FL inhibitions, and the whole filter area were carried out separately. The emerging groups were related to their school achievement. Three 'FL SC types' were detected: (1) low

achievement - low self-esteem (12 % of the sample); (2) mediocre achievement, with some discrepancy between aspirations and achievement (41 %); (3) high achievement - strong FL SC (47 %). Regarding inhibitions, four types appeared: (1) THE filter group of low achievement and strong inhibitions (29 % of the sample); (2) alienated Ss of average achievement, with some problems of L1/L2 identity (15 %); (3) a balanced, well-adapted type, with good role adaption in school FL learning (25 %); (4) a 'non-filter' type with a minimum of emotional restraints (32 %). In the analysis of the whole filter area, (1) a general FL filter type (13 %), (2) a type 'filtering for general personality reasons' (38 %), and (3) a general FL non-filter type (49 %) were detected.

6. DISCUSSION

6.1. Theoretical reflections

Research practice in the field of the multifaceted science of 'applied linguistics' is much too often characterized by miniature 'theories' based on one idea, and the haphazard measurement of a score of those subjects nearest at hand. A legion of such observations have been one of the driving forces behind this study. With the whole of the present project in mind, a few comments concerning the 'state of the art' are appropriate.

Concerning the fragmentary nature of present theories, it should be borne in mind that attempts at wide coverage exist (Krashen 1981b), but are still weak in evidence, and spotty from the point of view of more general theory (consider, e.g., Laine 1986a, 1986b). A delightful enterprise, admittedly, is to be found in Stern (1983), aiming at a truly wide review of the field of L2 learning; presumably, however, this gigantic work does not even aim at presenting a 'metatheory', although it may contain the makings for one. A covering theory of formal FL learning and teaching - 'educational linguistics' or whatever (Spolsky 1978; cf. Laine 1986a) - is de facto largely missing, to say nothing of the fact that research work done in terms of such a framework is scarce.

In view of the present 'state of the art', then, it seems necessary to relate the theory and findings in a special field (e.g., school FL learning) to that of the more general field or fields (school learning, learning psychology, cognitive psychology). In so doing, we can climb to wide prospects - but also, we run the risk of getting lost in the vastness of the attempt. To make things even more complicated, not only the wider context of general theory has to be grasped, but also a 'whole' person in an actual, holistic situation has to be taken notice of, not just a slice of him/her as the object of our study.

The present attempt reflects these considerations.

Regarding theory, the comparative approach has proved fruitful in all domains: The attempt to interpret the filter idea in terms of cognitive psychology was there from the outset (see Laine 1986b), and worked out well. The theory of motivation and goal-directed behaviour (consider, e.g., Atkinson 1964) helped us to keep one eye on the approach-avoidance tendency so basic to the filter phenomenon, and to interpret specific pieces of information at a level of more explanatory force. The theory of attitudes, their construction, change, functions, and measurement (Karvonen 1967, Saari 1976, Ausubel & Robinson 1969) helped in a decisive way to deal with a central concept; the research variables were largely to be interpreted as attitudes toward various objects. Knowledge and theory of school learning (see e.g. Ausubel & Robinson 1969, Bloom 1976) put in perspective the results concerning FL learning, with its motivation and outcomes. Finally, energetic delving into the general construct of self concept opened up very important avenues directing towards understanding and interpreting the FL SC.

Emerging educational linguistics, then, cannot build solely on linguistic (even psycholinguistic) theories: its starting points in the psychology of human behaviour and the theory of learning have to be equally strong. Thirdly, when aiming at advances in FL teaching, it has to proceed in awareness of what is relevant in this field, to 'know the facts of life' in this respect. A triangle like this is what the present project took place in, and in terms of which the results are to be interpreted. It is my contention that the study brought about sufficient evidence in favour of the broad approach; further, it is to be hoped that other researchers can make the widest possible use of work done and results achieved here, on the road towards a more satisfactory 'state of the art' in educational linguistics.

Further observations concerning some specific points of theory are discussed under 6.3.

6.2. Problems of measurement and data collection

In consideration of the 'state of the art' referred to above, some points of reliable data collection are to be emphasized. What characterizes far too many essays in the field is lack of knowledge concerning the setting, and data collection on a rough-and-ready instrument in a manner which defies all sampling theory points of view. The true reliability of results rests largely on careful preparation under these heads, as well as the good knowledge and understanding of the researcher: one figure, calculated afterwards and given to prove the reliability of the instrument (say, Cronbach's alpha) is a meagre guarantee of the reliability of the study.

Regarding the measuring instrument, the preparation was started years previously to the Validation Study. Old items from various studies were used and new ones minted to cover the area theoretically defined. Content validity was paid great attention to as potential items were discussed in seminars. Small studies produced information concerning the practicability of such items. A further selection took place in pilot testing; in the Validation Study, the best items, chosen with the aid of correlational examination, study of internal consistency, and factor analysis finally came to represent the theoretical constructs, concepts, and sub-concepts. In consequence, the fact that the instrument showed high reliability, and that the theoretical categories came up in an outstandingly 'clean' way in the analyses was very satisfying, but not a great surprise. On this basis, the interpretation of the results was considered safe, and in many cases, simple.

Compared with previous research in the affective domain, e.g. that done into motivation, the result of developmental work produced scales equally reliable, but more directly relevant to FL learning. This means increased face validity, which, again, means that the results are readily applicable to FL teaching practice; in research, too, work becomes more meaningful. The best example, perhaps, was the case of alienation, whose significance in research had seemed to be on the wane; in this study it was given relevant content, and it

functioned as a powerful research variable. In the area of motivation, communicative aspects stood out more clearly than previously thanks to some new items, thus offering a basis for re-consideration concerning the much-discussed 'integrative motive'. In the whole area of the FL SC, including inhibitions, the instrument, though containing ingredients from many quarters, can be regarded as a new 'creation'. The fact that it functioned consistently and reliably is one of our main achievements, notably because the position reached may be considered an important bridgehead for further research.

In respect of data collection, careful planning, contacts with schools before testing, tester schooling, and personal participation by the researcher were measures aiming at the reduction of error; school statistics were studied, the schools observed during visits, and teachers interviewed to secure understanding of any eventual obscure results. These measures actually helped to gain clarity on various counts, and are to be recommended seriously in cases where research into educational linguistics is concerned: where 'soft' data supports, or clarifies, views obtained from 'hard' data, the likelihood of error is further diminished.

What remains to be underlined in the above is the fact that the researcher's own knowledge and understanding should be the ultimate criterion in assessing what has been gained through research, no matter how reliable the measuring instrument, how crystal clear the method seems to be.

6.3. Evaluation of the findings and the project

The research project aimed at revealing the nature, content, and functions of the affective filter in formal FL learning: consequently, the various aspects of operationalization concerned the learning situation, and much of the information gained may be considered specific to such situations. For example, school FL learning motivation came up in an emphatic manner. The important thing here were the positive content and appreciation it received, proving that the value of school FL

learning was widely acknowledged. This is reassuring because although the value of FLs is generally acknowledged, their school learning is often considered of little value. Such opinions are often voiced loudly; research may bring into light the opposing viewpoints of the silent majority. In this case, their viewpoint opens up vistas of (potentially) low filter, information to be utilized by researchers and practicians.

Though the filter was the object focussed upon, the investigation also produced results which gave rise to a reconsideration of the motivation theory of the Gardner & Lambert 'school' (1972 & later): in the school setting, a general FL learning motive, supported differentially by at least three motivational orientations is the main motive, and not the 'integrative' one. (Laine 1978 came up with essentially the same conclusion.) Secondly, a strong communicative element is contained in this general school FL learning motivation, conducive to intrinsic motivation. Truly integrative ideas tinge the FL learning of comparatively few students; naturally, things look brighter for 'integration' if it is given an exceedingly wide meaning, for instance approaching that of 'communication motive'.

Some points concerning TL related and situation related attitudes deserve to be raised here. (1) Their function as supporters of motivation agree fully with the Ausubel & Robinson (1969) view of relations between the two theoretical concepts. This confirms the point of theory, but is also a further proof of valid operationalization and measurement of the concepts. (2) Of the TL related attitudes, attitudes towards the TL itself formed the most powerful research variable, and are to be considered a potential 'filter-opener' of prominence, directly connected with intrinsic motivation. (The other two sets of attitudes in this area, those toward the target group(s) and target culture also contributed substantially.) The learner's personal inner relations with the 'inside' of the language to be learnt, therefore, is an important point worthy of further theoretical analysis and empirical research. (3) Concerning situation related

attitudes, the dynamics of the learning situation were a similarly prominent result requiring attention. Research into this area might be the beginning of a new wave of 'activity pedagogy', as was mentioned above.

Concerning the three variables representing personality traits, ethnocentrism, anxiety, and alienation, the finding which is theoretically significant is the splitting up of the 'ethnocentric syndrome' (Gardner et al. 1974; Laine 1978) into ethnocentrism on the one hand, and anxiety plus alienation on the other. The differential functioning of these two factors in school FL learning revealed an interesting state of things which would also deserve a thorough and well-focussed investigation not possible in the present wide context. Ethnocentrism seems to cause much filtering, which the learners, however, may manage to keep covert to a high degree. Anxiety and alienation function more directly. The variable which received most new significance was alienation, which showed a number of symptoms in the learning situation. This confirms Stevick's (1976) views, and it makes sense theoretically: thus the variable (and concept) which seemed to be on the wane in the light of previous measurement (Laine 1978), apparently came into its own in this study.

The definition, operationalization, and empirical verification of the construct FL SC is to be regarded as one of the major results of this project, together with the mapping out of a fair number of relevant inhibitions. The verification of their signal function in the upward-downward spiral affecting motivation and learning outcomes is equally significant - even though such a loop may be conceived of through mere theoretical inference, and extrapolation from previous knowledge, general and specific.

No detailed picture could be formed of the harmony-discrepancy reflected in the learner's self-esteem, although considerable evidence in the direction assumed did come to light. Actually, many learners' FL SCs seem to be shaken by this discrepancy. Self-esteem, again, clearly represented the whole of the SC in a holistic manner. This is perfectly in

line with general theory (see Rep. 1, 2.2.4.2.); of potential significance to educational linguistics and FL teaching is the content of these sub-concepts, which is directly meaningful and interpretable from both points of view.

One of the main contentions in this study, making the FL SC and relevant inhibitions 'the core of the filter', was supported by all findings made, and is accepted here as a major theoretical statement, to be confirmed or refuted by further research and other researchers.

Concerning the paths of influence within the area of filter variables, what is to be noted is the fact that the LISREL technique could not be carried as far here as the data would have allowed, owing to failing resources. While expecting an opportunity to return to the issue, the findings presented are accepted as meeting the technical criteria, and revealing the relations between the concepts in a significant way. As it is, the analyses disclosed a number of filtering effects, many of which may be inferred, but which were badly in need of verification. The numerous one-way and two-way paths of influence deserve detailed further research, as they all are constituents of the dynamics of formal FL learning.

By way of a general evaluation of the filter-raising/ filter lowering effects detected it may be stated that

- both effects appeared at each filter 'level' included in the model,
- the FL SC, including the categories of inhibitions subsumed, established their position at the centre of the filter,
- the growth of anxiety and alienation from small situational incentives into generalized, traitlike features was a major instance of filter growth revealed,
- the accumulative force of 'filtering' was reflected on FL learning motivation,
- the general setting, including some factors outside school, was mapped satisfactorily with regard to filter-affecting elements,

- the 'filter' and 'non-filter' types of FL learner verified, bearing differential marks of filter influence, or freedom from it, may help the identification of the 'patients', and that

- acceptable models of the filter were developed.

In conclusion, it is to be argued that the filter in the school FL learning situation was mapped satisfactorily, and that the models and main results may serve as reasonably solid starting points for further research.

Filter vs. communication apprehension. In assessing the results of the present piece of work, an interesting point of comparison of research into factors hindering the in- or outflow of information is to be found between work done concerning the concepts of filter, reported here, and that concerning 'communication apprehension' or 'communication reticence'. The former is defined as a person's "negative dispositional or situational affective response toward oral communication likely to restrict or inhibit one's interactive functions" (Sallinen-Kuparinen 1986, 17). 'Filtering' stops the learner from participating in learning activity, even from receiving and processing information; communication reticence stops him taking an active part in oral communication. Thus the parallellism of the two concepts is obvious. Like the filter phenomenon, communication apprehension is considered to be partly dispositional, partly situation related. There has been argumentation to the effect that CA "may not be a distinctive construct but a sub-set of generalized anxiety" (Porter 1979; see Sallinen-Kuparinen 1986, 15). In the light of analyses and views propounded in the present project, this looks like a very sound theoretical approach. McCroskey (1982), too, defined CA as "a person's level of fear or anxiety associated with any form of communication with other people", traitlike or situational in character (see Sallinen-Kuparinen 1986, 15). Thus some form of generalized anxiety, after all, would seem to be the 'high construct' (cf. Guiora 1972) behind 'CA' while situation related features may form the specifics. In actual fact, Sallinen-Kuparinen's 'structure

of CR' (communication reticence) contained three factors of general content (approach-avoidance, confidence, socio-affective concerns), with just the fourth, stage fright, showing a more specific content. This specific factor accounted for 5.5 % of the variance accounted for by the four factors, and its eigenvalue was .54, far below the normally accepted criterion of eigenvalue >= 1.0 (in fact, only Factor 1, 'Approach-avoidance concerning oral communication' met this criterion).

In the present filter project, a factor termed 'General academic and FL communication apprehension', accounting 5.6 % of the total variance, appeared in the area of FL SC inhibitions. It contained fear of mistakes and laughter from others, and a feeling of helplessness in the face of communication, especially oral communication tasks. Further, manifestations of various apprehensions - largely, typical signs of frustration - characteristic of FL SC inhibitions, were reflected on the FL SC, and were generalized into traitlike anxiety and alienation. The item level content of the inhibitions gave rise to a variety of insights concerning apprehensions in the learning situation (these inhibitions might be called 'the filter in a nutshell'). In the framework of the present study, these apprehensions may be located theoretically and situationally.

In comparison, then, the recent major research project referred to above, dealing with the apprehensions of more mature learners in various schools and institutes, revealed a remarkable similarity, although in that study the weight of interpretation was on the specific side (and, in the present author's opinion, not very strongly supported by the data). 'Appearing in public' is a situation which raises communication apprehensions - in the school setting, it is one of the classical 'filter-raising' situations. The filter as conceived of and operationalized here is a wider concept, and appears to be a great deal wider than CA/CR, or the true core of the latter. (Of course, CA/CR is not, nor can it be, meant to account for more than a fraction of FL 'filtering' phenomena.)

Still, it should be pointed out that 'filtering' with

many 'filter types' is accentuated in the case of oral communication in the target language. Looking into the causes, lack of self-confidence (weak self-concept, low self-esteem as defined in this study) and lack of training together with the tradition of reticence (see Sallinen-Kuparinen 1986), but also other personal reasons, perhaps requiring a psychoanalytic interpretation (consider Stengel 1939; Guiora 1972), apparently account for this accentuation of restraints. This observation also serves as an example of various approaches which together make for a better understanding of phenomena important to the theory and practice of educational linguistics.

6.4. Future prospects

6.4.1. Pedagogical implications

The foreign language learning situation formed the general background to the study, and its main aspects are reflected in the 'levels' of the filter. Accordingly, research results are, and are bound to be, readily applicable into FL teaching practice. Reference to this is made in several contexts in this report (especially Ch. 5). Some comments of a general nature are made here.

Concerning motivation, (1) pedagogical attention should be directed to the fact that school FL learning motivation received considerable emphasis, proving school FL learning to be a meaningful occupation for many (most?) students. As an institution, the school can only represent 'reality' in a limited way. This restriction should be seen and acknowledged; the form of motivation found should be put to optimal use. In this attempt, (2) great attention should be paid to developing intrinsic, even growth motivation. (3) The two points above obviously take effect in communicative FL teaching, where TL is used maximally in life-like communication. (In it, some 'poses' will have to be adopted/accepted, but the students learn to 'mean' in a foreign language, they have something to

say that they want to say.) (4) On the basis of the results here, the teacher can develop a better awareness of factors conducive to flagging motivation.

As egards the significance of attitudes supporting motivation, TL related and situation related attitudes offer tnemselves in a straightforward way as support of FL teaching. Knowledge concerning target culture has been traditionally used in Finland as essential oackground information; intertwined with this is information concerning the target group. It may well be a reflection of this tradition that the combination of TL, TC, and TG1/Englishmen occurred in the data. While carrying on in this vein, feeding the students' interest with information of this category (or, to be more exact, getting the students to delve for information), teaching could profit by paying more attention to the language in question per se as a promoter of interest. This is somewhat trickier than it sounds, because the answer is not to be found in the old grammar-grinding tradition. Yet, there are innumerable examples that show how the language 'works', and many ways to bring such material into teaching, if the teacher applies himself to this task.

Considering pedagogy, it is worth pointing out once again that attitudes towards TG2/Americans were detached from TL, and associated with the American mode of life. It is for the teacher, then, to build more association with the language itself in the TL learning of such 'Yankee fans'. After all, this need not be a hard job, say, in study projects handling the American mode of life, etc.

Results concerning situation related attitudes carry with them an emphatic message for the teacher pointing out that he is the driving force, the initiator of activity - even though he has to work with, or rather through, his students. Second, what the FL learner needs is action: this is a strong plea for 'activity pedagogy'. This also is a thing teachers can promote with their professional skill; what is essential, then, is the internalization of this as a goal. The third important recommendation for the teacher arising straight from these results is the necessity to bring the maximum of true

communication into the FL classroom If every classroom opportunity to use TL really to express something is utilized, and if students get into the habit of so doing, the teacher need not be overly worried as to what the fashionable 'communicative method' (or any other slogan) may contain and imply.

Pedagogical implications concerning traits are also easily discernible. Ethnocentrism, functioning largely on its own, is perhaps best singled out from the company of other 'filter-raisers', and 'fought in a separate war'. The study showed how it may assume disguises, and affect learning indirectly; it may be hidden, and its absolute strength in the sample did not seem very significant, but where it is at work, the learner's filter is certainly high. For this reason, and for reasons generally educational - and, humanistic - the battle against aversion towards outgroups must be carried on continuously. Foreign language teaching, including the choice of materials to be studied, offers excellent opportunity for such activity.

As regards traitlike anxiety and alienation, they clearly contain elements extraneous to the FL learning situation: the development of these traits is largely part of the learner's general life story. Considering this aspect of these traits, the same is true as with ethnocentrism: the students' general self- concepts are to be supported on all occasions. As for the other side, the negative elements growing from small beginnings at the task TL inhibition level should be handled immediately, 'nipping them in the bud'. The 'map' of things happening at this level may sharpen the teacher's eyesight in distinguishing the small events. Where negative affects seem to be growing, confidential councelling may solve a great deal, if given at the right time.

FL SC variables, naturally, are of prime interest from the pedagogical point of view. 'Humanistic approaches' in FL teaching are deeply concerned with the learner's personality, but lacking concrete outline and operationalization, they tend to remain at the level of well-meaning principles. A detailed

analysis of the central construct, its critical features, and functions as such may serve a competent FL teacher to a great extent: it is like having a number of things spelt out which the teacher, more or less intuitively, had already formed a notion of. For the beginning teacher, or didactician, the results gained in this project may equally represent a map of the field, a set of landmarks by which to find one's bearings on the way to full awareness of the situation.

The comments above concerning the FL SC are also true of FL SC inhibitions. In this area, detailed information concerning various apprehensions which lead to aversive/ avoidance behaviour in view of TL learning, may help the teacher to make a diagnosis of his 'patients' upon which to plan therapeutic measures. In all, where the approach is personal, emphatic, humanistic, the results of this study may assist in making it take more effect upon various types of learner, especially those with problems in the affective domain. The typology of 'filter' and 'non-filter' types will, hopefully, serve as a further tool in the diagnostic part of the daily work of the FL teacher.

Summing up, it may well be argued that the results of the research project offer the basics for present-day FL pedagogy of the affective domain.

6.4.2. Prospects for further research

The present study project could build on experience and results gained in the researcher's previous work on FL learning motivation (Laine 1977, 1978). Still, it started as small scale, sometimes even as case studies of relevant themes; after a pilot stage, the present validation study was carried out. Looking forward, a number of 'basic' results would now require in-depth investigation, i.e., returning to small-scale undertakings and a narrower approach would be in order. After that, another validation stage aiming at a higher and wider level of generalization should follow.

Themes for such 'in-depth study' are many: (1) The birth

of the FL SC: What are the all-important variables, experiences, or incentives affecting the FL SC at the early stages of FL learning? What are the determinants in the learner's background, in his/her 'life story', incentives from early childhood which tend to pre-determine FL SC and filter development? (2) Case studies of 'filter' (and 'non-filter') types: What is the in-depth 'portrait' of such types? What failures of coping mechanisms are decisive in the case of the 'high-filter' type? How can these coping mechanisms be taught?, etc. (3) 'Significant others 1': Parental influence on the levels of the filter? (4) 'Significant others 2': The FL class as a supporter of sound FL SC development? Therapeutic influence of the class community? How can peer groups outside school and the idolization of some outgroup's mode of life be brought in to alleviate problems of the affective domain in school FL learning? (5) 'Significant others 3': Teacher influence in close-up focus? What are the FL teacher's own defences; how does his/her self-concept affect the learners? A therapeutic-confidential atmosphere in the classroom, with the teacher included? (6) The FL SC in continued study: What is the situation in the upper grades of secondary school? What is the nature of 'filtering' in autonomous FL study? (7) Schools: Differences in the affective atmosphere between big and small schools? What are the specific features of small, remote schools? The possibilities of school as an institution to create a milieu with minimal filter incentives?, etc., etc. Themes for the second validation stage would naturally grow out of a sufficient number of studies from this list; any of these might also grow into a major research project per se.

Transferring the study into other settings is another, vast prospect for further research. In outline, one area of different settings may be detected in Scandinavia: What are the specific filter features of Swedish-speaking Finns learning Finnish? Icelanders learning 'Scandinavian'? What about Greenlanders learning Danish, or English? What about other minority groups? Within other European countries, analogous settings may be conceived of: What are the roots of

'filtering' between sections of a nation speaking different languages, supposed to learn the language of the other group? What is the nature of filter between countries, big and small? HOW CAN THESE FILTERS BE LOWERED? The significance of an answer, even partial, is obvious.

6.5. Conclusion

Definition and measurement of personality and human affective domains is an attempt like squaring a circle: it cannot be done without substantial loss of shape and content. The margin of error is remarkable; a great deal of residue will remain unaccounted for. Yet the results may be significant: The object of study can be analyzed and theoretically acceptable categories can be set up, and filled with meaningful empirical content. Also, remarkable direct applicability may be reached. In the present researcher's assessment, such positive viewpoints concerning this study were sufficient for it to merit publication. It is my sincere wish that this piece of work will inspire other researchers to carry on in this vein; those who feel differently will, hopefully, produce research evidence to outweigh, or challenge, my results.

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APPENDIX 1. Research variables

1.1. Sum, determinant, and criterion variables

Sum filter variables	$\bar{x}$	sd
x301 General school learning motivation	3.51	.83
x302 General FL learning motivation ("Motivational indices")	3.71	.73
x303 Instrumental orientation	3.35	.62
x304 Integrative orientation	3.50	.84
x305 Cognitive orientation	3.58	.88
x306 Ethnocentrism (+ Authoritarianism)	2.[illegible]	.57
x307 Trait anxiety	2.42	.83
x308 Alienation ("Anomie")	2.70	.70
x309 Attitudes toward target group 1/ Englishmen (Att. TG1)	3.54	.72
x310 Attitudes toward target group 2/ Americans (Att. TG2)	3.55	.65
x311 Attitudes toward the target language/ English (Att. TL)	3.36	.91
x312 Attitudes toward the target culture/ Anglo-American (Att. TC)	3.57	.74
x313 Attitudes toward the TL teacher (Att. Teach.)	3.37	1.03
x314 Attitudes toward teaching methods (Att. Meth.)	3.49	.85
x315 Attitudes toward the TL course (Att. course)	3.41	.96
x316 General self-concept (Gen. SC)	3.40	.47
x317 General academic self-concept (Gen. acad. SC)	3.32	.74
x318 General foreign language self-concept (Gen. FL SC)	3.13	.78
x319 Specific target language self-concept (Spec. TL SC)	3.10	.72
x320 Task target language self-concept (Task TL SC)	3.35	.73
x321 General inhibitions (Gen. inhib.)	2.92	.73
x322 General academic inhibitions (Gen. acad. inhib.)	2.74	.72
x323 General foreign language inhibitions (Gen. FL inhib.)	2.42	.77
x324 Specific target language inhibitions (Spec. TL inhib.)	2.36	.74
x325 Task target language inhibitions (Task TL inhib.)	2.57	.62

Min=1, max=5 in all variables

Determinant (or, Background) variables	$\bar{x}$	sd
x185 Sex		
boys 53.4 %		
girls 46.6 %		
x194 Foreign pen-friends	1.43	.68
x401 Parental support	1.53	.43
x200 Teacher:authoritarian type	2.18	.68
x201 Teacher:democratic type	2.10	.58
x202 Teacher: 'laissez-faire' type	1.39	.55
x402 Support from peers	2.30	.36
x403 Target language class factors	2.04	.47
x209 TL class activity: atomistic approach	1.83	.66
x210 TL class activity: processual approach	2.10	.58

Criterion variables

x186 Ability grouping (Streaming)		
'short' 17.6 %		
'medium' 29.9 %		
'long' 52.5 %		
x187 Grade point average (GPA)	7.50	1.07
5 - 5.99 5.2 %		
6 - 6.99 30.7 %		
7 - 7.99 29.2 %		
8 - 8.99 25.3 %		
9 - 10 9.6 %		
x188 TL grade	7.35	1.46
4 1.1 %		
5 10.5 %		
6 18.3 %		
7 24.2 %		
8 20.9 %		
9 18.5 %		
10 6.5 %		
x191 TL use: out of school activities	2.87	1.45

1.2. Filter variables, item level

x1 Class
x2 School

Motivational indices

x3 Readiness to use TL outside school
x4 Searching help in learning problems
x5 Regarding school attendance a mere duty
x6 Willingness to have less TL teaching
x7 Internalization of TL teaching
x8 Active effort to learn TL from TV programmes
x9 Concentration on the easy parts of TL study
x10 Seeking TL practice outside school
x11 Preferring learning outside school to school TL learning
x12 Energy in doing homework
x13 Voluntary choice of TL

Orientations

x14 Communicational reason for studying TL
x15 Spontaneous TL learning
x16 Keeping up with everybody else
x17 Co-operational activities with TL speakers
x18 TL just another school subject
x19 Feeling 'at ease' with members of TG1, TG2
x20 Wish to learn TL perfectly
x21 Wish to be like a TL speaking idol
x22 Help in one's future occupation
x23 Expanding oneself
x24 TL learning a pleasant experience
x25 Esteem in other people's eyes
x26 TL skill a help to get a good job
x27 Self-development
x28 Contacts with many kinds of people
x29 Understanding TL films, books, culture
x30 Really wishing to learn many FLs
x31 TL/English a world language

Ethnocentrism and authoritarianism

x32 Reserved attitude toward foreigners
x33 Appreciation of loyalty and authority
x34 Disapproval of Finns marrying foreigners
x35 Disapproval of 'international education'
x36 Disapproval of the extensive FL programme of Finnish schools
x37 Accepting the categorization of people into strong and weak
x38 Playing fair with one's own friends, leaving the rest
x39 Teaching FL plainly as a language
x40 Approval of strong teacher leadership
x41 Preference of one's own family to others

Trait anxiety and alienation

x42 Lack of trust into anything
x43 Depression
x44 Feeling of 'not belonging anywhere'
x45 Future anxiety
x46 Contacts with one's own family
x47 General lack of coping mechanisms
x48 Inclination to take things to heart
x49 Alienation from teachers
x50 Feelings of uneasiness with new people
x51 Unability to take anyone into one's confidence
x52 Wish to get away, into new conditions of life
x53 Finding many things in one's life distressing

General school learning motivation

x54 Wish to have compulsory school attendance shortened
x55 Wish to leave school
x56 Finding school learning useless
x57 Finding school learning pleasant
x58 Finding school learning personally important
x59 Finding school learning interesting

Attitudes toward TG1/Englishmen

x60 Wish to get better acquainted with TG1
x61 Personal positive attitude toward TG1
x62 Finding members of TG1 polite and friendly
x63 Admiration of TG1
x64 Excessive admiration of TG1

x65 Finding members of TG1 easy to get on with

Attitudes toward TG2/Americans

x66 Finding members of TG2 easy to get on with
x67 Wish to get better acquainted with TG2
x68 Admiration of TG2
x69 Excessive admiration of TG2
x70 Personal positive attitude toward TG2
x71 Finding members of TG2 modern and ambitious

Attitudes toward TL and TC

x72 Wish to have more contact with Anglo-American life
x73 Wish to understand how TL 'works'
x74 Finding TL exciting
x75 Finding TL repulsive as a language
x76 Willingness to move over to England/USA
x77 Love of English/American bands
x78 Finding TL grammar exciting
x79 Wish to read more English/American books (see more English/American films)
x80 Finding the sound of TL exciting
x81 Considering a knowledge of the English/American way of life important
x82 Wish to really know the 'inside' of TL
x83 Wish to have more TC taught in the lessons
x84 Considering a knowledge of English/American history and culture important

Situation related attitudes

x85 Finding the FL course tedious
x86 Finding the method of TL teaching useful
x87 Wish to obey the TL teacher's instructions
x88 Liking one's TL teacher
x89 Unwillingness to participate in the kind of TL teaching offered
x90 Finding the TL teacher inspiring
x91 Willingness to choose again a TL course of the same kind
x92 Liking one's TL course
x93 Confidence in the TL teacher
x94 Considering the TL course too long

x95 Finding TL teaching inspiring
x96 Finding the TL teacher intelligent
x97 Dislike of the TL teaching method
x98 Considering the TL teacher competent and professional
x99 Wish to have less TL (and more L1) spoken in TL lessons
x100 Finding the TL course useful

General self-concept

x101 Feeling useless, 'no-good'
x102 Wish to seem more intelligent
x103 Wish to be more appreciated by peers
x104 Getting on in one's enterprises
x105 Wish to really succeed in one's enterprises
x106 Wish to be more popular among peers
x107 Wish not to be conspicuous in any way
x108 Evaluation of one's 'good sides'
x109 Self-value
x110 Evaluation of one's cognitive capacity

General academic and general FL SC

x111 Considering oneself 'good enough' as a student
x112 Considering oneself 'really good' as a FL learner
x113 Dislike of failure in school
x114 Wish to be a really good FL learner
x115 Feeling 'no good' as a FL learner
x116 Considering oneself 'as good as anybody in our class'
x117 Feeling 'no good' as a student (generally)
x118 Wish to really do better in school
x119 Suspicion of peer's scorn of oneself as a FL learner
x120 Feeling of a 'new identity' while using a FL
x121 General assessment of one's academic success
x122 Wish to be a 'FL virtuoso' admired by others

Specific and task FL SC

x123 Feeling of a 'new identity' while using TL/English
x124 Wish to be able to write TL like a native
x125 Wish to have a native-like all-round command of TL/English
x126 Feeling TL grammar impossible to learn
x127 Evaluation of one's TL writing skill
x128 Wish to show off one's TL skills to peers

x129 Wish to be able to speak TL like a native
x130 Satisfaction with one's TL speaking skill
x131 Assessment of oneself as a TL learner
x132 Evaluation of one's TL speaking skill
x133 Feeling TL learning impossible
x134 Finding one's TL pronunciation 'lousy'
x135 Assessment of one's knowledge of TL grammar
x136 Assessment of one's TL pronunciation
x137 Wish to be able to pronounce TL 'perfectly'
x138 Finding oneself a poor TL learner in comparison with others

General and general academic inhibitions

x139 Feeling of continuous 'hard luck' in life
x140 Fear of 'all sorts of blunders' in school
x141 Denying the value of success in school
x142 Feeling of vanity in everyday life
x143 Failure to apply oneself to school study
x144 Finding the school atmosphere irritating
x145 Feeling of 'too high demands' in life (generally)
x146 Feeling of discomfort in school
x147 Feeling nervous in 'presenting' anything in school
x148 Wish to 'be somebody else'
x149 Reluctance to 'present' anything in class for fear of laughter from others
x150 Lack of coping mechanisms in face of difficulty
x151 Wish for change
x152 Feeling school strange, alien

General FL inhibitions

x153 Fear of 'blunders' in FL classes
x154 Feeling of having to 'play a foreigner' in FL class
x155 'The strange world of FL classes'
x156 Questioning the value of FL learning
x157 Failure to adopt the role of a FL user
x158 Finding the FL class atmosphere tense
x159 Feeling ridiculous while using a FL
x160 Feeling helpless in FL class

Specific TL inhibitions

x161 Feeling that everyone knows TL/English better

x162 'The TL teacher has something against me'
x163 Feeling the TL oppressive
x164 Dislike of 'having to stop being a Finn' in TL class
x165 Feeling tense in TL class
x166 Feeling that the TL teacher is 'just acting'
x167 Questioning the importance of knowing TL
x168 Finding the Anglo-Saxon world strange, alien
x169 Finding the tempo in TL class too fast
x170 Finding some classmates 'too good' in TL class
x171 Fear of mistakes in TL class
x172 'Too high demands' of the TL teacher

Task TL inhibitions

x173 Preference of TL writing to speaking, to avoid a 'fool's gown'
x174 Dislike of TL conversation owing to a feeling of helplessness
x175 Preference of multiple choice exercises because in them 'you won't get into a pinch'
x176 Finding TL speaking irritating
x177 Feeling of failure in face of a grammar exercise
x178 Questioning the value of TL speaking skill
x179 Preference of grammar because 'you can learn it by heart'
x180 Feeling ridiculous in trying to pronounce TL 'genuinely'
x181 Reluctance to use TL in class
x182 Finding one's voice 'funny' when speaking TL
x183 Liking for role play, dramatisations, etc. because in them 'you get a new identity'
x184 Finding idiomatic TL usage 'funny'

For the wording of central FL SC and inhibition items, see APP. 3.

APPENDIX 2.

Inner consistencies and test-retest reliabilities of the measuring instrument

Variable		if variable ( ) deleted	α	r
x301:x5,x54-x59	.81			.78
x302:x3,x4,x6-x13	.81			.75
x303:x16,x18,x22, x25,x26,x31	.44	(x16)	.55	.58
x304:x14,x17,x19, x21,x28,x29	.80	(x21)	.85	.74
x305:x15,x20,x23, x24,x27,x30	.81			.75
x306:x32-x41	.64	(x33)	.67	.66
x307:x43,x45,x47, x48,x50,x53	.75			.74
x308:x42,x44,x46, x49,x51,x52	.51			.70
x309:x60-x65	.75	(x64)	.78	.73
x310:x66-x71	.65	(x71)	.71	.67
x311:x73,x74,x75, x78,x80,x82	.84			.79
x312:x72,x76,x77,x79 x81,x83,x84	.72	(x77)	.74	.66
x313:x87,x88,x90, x93,x96,x98	.90			.77
x314:x86,x89,x95 x97,x99	.75			.73
x315:x85,x91,x92 x94,x100	.82			.77
x316:x101-x110	.56	(x105)	.58	.62
x317:x111,x113,x116 x117,x118,x121	.66	(x113)	.74	.81
x318:x112,x114,x115, x119,x120,x122	.70			.71
x319:x123,x125,x128,				

x131,x133,x138	.65			.78
x320:x124,x126,x127, x129,x130,x132,x134 x135,x136,x137	.78			.82
x321:x139,x142,x145, x148,x150,x151	.63			.74
x322:x140,x141,x143, x144,x146,x147, x149,x152	.71	(x141)	.72	.69
x323:x153-x160	.78	(x153)	.79	.73
x324:x161-x172	.84			.79
x325:x173-x184	.75	(x179)	.77	.78
x301,x302	.87			.84
x303-x305	.87	(x16,x21)	.90	.81
x306	.64	(x33)	.67	.66
x307,x308	.76			.77
x309,x310	.77	(x69,x71)	.81	.79
x311,x312	.86	(x77)	.87	.78
x313-x315	.83			.83
x316,x317	.70	(x113)	.72	.79
x318-x320	.89			.87
x321,x322	.79			.75
x323-x325	.91			.82
x301-x305	.92	(x16)	.93	.88
x306-x308	.73	(x33)	.75	.77
x309-x312	.89	(x71)	.90	.86
x313-x315	.93			.83
x316-x320	.89	(x113)	.89	.86
x321-x325	.92	(x179)	.93	.82
The whole instrument	.88			.85

APPENDIX 3. Factor structures of the measured area

3.1. Filter factors

Level 1. Motivation

ROTATED FACTOR MATRIX:

	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5	COMMUNALITY
#5	.01571	.32[illegible]	.32126	-.08562	.02170	.21562
#54	.14378	.34[illegible]	.23311	.01536	.04669	.37204
#55	.24094	.61542	.17[illegible]	-.19459	.17659	.536[illegible]1
#56	.18965	.49578	.05273	-.04194	.28323	.36036
#57	.10276	.48[illegible]	.11257	.12995	.15111	.538[illegible]
#58	.33463	.57[illegible]58	.04[illegible]	.10292	.28226	.53[illegible]
#59	.14674	.78620	.1773[illegible]	.22045	.00263	.64376
#3	.58756	.1750[illegible]	.1612[illegible]	-.07349	.11700	.39419
#4	.32375	.[illegible]4178	.117[illegible]	.00556	.17003	.20535
#6	.2964[illegible]	.169[illegible]	.55315	.01676	.31267	.32535
#7	.16123	.2[illegible]	.3142[illegible]	.18690	.18027	.2316[illegible]
#8	.26010	.17551	.54911	.07532	-.01487	.34981
#9	.30968	.226[illegible]	.42951	-.10336	.28956	.4316[illegible]
#10	.31963	.2[illegible]	.[illegible]451	.20790	-.01076	.3330[illegible]
#11	.06371	.1[illegible]	.27116	-.32757	.49336	.28737
#12	.23567	.18210	.15596	.17470	.35950	.26372
#13	.42509	.2505[illegible]	.41732	.02004	.30583	.53257
#16	-.00619	-.02035	-.33060	.24652	-.07033	.17721
#18	.23551	.11655	.58196	-.01139	.05793	.41231
#22	.49979	.19582	.14325	.09429	.25585	.29[illegible]
#25	.16732	.01756	-.0[illegible]75	.49421	.05529	.27265
#26	.46351	.15987	.03[illegible]58	.13152	.21405	.30[illegible]51
#31	.41783	.09534	-.2612[illegible]	.24079	.07912	.2321
#14	.73657	.33903	.26401	.09648	-.03976	.65036
#17	.75268	.16473	.27184	.12906	-.04099	.68757
#19	.52841	.04947	.25535	.31570	.07369	.44773
#21	.05590	-.03748	-.02406	.45731	-.03590	.21350
#28	.61418	.12439	.29171	.19731	.09476	.52[illegible]30
#29	.49842	.13255	.22576	.28128	.06539	.45602
#15	.49497	.25292	.48364	.05958	.21908	.594[illegible]
#20	.68103	.36529	.14545	.06263	.24613	.32042
#23	.33966	.21136	.24[illegible]	.62529	.18265	.48412
#24	.44531	.20363	.30[illegible]	.25417	.33912	.51596
#27	.40048	.22513	.231[illegible]	.41953	.15580	.45555
#30	.47590	.24529	.21[illegible]	.09048	.08307	.36754

FACTOR	EIGENVALUE	PCT OF VAR	CUM PCT
1	9.996[illegible]	28.6	28.6
2	1.794[illegible]	5.1	33.7
3	1.14[illegible]	3.4	37.1
4	.7511[illegible]	2.1	39.2
5	.610[illegible]	1.7	41.0

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APP. 3.1.

Level 2. Personality traits

ROTATED FACTOR MATRIX.

	FACTOR 1	FACTOR 2	FACTOR 3	COMMUNALITY
X32	.07207	.37456	-.1[illegible]	.16013
X33	-.38793	-.08425	-.46945	.23194
X34	.02936	.44[illegible]	.06[illegible]	.20157
X35	.01662	.59[illegible]	.17472	.35555
X36	.03459	.56592	.27730	.42235
X37	.07777	.39603	-.02545	.1637
X38	.03462	.45502	-.04020	.211[illegible]7
X39	.03782	.56511	.02079	.32142
X40	.06047	.16035	-.20755	.1241[illegible]
X41	-.00863	.34647	-.28333	.20076
X43	.70627	.02677	.09416	.50842
X45	.55849	.11314	-.04537	.32577
X47	.60092	.07440	-.04749	.36547
X48	.56025	.17605	-.09721	.35972
X50	.29393	.20967	.01594	.13061
X53	.66020	.08240	.13800	.45937
X42	.36479	.14793	.06695	.15946
X44	.68005	.05404	.13595	.56102
X46	.18305	.07259	.37611	.18023
X49	.17691	.04454	.19457	.07364
X51	.19519	.23313	.08229	.09424
X52	.34544	-.00192	.15521	.14585

FACTOR	EIGENVALUE	PCT OF VAR	CUM PCT
1	3.11976	14.5	14.5
2	1.84476	8.4	22.9
3	.71777	3.2	26.1

APP. 3.1.

Levels 3 and 4. TL and situation related attitudes

ROTATED FACTOR MATRIX

	FACTOR 1	FACTOR 2	FACTOR 3	COMMUNALITY
X60	.59773	.24642	.42917	.80510
X61	.41573	.12248	.53532	.53226
X62	.25410	.07395	.54111	.36251
X63	.32455	.26269	.42053	.34797
X64	.05239	.09754	.37592	.15356
X65	.31616	.16355	.52529	.60265
X66	.19251	.62912	.17374	.45933
X67	.34155	.65243	.16452	.60453
X68	.04595	.67246	.17536	.45915
X69	-.21434	.22621	.14291	.11244
X70	.13695	.64425	.34297	.39555
X71	.09444	.14557	-.11703	.04460
X73	.69547	.16032	.19396	.55525
X74	.70535	.10142	.24593	.56977
X75	.64432	.00913	.34707	.53545
X76	.40501	.10917	.16457	.21157
X80	.57916	.23464	.19711	.43321
X82	.74942	.06557	.25145	.62244
X72	.63444	.39559	.15495	.59125
X78	.27415	.66447	.09650	.28246
X77	.04654	.30734	.02209	.09712
X79	.34263	.32904	.01455	.22623
X81	.56635	.28537	.17375	.43226
X83	.39797	.21927	.12559	.60974
X84	.48127	.18550	.00707	.26445

FACTOR	EIGENVALUE	PCT OF VAR	CUM PCT
1	7.49441	30.0	30.0
2	1.41204	5.7	35.6
3	.80904	3.2	38.9

ROTATED FACTOR MATRIX:

	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	COMMUNALITY
X87	.41532	.19609	.31434	.35534	.43602
X88	.67261	.14556	.35416	.31161	.69612
X90	.56138	.16075	.53605	.19211	.66537
X93	.67025	.15154	.28595	.27045	.65540
X96	.78847	.17833	.17764	.16922	.71384
X98	.75545	.24777	.08164	.20609	.66124
X86	.37933	.17552	.23414	.43735	.44032
X89	.16719	.20596	.14134	.60031	.45196
X95	.32060	.39767	.57475	.22538	.64436
X97	.30306	.21179	.19502	.57097	.51615
X99	.13953	.59120	.13013	.17015	.41658
X85	.21379	.41472	.25152	.45892	.50767
X91	.26320	.29291	.54222	.31383	.54756
X92	.22963	.44612	.55124	.35013	.67820
X94	.14793	.72570	.22390	.20266	.63975
X100	.39401	.49306	.17377	.18067	.45336

FACTOR	EIGENVALUE	PCT OF VAR	CUM PCT
1	7.34167	45.9	45.9
2	.96971	6.1	51.9
3	.45817	2.9	54.8
4	.37544	2.3	57.2

APPENDIX 3.2.
FL SC FACTORS

F1: 'THE SC FACTOR PROPER'

		A
GEN		
X112	I AM REALLY GOOD AT FLS.	.60
X115	I OFTEN FEEL THAT I'M NO GOOD AT FLS. (R)	.49
X119	I'M SURE MY FELLOW STUDENTS DON'T CONSIDER ME A GENIUS AT FLS. (R)	.47
SPEC		
X131	I LEARN ENGLISH WELL.	.76
X133	SOMETIMES I FEEL THAT ENGLISH IS AN IMPOSSIBLE LANGUAGE FOR ME. (R)	.62
X138	COMPARED WITH OTHERS, I'M NOT A 'VIRTUOSO' IN ENGLISH. (R)	.51
TASK		
X126	I OFTEN FEEL THAT LEARNING ENGLISH GRAMMAR IS IMPOSSIBLE FOR ME. (R)	.41
X127	I CAN WRITE ENGLISH WELL.	.68
X130	I AM REALLY SATISFIED WITH MY ENGLISH SPEAKING SKILL	.63
X132	MY ENGLISH SPEAKING SKILL IS POOR.	.70
X134	I FEEL MY ENGLISH PRONUNCIATION IS LOUSY.	.59
X135	I KNOW ENGLISH GRAMMAR WELL.	.54
X136	MY PRONUNCIATION OF ENGLISH IS GOOD.	.67

R= REVERSED

F2: THE 'IDEAL FL SELF-CONCEPT' FACTOR

		A
GEN		
X114	I WOULD LIKE TO BE A REALLY GOOD LEARNER OF ENGLISH.	.65
(X120)	USING A FL I FEEL NICELY LIKE A "NEW PERSON".	(.39)
(X122)	I'D LIKE TO BE A FL VIRTUOSO ADMIRED BY EVERYBODY.	(.30)
SPEC		
(X123)	I FEEL I 'GET ANGLICIZED' WHEN I USE ENGLISH.	(.32)
X125	I'D LIKE TO MASTER ENGLISH LIKE A NATIVE IN EVERY WAY.	.84
TASK		
X124	I WISH I COULD WRITE IN ENGLISH LIKE A NATIVE.	.75
X129	I WISH I COULD SPEAK ENGLISH LIKE A NATIVE.	.81
X137	I WISH I COULD PRONOUNCE ENGLISH PERFECTLY.	.69

F3: THE GENERAL ACADEMIC-GENERAL FL SC FACTOR

GEN. ACAD.		
X111	AS A SCHOLAR, I'M GOOD ENOUGH.	.65
(X116)	IN SCHOOL I GET ON AS WELL AS MOST OF MY CLASSMATES.	(.38)
X117	I OFTEN FEEL THAT I'M NO GOOD AS A SCHOLAR. (R)	.53
(X118)	I WOULD REALLY LIKE TO GET IN BETTER AT SCHOOL. (R)	(.39)
X121	GENERALLY SPEAKING, I GET ON WELL WITH MY STUDIES.	.65
GEN. FL		
X112	I AM REALLY GOOD AT FLS.	.44
X115	I OFTEN FEEL THAT I'M NO GOOD AT FLS. (R)	.46
X119	I'M SURE MY FELLOW STUDENTS DON'T CONSIDER ME A GENIUS AT FLS. (R)	.43
TASK TL		
(X138)	COMPARED WITH OTHERS, I'M NOT A 'VIRTUOSO'. (R)	(.34)
X126	I OFTEN FEEL LEARNING ENGLISH GRAMMAR IS IMPOSSIBLE FOR ME. (R)	.41
(X135)	I KNOW ENGLISH GRAMMAR WELL.	(.36)

APP. 3.2. CONT.
FL SC INHIBITIONS

F1: DENYING THE VALUE OF FL/TL LEARNING

		A
GEN		
X156	THE IMPORTANCE OF LEARNING FLS IS MADE FOR MUCH FUSS OF.	.68
(X157)	I CAN'T REALLY ADOPT THE ROLE OF A FL SPEAKER.	(.38)
(X159)	USING A FL I ALWAYS FEEL SOMETHING OF A CLOWN.	(.39)
SPEC		
X164	I DON'T LIKE THE FACT THAT IN ENGLISH LESSONS YOU SORT OF HAVE TO STOP BEING A FINNISH SPEAKER.	.40
X167	TOO MUCH FUSS IS MADE OF THE IMPORTANCE OF KNOWING ENGLISH.	.66
(X168)	THE ENGLISH WORLD THEY SPEAK ABOUT IN THE LESSONS IS VERY STRANGE TO ME.	(.36)
TASK		
(X175)	SOME ENGLISH EXERCISES ARE NICE BECAUSE YOU DON'T GET IN TROUBLE IN THEM.	(.37)
(X176)	SPEAKING ENGLISH IN GENERAL IRRITATES ME.	(.32)
(X177)	OFTEN WHEN I AM SUPPOSED TO DO GRAMMAR EXERCISE I JUST FEEL I CAN'T MAKE IT.	(.35)
X178	TOO MUCH FUSS IS MADE OF BEING ABLE TO SPEAK ENGLISH.	.62
(X180)	I FEEL RIDICULOUS WHEN I TRY TO PRONOUNCE ENGLISH AUTHENTICALLY.	(.33)
(X181)	IN THE ENGLISH LESSON I JUST DON'T WANT TO USE ENGLISH.	(.30)

F2: FEAR OF 'PERFORMING'

		A
GEN		
(X153)	IN FL LESSONS I FEAR ALL SORTS OF BLUNDERS IF I OUGHT TO 'PERFORM' A THING.	(.38)
(X157)	I CAN'T REALLY ADOPT THE ROLE OF A FL SPEAKER.	(.31)
(X159)	USING A FL I ALWAYS FEEL SOMETHING OF A CLOWN.	(.34)
X160	IN FL LESSONS I OFTEN FEEL REALLY HELPLESS.	.61
SPEC		
X161	IN ENGLISH LESSONS I FEEL THAT EVERYBODY KNOWS ENGLISH BETTER THAN I.	.58
(X165)	IN THE ENGLISH LESSON I ALWAYS FEEL TENSE / UNEASY.	(.32)
(X169)	IN THE ENGLISH LESSONS THE TEMPO IS ALWAYS TOO HIGH.	.40
X170	SOME OF MY CLASSMATES ARE 'TOO GOOD' SO I DON'T WANT TO PARTICIPATE AT ALL.	.54
X171	IN ENGLISH LESSONS I ONLY 'PERFORM' IF I'M SURE I'LL MAKE NO MISTAKES.	.44
(X172)	MY ENGLISH TEACHER'S DEMANDS ARE TOO HARD AND GET ME DOWN.	(.39)
TASK		
(X174)	CONVERSATION EXERCISES ARE NOT NICE BECAUSE I FEEL HELPLESS IN THEM.	(.39)
(X17 ')	OFTEN WHEN I'M SUPPOSED TO DO A GRAMMAR EXERCISE I JUST FEEL I CAN'T MAKE IT.	(.38)
(X181)	IN THE ENGLISH LESSONS I JUST DON'T WANT TO USE ENGLISH.	(.33)

F4: UNREAL LANGUAGE CLASS ATMOSPHERE

		A
GEN		
X158	THE ATMOSPHERE IN FL LESSONS IS NEVER F:EE.	.43
SPEC		
X162	MY ENGLISH TEACHER HAS SOMETHING AGAINST ME.	.59
(X163)	ENGLISH AS A LANGUAGE DEPRESSES ME.	(.32)
(X164)	I DON'T LIKE THE FACT THAT IN ENGLISH LESSONS YOU SORT OF HAVE TO STOP BEING A FINNISH SPEAKER.	.40
X165	IN THE ENGLISH LESSON I ALWAYS FEEL TENSE / UNEASY.	.42
X166	I FEEL MY ENGLISH TEACHER IS JUST ACTING.	.58
(X169)	IN ENGLISH LESSONS THE TEMPO IS ALWAYS TOO HIGH.	(.32)
X172	MY ENGLISH TEACHER'S DEMANDS ARE TOO HIGH AND GET ME DOWN.	.43

F6: LANGUAGE SHOCK AND ALIENATION

GEN		
X154	IN FL LESSONS I FEEL THAT I'M SUPPOSED TO "PLAY A FOREIGNER".	.42
X155	THE STRANGE WORLD OF FL LESSONS WORRIES ME.	.55
X159	WHEN USING A FL I ALWAYS FEEL SOMETHING OF A CLOWN.	.40
SPEC		
(X163)	ENGLISH AS A LANGUAGE DEPRESSES ME.	.51
(X165)	IN THE ENGLISH LESSON I ALWAYS FEEL TENSE / UNEASY.	(.36)

		A
TASK		
(X176)	SPEAKING ENGLISH IN GENERAL IRRITATES ME.	(.38)
(X178)	TOO MUCH FUSS IS MADE OF BEING ABLE TO SPEAK ENGLISH.	(.31)
(X181)	IN THE ENGLISH LESSON I JUST DON'T WANT TO USE ENGLISH.	(.30)
(X182)	MY OWN VOICE SOUNDS FUNNY WHEN I SPEAK ENGLISH.	(.35)
(X184)	TRYING TO EXPRESS THINGS IN THE TYPICALLY ENGLISH WAY MAKES ME FEEL AN ASS.	(.30)

F7: GENERAL ACADEMIC AND FL COMMUNICATION APPREHENSION

GEN. ACAD.

X140	IN CLASS I FEAR ALL SORTS OF BLUNDERS.	.41
X147	I AM ALWAYS A BIT NERVOUS WHEN I OUGHT TO 'PERFORM' SOMETHING IN SCHOOL.	.49
X149	I WOULDN'T LIKE TO 'PERFORM' ANYTHING IN CLASS BECAUSE OTHERS MIGHT LAUGH AT ME.	.54

GEN. FL

X153	IN FL LESSONS I FEAR ALL SORTS OF BLUNDERS IF I OUGHT TO 'PERFORM' A THING.	.45

TASK

X173	WRITING EXERCISES ARE NICER THAN SPEAKING ENGLISH, BECAUSE THEN YOU DON'T HAVE TO "PLAY THE CLOWN".	.49
(X174)	CONVERSATION EXERCISES ARE NOT NICE, BECAUSE I FEEL HELPLESS IN THEM.	(.36)
X183	ROLE-PLAYING, DRAMA ETC IS NICE, BECAUSE THEN YOU GET A 'NEW PERSONALITY'. (R)	.40

APPENDIX 3.3. FACTORS IN THE WHOLE AREA

REVIEW OF FL SC IN THE ANALYSIS

"FACTORS IN THE WHOLE AREA" (SUM VARIABLES X301-X325)

(F1, F2: FL SC CONNECTED WITH MOTIVATION & FILTER FACTORS)

F3: GENERAL ANXIETY, ALIENATION, INHIBITIONS; LOW SC
(CONNECTION WITH THE FL SC)

		A
X307	ANXIETY	.79
X308	ALIENATION	.60
X316	GEN. SC	.59
X321	INHIBITIONS / GEN.	.80
X322	INHIBITIONS / GEN. ACAD.	.61
(X323)	INHIBITIONS / GEN. FL	(.36)
(X324)	INHIBITIONS / SPEC. TL	(.33)

F4: THE FL SC

(X302)	MOT-AL. INDICES	(.38)
(X303)	OR 1 (INSTR.)	(.31)
(X305)	OR 3 (COGNIT.)	(.35)
X317	GEN. ACAD. SC	.52
X318	GEN. FL SC	.75
X319	SPEC. TL SC	.64
X320	TASK TL SC	.64

F5: FL SC INHIBITIONS

(X306)	ETHNOCENTRISM	(-.31)
(X320)	TASK TL SC	(.32)
~~(X322)~~	~~INHIBITIONS / GEN. ACAD.~~	~~(-.32)~~
X323	INHIBITIONS / GEN. FL	-.70
X324	INHIBITIONS / SPEC. TL	-.64
X325	INHIBITIONS / TASK TL	-.73

APPENDIX 3.3. Factors in the whole area

ROTATED FACTOR MATRIX:

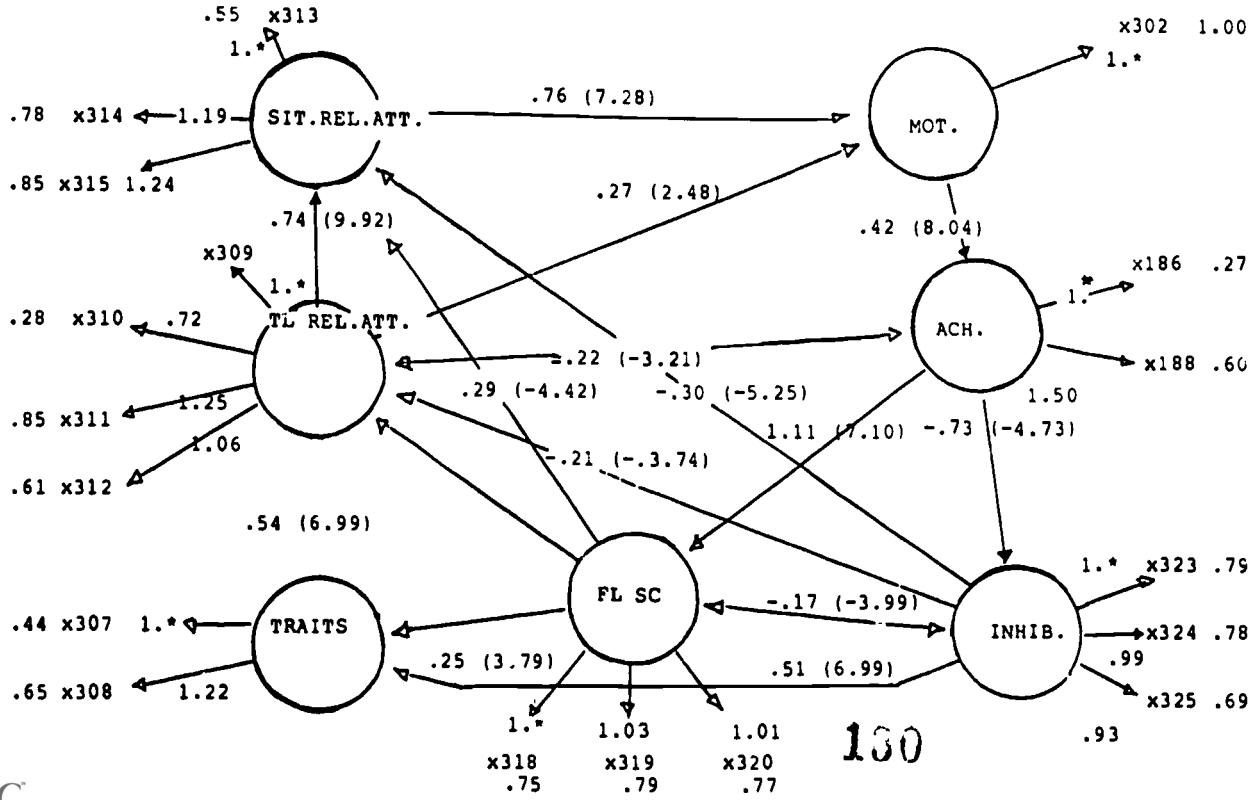
	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5	COMMUNALITY
X301	.57575	.10216	-.29472	.26459	.11960	.69555
X302	.66415	.24754	-.11547	.18233	.25013	.76037
X303	.36945	.39706	.06757	.31649	-.05707	.59497
X304	.62536	.6675	-.00230	.27547	.07339	.68151
X305	.6211-	.65156	-.00151	.35232	.12639	.72955
X306	-.22074	-.06004	.15611	-.13650	-.30967	.18807
X307	-.00904	.00--	.78693	-.02522	-.01920	.62052
X308	-.23907	-.017..	.59526	.06007	-.06060	.61567
X309	-.06557	.539-5	-.05555	.05911	.15506	.53331
X310	-.01562	.661--	-.07051	.05323	.07984	.65277
X311	.63553	.51356	-.00511	.24105	.22969	.78197
X312	.28041	.69010	-.03301	.26449	.17689	.660-7
X313	.75612	.0759-	-.07257	.03153	.10260	.59175
X314	.7035-	.1605-	-.11971	.10675	.20256	.76752
X316	-.07115	.10153	-.59896	.22043	.25550	.6803-
X315	.8172-	.20702	-.09871	.18221	.25402	.8147-
X317	.08-67	.01575	-.26961	.32373	.11190	.30079
X318	.28055	.29158	-.07971	.75536	.24060	.79565
X319	.25590	.62656	.03611	.63980	.26816	.72609
X320	.23901	.39759	-.09162	.63651	.31712	.72525
X321	-.56622	.02774	.78762	-.09442	-.19096	.68678
X322	-.19720	-.08926	.60030	-.15206	-.31860	.56256
X323	-.26376	-.13751	.35774	-.25758	-.69616	.70691
X326	-.66726	-.11022	.32785	-.15637	-.66093	.70515
X325	-.20372	-.25757	.25317	-.23541	-.72950	.76065

FACTOR	EIGENVALUE	PCT OF VAR	CUM PCT
1	[illegible]	[illegible]	39.6
2	[illegible]	[illegible]	50.3
3	[illegible]	5.7	55.0
4	[illegible]	3.3	59.6
5	[illegible]	[illegible]	61.9

APPENDIX 4

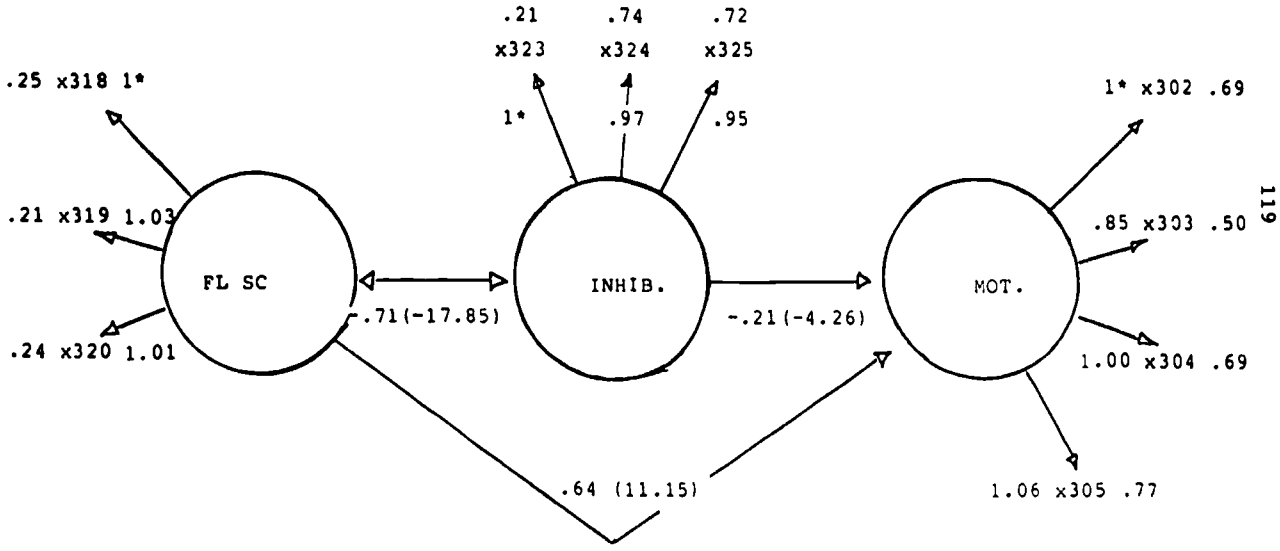
4.1. The filter model ('Model 1')

$X^2(119) = 566.72$; 4.8
GFI = .89
DET = .17
(t-values in brackets)



4.2. The FL SC model ('Model 2')

X (32)= 131.36; 4.1
GFI= .95
DET= .30
t-values in brackets



APPENDIX 5. Filter development and influence

5.1. Factor solutions of background and filter variables
Level 1. Background and motivation variables

ROTATED FACTOR MATRIX:

	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5	COMMUNALITY
#196	.46892	.16926	-.06223	-.26209	.20737	.36200
#401	.25616	.13494	-.02411	-.01798	.12160	.09952
#200	.13009	.04563	.68344	.04592	.02333	.25539
#201	.07692	.07403	.66081	-.05372	.07335	.23549
#202	-.06809	.03512	.14393	.08085	.09965	.04272
#40	.13462	.01407	.11526	.04697	.36375	.16617
#403	.01349	.10294	.08133	.25469	.32290	.12469
#209	.03537	-.05541	-.02259	-.04395	.18534	.04242
#210	.22945	.17639	.30487	-.20317	.13956	.19620
#3	.21999	.54933	-.10926	-.21172	-.07695	.23311
#54	.23407	.54708	.08158	-.07228	.07645	.37166
#55	.23551	.59570	.10424	-.16539	.01801	.47731
#56	.19342	.50023	.22506	-.00007	-.06533	.33146
#57	.15758	.69295	.13612	.08702	.00513	.53114
#58	.30759	.58065	.23690	.13525	.04259	.50733
#59	.23871	.72098	.01554	.14886	.07721	.60515
#5	.68903	.13636	.22455	-.01383	.13691	.32840
#6	.30912	.23179	.27980	-.02385	.10567	.23930
#6	.59324	.21246	.19444	-.15057	-.21729	.50479
#7	.36389	.24161	.07379	.06602	-.11609	.19991
#8	.55250	.22108	-.10837	-.10492	.00443	.37690
#9	.49985	.26133	.19951	-.19468	-.15948	.41739
#10	.55612	.24471	-.05282	.02369	.06721	.37472
#11	.11816	.22605	.33661	-.04932	-.25831	.24062
#12	.30646	.17348	.36257	.12393	-.17004	.29984
#13	.60034	.20201	.25512	-.04265	-.14037	.52655
#16	-.19076	-.05775	.02278	.36710	.11146	.18743
#18	.55744	.16119	-.09915	-.18817	-.07244	.35514
#22	.48619	.19683	.25326	.13196	-.01065	.35436
#25	.17869	.03369	-.02205	.52247	-.09787	.31609
#26	.40628	.16491	.16939	.20572	.00981	.26336
#31	.28758	.04818	.17632	.32440	.13512	.23980
#14	.67975	.04066	.22040	.11790	[illegible]	.57959
#17	.70571	.12304	.20121	.15769	.22115	.62742
#19	.60680	.04536	.07931	.28465	.01[illegible]	.45916
#21	.10562	-.03020	-.02613	.40946	.01[illegible]	.18058
#28	.66209	.13352	.16360	.14801	.13509	.52311
#29	.60553	.12697	.04903	.23661	.10211	.45151
#15	.08784	.27158	.15702	.04932	-.00474	.08631
#20	.47955	.35062	.26334	.07927	.02[illegible]	.30929
#23	.49457	.26379	.13683	.30008	-.00339	.42139
#24	.57129	.23307	.27869	.17049	-.06482	.49162
#27	.49940	.24292	.10037	.36755	-.02654	.45275
#30	.51152	.23437	.11912	.05990	.19181	.37075

FACTOR	EIGENVALUE	PCT OF VAR	CUM PCT
1	10.44254	23.7	23.7
2	1.82259	4.1	27.9
3	1.33219	3.0	30.9
4	.93274	2.1	33.0
5	.74652	1.7	34.8

APP. 5.1.

Level 2. Background and trait variables

ROTATED FACTOR MATRIX:

	FACTOR 1	FACTOR 2	FACTOR 3	COMMUNALITY
X194	-.00772	-.47181	.15346	.24621
X401	-.06136	-.20332	.17402	.07922
X200	.06873	.30061	.43070	.19023
X201	.04870	-.05251	.36024	.14812
X202	-.01135	.11117	.19163	.04912
X402	-.10126	-.04797	.36397	.16001
X403	-.16801	.01133	.31113	.12515
X209	.08942	-.02223	.02761	.00945
X210	-.02146	-.19723	.35414	.16811
X32	.04575	.38549	-.01940	.15324
X33	-.09277	-.03692	.34493	.12553
X34	.02178	.45430	-.03530	.20411
X35	.00913	.56140	-.17732	.34670
X36	.00931	.53390	-.29519	.37226
X37	.11032	.40334	.06450	.17877
X38	.04668	.45864	.06241	.21460
X39	.00809	.56136	-.10922	.32712
X40	.05868	.17940	.17459	.06611
X41	-.03878	.34340	.09030	.12958
X43	.72426	.05320	-.07119	.53224
X45	.53193	.16682	-.03053	.31096
X47	.57514	.09675	-.06535	.34403
X48	.56640	-.12566	.00947	.33703
X50	.27515	.20391	-.14412	.13806
X53	.64826	.07367	-.16143	.45222
X42	.55606	.14273	-.07321	.33249
X44	.67993	.04931	-.19585	.50310
X46	.19651	.05122	-.27414	.11639
X49	.18112	-.00025	.23177	.08632
X51	.15022	.19816	-.27237	.13736
X52	.34551	-.02479	-.16139	.14604

FACTOR	EIGENVALUE	PCT OF VAR	CUM PCT
1	3.48635	11.2	11.2
2	2.05119	6.6	17.9
3	1.01607	3.3	21.1

APP. 5.1.

Level 3. Background variables and TL related attitudes

ROTATED FACTOR MATRIX:

	FACTOR 1	FACTOR 2	FACTOR 3	COMMUNALITY
X194	.45849	.11136	-.01970	.22284
X401	.25753	.03142	-.03021	.06821
X200	.16535	.04521	.39852	.18059
X201	.16108	-.02765	.35755	.15637
X202	-.07140	.09205	.19117	.05092
X402	.11056	.29631	.04715	.10762
X403	.01759	.22631	.12576	.06734
X209	.06233	.04893	-.14725	.02796
X210	.30186	.04444	.27493	.16568
	.68058	.28929	.20471	.58648
	.50479	.23761	.40298	.47369
	.31949	.21357	.42570	.32700
X63	.35968	.35569	.33231	.38631
X64	-.13224	-.20304	-.16714	.08665
X65	.30230	.28232	.32921	.34132
X66	.29760	.58858	-.05144	.44151
X67	.42909	.03972	-.08368	.60036
X68	.13079	.68195	-.00784	.48222
X69	.16922	-.27594	-.04268	.10550
X70	.23790	.55068	.12220	.37479
X71	.09056	.08950	-.13285	.03386
X73	.70539	.12170	.15601	.53673
X74	.70217	.10259	.22702	.55511
X75	.67829	.03661	.30103	.55206
X78	.41231	.11594	.18319	.21700
X80	.57976	.23792	.14309	.41320
X82	.76550	.05855	.14275	.60980
X72	.70845	.34598	-.05045	.62613
X76	.32263	.40087	-.04298	.26676
X77	.05148	.33720	-.03893	.11787
X79	.36678	.26970	-.11254	.21993
X81	.57859	.27375	.05797	.41583
X83	.65157	.15305	-.01399	.44816
X84	.50084	.10754	-.12212	.27732

FACTOR	EIGENVALUE	PCT OF VAR	CUM PCT
1	8.[illegible]	21.7	21.7
2	[illegible]	9.5	28.2
3	[illegible]	2.8	31.0

APP. 5.1.

Level 4. Background variables and situation related attitudes

ROTATED FACTOR MATRIX:

	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	COMMUNALITY
X194	.06474	.09817	.48920	.02870	.25397
X401	.06717	-.00323	.33269	.03361	.11653
X200	.43947	.16010	.00952	.12200	.23314
X201	.36827	.06237	.12313	.09175	.15121
X202	.08856	.35271	-.08972	.25452	.08365
X402	.11500	.00066	.20528	.38403	.20478
X403	.01040	.01458	.07035	.68280	.47149
X209	.00956	-.25906	.16926	.04242	.09765
X210	.30337	.12349	.22062	.14716	.17771
X87	.48352	.45168	.08745	.00185	.44444
X88	.75172	.34635	.10467	.05660	.69920
X90	.64497	.41068	.07164	.14409	.61054
X93	.71124	.36109	.10306	.10972	.64457
X96	.78004	.17945	.15703	.03687	.66667
X98	.75380	.17729	.19835	.04487	.64241
X86	.44684	.44197	.08691	.04922	.42205
X89	.23709	.49281	.11593	.10064	.32302
X95	.39647	.57695	.25007	.11835	.55664
X97	.39092	.49335	.19533	.02390	.41536
X99	.16065	.35264	.54923	-.01736	.45212
X85	.27330	.00116	.22299	.01914	.43645
X91	.35536	.56478	.21726	.08628	.49948
X92	.33422	.66570	.26954	.12392	.64312
X94	.17401	.48038	.55584	.00765	.57006
X100	.41506	.33198	.40072	-.00253	.44307

FACTOR	EIGENVALUE	PCT OF VAR	CUM PCT
1	7.90375	31.6	31.6
2	1.12363	4.5	36.1
3	.75751	3.0	39.1
4	.59697	2.4	41.5

APP. 5.1.

Level 5.1. Background and FL SC variables

ROTATED FACTOR MATRIX:

	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5	FACTOR 6	COMMUNALITY
B106	.24335	.27823	.13601	.12039	.06170	.02808	.17816
B001	.20234	.15916	.30636	.33644	.30711	-.07376	.10437
B230	.07231	.12118	.05125	.00366	.00161	.40547	.20934
B201	.00701	.33344	.00316	.29705	.00033	.40363	.24317
B202	-.05243	.01089	-.03564	.00619	.03221	.12608	.01012
B432	.08147	.15420	-.10716	.17152	.31187	.03039	.10210
B433	.13120	.01717	-.04605	.10591	.32708	.10510	.1792
B200	.00622	.13166	.30366	-.01002	.03230	-.34248	.06730
B210	.13135	.22176	.00351	-.01349	.13037	.33030	.22165
B211	.13618	-.05125	.27125	.20175	.36115	-.12308	.20301
B102	.01292	-.11933	.16325	.34613	-.03318	-.07403	.33064
B103	.04544	-.12333	.03423	.71342	-.01320	.00330	.33073
B104	.00771	.00463	.23167	-.03023	.43313	-.02108	.30561
B105	-.01333	.23003	.33493	-.21739	.20202	.13733	.20136
B106	-.03741	-.00417	-.31143	.43033	.03200	.02908	.43234
B107	.11760	.10327	.16425	.11602	.00372	-.30208	.10202
B108	.10002	.06010	.11260	-.13112	.40032	-.20730	.33073
B109	.00032	.12290	.22313	-.12721	.40023	.03001	.20800
B110	.23371	.30433	.13260	.24309	.00331	-.31032	.27517
B111	.20164	-.01731	.46908	-.11731	.12072	.01371	.30002
B113	.00037	.30273	.04074	-.21730	.04307	.06009	.10616
B116	.10072	.03276	.30302	-.03070	.23030	.00301	.23373
B117	.24706	.30021	.33030	.13010	.13370	-.00237	.43920
B118	.10327	-.10331	.35031	.10036	-.06116	-.11603	.23423
B121	.17013	.15330	.00360	-.10306	.13360	.07002	.16453
B112	.66000	.11403	.36111	-.12730	-.03667	.00003	.61316
B114	.30702	.00432	-.30200	-.13003	.00133	.10330	.31106
B115	.36073	.04721	.30703	.10069	-.00730	.00703	.30167
B119	.30330	.17369	.32521	.00522	-.16103	-.12003	.47272
B120	.31302	.40212	-.02340	-.00234	.10032	.00313	.11313
B122	.20333	.41539	.10620	-.31004	-.01006	-.22223	.17640
B123	.29636	.30432	-.13525	-.14920	.12450	-.00730	.23202
B125	.00207	.01004	.03313	-.10333	.09020	.00773	.00237
B128	.07620	.20936	-.06706	-.30003	.03202	-.37102	.27703
B131	.73013	.13276	.13015	-.07032	.13337	.12103	.60220
B133	.62736	.17301	.17207	.00042	.02333	.00031	.47002
B134	.37271	-.02169	.24401	.23102	-.07033	-.13170	.41234
B124	.03075	.73670	.05257	-.17012	.02359	.07245	.10015
B126	.43723	-.00634	.33906	.19339	-.00027	.07320	.30367
B127	.09905	.10027	.12612	-.03719	.00307	.00320	.10204
B129	.14004	.77032	.03140	-.11030	.03003	.03700	.03107
B130	.00320	.02233	-.07730	-.32349	.20000	.02260	.43126
B132	.07012	.03037	.04240	.01409	.22008	-.00209	.31413
B136	.37133	-.00164	.03561	.00177	.23327	-.02000	.30376
B135	.37070	.0041	.20033	-.10009	-.03420	.00720	.44200
B138	.00021	.210	-.30357	-.39013	.23200	-.00700	.30061
B137	.11263	.0716	-.01500	-.00407	.10133	.10333	.43051

FACTOR	EIGENVALUE	PCT OF VAR	CUM PCT
1	8.10905	17.6	17.6
2	3.70710	5.1	23.3
3	1.40624	3.0	26.1
4	1.36150	3.3	32.4
5	1.24070	2.6	35.0
6	1.01716	2.2	37.2

APP. 5.1.

Level 5.2. Background and inhibition variables

ROTATED FACTOR MATRIX

	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5	FACTOR 6	FACTOR 7	COMMUNALITY	FACTOR	EIGENVALUE	PCT OF VAR	CUM PCT
6144	-.48110	-.11116	-.06051	-.16317	-.03761	.05120	.17251	.21710	1	11.11069	20.2	20.2
4401	-.32767	.00135	-.11117	-.00030	-.00001	.11102	-.09005	.15746	2	2.60000	4.7	25.0
8204	-.08315	.06391	.03606	-.01971	-.35070	-.07118	-.03175	.32601	3	1.75671	3.2	28.1
4201	-.14621	-.25319	.03126	-.01191	-.40265	-.01261	-.02021	.25612	4	1.29061	2.3	30.4
4232	.10226	-.01645	-.05725	-.11005	-.22300	-.00061	.06020	.12083	5	1.18570	2.7	32.6
4402	.01772	-.39601	-.21052	-.15105	-.26030	.24502	.17025	.24039	6	.91173	1.7	34.1
4403	.06140	-.14646	-.40026	-.14417	-.23605	.06704	.00117	.23633	7	.67825	1.2	35.3
4204	-.05443	.06317	.02144	-.30349	.04300	.31138	.01000	.10612				
10	-.21443	-.20626	-.01411	-.00229	-.17717	.16053	-.03230	.23615				
6139	.67402	.25777	.35327	.25345	.06320	-.00567	.27630	.29476				
14	.22417	.11144	.09741	.34930	.01303	.03606	.30335	.10731				
6145	.31460	.071	.15045	.42022	.01690	.12066	.06670	.36071				
4144	.25516	.15051	.14672	.16505	-.00026	.06203	.27305	.30930				
6110	.16720	.16724	.35115	.17751	-.07507	.06033	.36370	.23760				
4131	-.01441	-.02416	.12345	.15256	-.04355	.03622	.37112	.40318				
8160	-.03517	.17557	.70277	.05551	.06062	.02006	.11160	.34371				
4141	.12571	.10667	-.10646	.45117	.00955	-.10021	-.03237	.10101				
4143	.03719	.25322	.37137	.31121	.00736	.03239	.12676	.34610				
8144	.16376	.30771	.26257	.45601	.13667	.06090	-.06312	.34705				
6140	.26201	.01562	.23709	.40116	.16161	.11032	-.03600	.40637				
6147	.14471	.01126	.54761	.12617	-.12160	-.06300	-.00336	.37015				
6146	.10655	.16556	.75531	-.00667	.01735	.03500	-.06356	.54010				
6132	.20611	.17237	.06733	.35226	.10106	-.06671	.00608	.40207				
1133	-.06217	.15375	.55505	.36157	.03770	.17609	-.02106	.47756				
6134	.21533	.37613	.13712	.15011	.16700	.15017	.00037	.29021				
6135	.36431	.42760	.35651	.21250	.11225	.00115	-.10000	.41031				
6136	.41611	.13111	-.05672	.00223	.11565	-.01655	-.02520	.40535				
4137	.35542	.64421	.21550	.25550	.10476	-.00136	.02102	.42035				
6130	.22731	.15711	.11206	.20612	.30706	.21007	.02632	.33631				
4114	.35613	.33651	.11123	.13051	.17503	-.02600	-.04610	.31103				
1160	.15156	.3272	.21671	.16607	.02560	.12002	.03736	.50620				
4161	.18233	.55705	.21366	.00103	-.05986	.17990	.10025	.41307				
4102	.60037	.12856	.06721	.17615	.46900	.36092	.12023	.46596				
6103	.60375	.30122	.02311	.15536	.22020	.10163	-.00670	.42055				
4144	.66720	.13151	.01693	.11692	.19106	.25035	-.11206	.38023				
4105	.25517	.5044	.11915	.20722	.20377	.33240	-.03371	.46023				
6106	.45926	.13705	.02262	.10568	.42976	.26016	-.04600	.40571				
6107	.62717	.17652	.31772	.11535	.21706	.02671	-.10676	.40330				
4140	.36627	.26250	.16321	.16000	.02206	.01556	.00612	.25636				
6109	.25436	.16021	.02672	.10122	.32371	.21060	.07317	.34667				
6170	.07654	.60113	.26567	.10506	.00935	.30555	-.04039	.41070				
6171	.1108	.31675	.31263	.10620	.06033	.25120	.02209	.33305				
4172	.23541	.33163	.05505	.1	.15001	.42130	.09000	.40247				
6173	.17297	.71275	.63704	.2310	-.04660	.10650	-.23072	.33219				
6174	.40152	.45576	.70135	.44209	-.01230	.00262	-.10202	.45020				
6175	.30175	.11311	.15024	.07716	.06613	.17140	.00106	.23012				
6176	.61326	.16645	.31250	.00315	.15000	.07116	-.20075	.40760				
6177	.31627	.16257	.36912	.21206	.12571	.11537	.27002	.30207				
4178	.61256	.21776	.22556	.07275	.10600	-.03166	-.03000	.50806				
8179	.04165	-.06603	.07550	-.05067	-.10553	.01073	-.17201	.03347				
6180	.32667	.76655	.75571	.07010	.00630	-.01307	.00630	.10006				
6181	.31316	.67010	.04074	.17703	.16521	.05763	-.13061	.40553				
4182	.17171	.66 1	.41265	.36676	.00375	-.04133	.07006	.31076				
6183	.1101	.07 1	.13066	.16651	-.04501	-.01556	-.30703	.22547				
6184	.36751	.11161	.01502	.11463	.00951	.02370	.00577	.17161				

APPENDIX 5.2. Factor solutions of criterion and filter variables

Level 1. Criterion and motivation variables

ROTATED FACTOR MATRIX:

	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5	COMMUNALITY	FACT.	EIGENVALUE	PCT OF VAR	CUM PCT
#183	.65287	.13839	.23095	.11030	-.20064	.53014	1	11.23353	28.1	28.1
#186	.31185	.18024	.17727	.55049	-.10524	.47541	2	2.04754	5.1	33.2
#187	.17644	.29515	.24192	.84940	-.04569	.90029	3	1.41225	3.5	36.8
#188	.21949	.13254	.42352	.67479	-.04210	.69276	4	.85551	2.1	39.0
#191	.38378	.08759	.41735	.22169	.16012	.40062	5	.81492	2.0	41.0
#5	.04523	.25814	.25363	.34036	-.02291	.25154				
#54	.13670	.51361	.10229	.12433	.00474	.33535				
#55	.17968	.63168	.16552	.17039	-.13244	.50331				
#56	.17551	.56713	.07576	.05293	-.00117	.36099				
#57	.08216	.68929	.12579	.07825	.15731	.52556				
#58	.33358	.62657	.C 515	.10104	.12138	.54606				
#59	.12763	.63910	.15056	.15619	.24095	.52948				
#3	.35912	.18650	.11505	.11019	-.06515	.37702				
#4	.34450	.26826	.09958	.13966	-.01961	.21956				
#6	.30402	.28802	.59035	.03c96	-.02808	.52605				
#7	.18967	.22864	.28291	.13299	.16464	.21306				
#8	.23508	.13570	.50400	.17116	.09834	.36853				
#9	.28613	.29697	.43094	.22911	-.0744	.35555				
#10	.29484	.12285	.41378	.28697	.23913	.41277				
#11	.10523	.53777	.07122	.03985	-.06445	.13598				
#12	.26678	.27393	.16365	.08754	.12810	.19731				
#13	.42918	.38690	.46253	.02219	-.01298	.54648				
#16	.00126	-.03541	-.29867	-.11369	.25020	.15518				
#18	.20820	.12132	.56727	.12547	.01563	.39535				
#22	.48547	.25176	.12407	.18321	.12432	.36370				
#25	.13661	.00898	-.05251	.06654	.50360	.34357				
#26	.44617	.18510	-.01088	.22934	.18755	.31943				
#31	.44492	.11445	-.05999	-.02366	.21319	.26031				
#14	.72761	.07472	.28161	.05070	.08319	.62355				
#17	.70389	.1c[illegible]	.26498	.07814	.13837	.61507				
#19	.50343	.05915	.27965	.01911	.34027	.45114				
#21	.06372	-.01759	.02178	-.20855	.45054	.25133				
#28	.61971	.12310	.27287	.14236	.18523	.52923				
#29	.68975	.10928	.27732	.11891	.28156	.62240				
#15	.49010	.31247	.30660	.11372	.03380	.60854				
#20	.50143	.15254	.16392	.02325	.03608	.30342				
#23	.37474	.24706	.29534	.06104	.37429	.43252				
#24	.69849	.32036	.11969	-.02592	.17386	.60739				
#27	.61138	.23080	.21306	.09819	.40908	.66221				
#30	.67986	.22046	.17751	.21334	.06919	.56047				

APP. 5.2.

Level 2. Criterion and trait variables

ROTATED FACTOR MATRIX:

	FACTOR 1	FACTOR 2	FACTOR 3	COMMUNALITY
X185	.05642	.27865	-.48209	.31315
X186	.00121	.61750	-.22757	.43314
X187	-.07050	.93724	-.07655	.88426
X188	-.01516	.72986	-.11902	.51829
X191	.03935	.38550	-.34985	.27131
X32	.04402	-.09277	.41261	.18279
X33	-.16356	.14511	-.05717	.04640
X34	.04163	-.20014	.39262	.19592
X35	.07422	-.33204	.46039	.32771
X36	.10142	-.45233	.41169	.38637
X37	.10303	-.19400	.28362	.11796
X38	.03574	-.15330	.38719	.17689
X39	.05890	-.17578	-.43386	.33291
X40	.01644	.03492	.16499	.02585
X41	-.04202	-.06778	.34641	.12636
X43	.72752	.05091	.02205	.53237
X45	.53848	-.11890	.04167	.30581
X47	.57391	-.10235	.02126	.34030
X48	.55153	.16044	-.10182	.33975
X50	.27889	-.02267	.26737	.14978
X53	.66540	-.08810	.03584	.45234
X42	.39734	.03110	.14261	.17918
X44	.70094	-.00795	.03698	.49275
X46	.23116	-.02236	.10820	.06566
X49	.22346	-.36577	.02860	.05265
X51	.20253	.02790	.36524	.17523
X52	.38195	-.30328	-.02121	.14633

FACTOR	EIGENVALUE	PCT OF VAR	CUM PCT
1	3.90496	14.5	14.5
2	2.76713	10.2	24.7
3	.90125	3.3	28.0

APP. 5.2.

Level 3. Criterion variables and TL related attitudes

ROTATED FACTOR MATRIX:

	FACTOR 1	FACTOR 2	FACTOR 3	COMMUNALITY
#185	.38572	.32351	.09348	.26170
#186	.10868	.67379	.05107	.46841
#187	.07126	.88708	-.02599	.79267
#188	.22574	.62279	.00125	.45139
#191	.39569	.39931	.24844	.37750
#80	.62004	.37250	.29111	.60755
#81	.57988	.12697	.18302	.40836
#82	.49893	-.01105	.12570	.26285
#83	.53735	-.04173	.27632	.36884
#84	-.23610	-.00193	-.13962	.07524
#85	.49998	.09916	.22026	.30328
#86	.17807	.14435	.63545	.48144
#87	.29391	.26014	.69561	.63793
#88	.19975	-.11141	.67207	.50399
#89	.07725	.18731	-.23224	.09699
#70	.25137	.09651	.51794	.34038
#71	.03038	.01109	.13463	.01917
#73	.61100	.33234	.14443	.51925
#74	.71887	.20055	.10695	.56841
#75	.67524	.29520	.02972	.54391
#78	.47998	.03015	.09441	.24059
#80	.60145	.13219	.23751	.43562
#82	.87370	.34267	.10928	.53321
#72	.50612	.41419	.40665	.59123
#76	.24056	.13599	.64519	.27348
#77	.07525	-.04171	.31138	.10436
#79	.27879	.14629	.32266	.20309
#81	.53321	.20422	.29140	.41104
#83	.47650	.33195	.22201	.38653
#84	.34831	.24122	.18423	.21345

FACTOR	EIGENVALUE	PCT OF VAR	CUM PCT
1	8.50125	28.3	28.3
2	1.89[illegible]	6.3	34.6
3	1.13691	3.8	38.4

APP. 5.2.

Level 4. Criterion variables and situation related attitudes

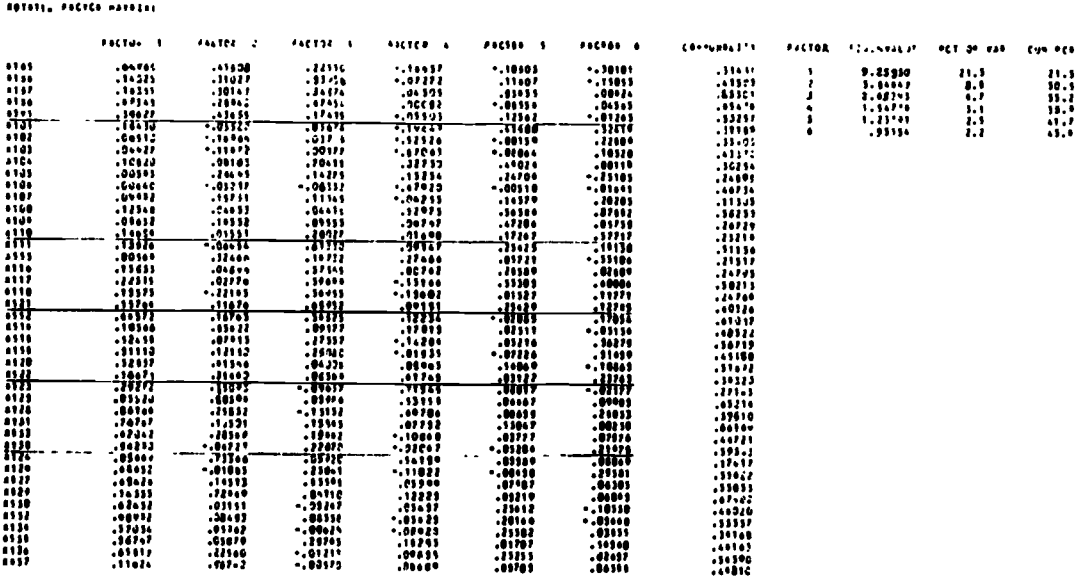
ROTATED FACTOR MATRIX:

	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	COMMUNALITY
X185	.09558	.22790	.16351	.46458	.30374
X186	-.01757	.16645	.60726	.32091	.49477
X187	.12087	.09571	.95980	.19098	.99403
X188	.28233	.05254	.62592	.28273	.54494
X191	.16697	.05213	.21036	.52956	.35410
X87	.50715	.60765	.15710	.05814	.63144
X88	.44356	.68143	.09150	.13586	.65864
X90	.51987	.58217	.13347	.08621	.60423
X93	.42044	.67632	.08919	.11587	.65551
X96	.23360	.78432	.06909	.17975	.71569
X98	.23592	.73344	.12433	.21585	.65554
X86	.51528	.35421	.03201	.06750	.44441
X89	.47585	.22016	.01942	.15152	.29530
X95	.66793	.31190	.09220	.28555	.59615
X97	.50760	.34692	.06857	.12329	.40294
X99	.28665	.09839	.24107	.59829	.50790
X85	.57488	.21430	.11075	.27013	.46845
X91	.62365	.28575	.14058	.21838	[illegible]
X92	.74331	.20759	.09240	.29152	.65913
X94	.47510	.12059	.20157	.50041	[illegible]
X100	.35440	.34805	.19525	.39371	.63537

FACTOR	EIGENVALUE	PCT OF VAR	CUM PCT
1	3.25925	15.6	15.6
2	6.43003	30.6	46.2
3	1.01527	4.9	51.1
4	.63548	3.0	54.1

APP. 5.2.

Level 5.1. Criterion and FL SC variables



APP. 5.2.

Level 5.2. Criterion and inhibition variables

ROTATED FACTOR MATRIX:

	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5	FACTOR 6	FACTOR 7	COMMUNALITY
V105	-.27264	.13584	-.33101	-.07215	.13518	-.25564	-.20563	.35380
V106	-.26051	-.15660	-.00677	-.00707	.14174	-.05080	-.10082	.370-C
V107	-.16709	-.01243	-.13070	-.25082	-.08717	-.05001	-.06123	.03023
V108	-.20536	.11500	-.25165	-.12041	-.63665	-.01201	.01078	.00050
V101	-.35617	-.03507	-.37152	-.08312	-.10063	-.33071	-.20020	.36050
V130	.05760	.62323	.09507	.25439	.11660	.08322	-.18052	.23737
V142	.04857	.11257	.06150	.61171	.11160	-.00377	-.04303	.20175
V145	.26567	.22152	.20810	.61060	-.02002	.04970	-.10800	.36107
V148	.15726	.46517	.07005	.16063	.05020	.12057	-.11005	.25016
V150	.11750	.47737	.02157	.17071	.00016	.17102	-.17170	.36103
V151	.01570	.23500	-.05602	.18039	-.00550	-.10105	-.35240	.23633
V140	.00222	.67763	.06724	.06763	.15781	-.04570	.08220	.59003
V141	.15730	-.00000	.31111	.38722	.05208	.07760	.00071	.10701
V143	.0003-	.12201	.02010	.55620	.20069	.10222	-.07003	.30770
V146	.07631	.23316	.25010	.05000	.03679	.03676	.10020	.56663
V144	.13071	.03670	.25637	.58C50	.02115	.00710	.07021	.60325
V147	.12803	.53761	-.06226	.15016	-.03156	-.01250	.20790	.50136
V149	.11651	.40166	.00000	-.01156	.00559	.06755	.26020	.37076
V152	.20131	.47055	.22520	.53950	.07085	.17005	-.06033	.65673
V153	-.02110	.57219	.12905	.05015	.35775	-.15727	.17005	.51767
V154	.32000	.20514	.52300	.12163	.10009	.05224	-.01202	.50000
V155	.63770	.11770	.20251	.20608	.21706	.15009	.11903	.60703
V156	.07015	-.30750	.17050	.10707	.02630	.10712	.00605	.55716
V157	.67701	.12026	.05251	.20166	.27000	.12902	.06005	.62070
V158	.25570	.15062	.60107	.20019	.19228	.00693	.00350	.38016
V159	.55162	.15068	.18000	.17312	.20508	.03502	.05598	.60056
V160	.27610	.20202	.10118	.16500	.57077	.00067	.02225	.55000
V161	.23069	.31619	.06955	.05020	.50062	.10221	-.00702	.51007
V162	.16032	.08300	.50205	.12005	.11500	.15270	-.15518	.69230
V163	.60330	.00200	.50550	.15007	.20959	.25050	.12000	.63061
V164	.62057	.05706	.62553	.07007	.01562	.00600	.10592	.50677
V165	.25603	.13031	.75017	.15550	.32012	.00015	.10506	.65515
V166	.20633	.02560	.70612	.16959	.01236	.09637	.01326	.66365
V167	.59070	-.30210	.60070	.16001	.02017	.11550	.09959	.67005
V168	.60000	.10038	.08003	.17277	.10260	.06652	.07065	.26026
V169	.20175	.04002	.33212	.22605	.30709	.05610	-.05705	.38217
V170	.13530	.24751	.23775	.20020	.33052	-.07006	.00705	.67092
V171	.16701	.37576	.17637	.11026	.36597	-.00720	.00000	.33100
V172	.26200	.11035	.63090	.22776	.33120	.03005	-.00065	.66305
V173	.26076	.15527	.00000	-.12336	.15250	-.12263	.32552	.56026
V174	.37620	.20622	.03020	.03382	.51000	.06219	.29775	.62018
V175	.20703	.18176	.10551	.09707	.16501	.16006	.02070	.10529
V176	.60071	-.30112	.27000	.00992	.21055	.10050	.32057	.65112
V177	.32100	.15635	.10007	.22201	.31632	.25005	-.10559	.50596
V178	.05066	.12002	.25062	.11550	.06955	.10007	.00059	.50592
V179	.01210	.06759	-.02635	-.03076	-.06009	.05759	.23007	.00565
V180	.65210	.31780	.06525	.03250	.10061	-.06155	-.01000	.56507
V181	.62025	.06675	.10052	.20751	.32027	.01760	.20050	.61630
V182	.50157	.30150	.05502	.05361	.23106	.03720	-.01525	.27011
V183	.12673	.05075	-.01075	.11090	.06705	.00110	.60506	.20200
V184	.11565	.00005	.10617	.09576	.05002	.10500	.01201	.17630

FACTOR	EIGENVALUE	PCT OF VAR	CUM PCT
1	11.01503	22.0	22.0
2	2.65007	5.0	28.6
3	1.70079	3.3	31.9
4	1.35103	2.7	34.5
5	1.13106	2.3	36.8
6	.85581	1.7	38.5
7	.83031	1.6	40.1

APPENDIX 6. Regional and city/country differences (t-tests)

	City vs. country			Central Finland vs. North Karelia		
	T	P		T	P	
x301	1.86	.064		-1.15	.252	
x302	3.52	.000	***	-2.24	.026	*
x303	2.87	.004	**	.67	.503	
x304	4.14	.000	***	- .34	.736	
x305	3.65	.000	***	- .95	.343	
x306	-3.08	.002	**	1.20	.231	
x307	-1.65	.100		- .28	.777	
x308	-3.27	.001	***	.67	.505	
x309	3.10	.002	**	.13	.899	
x310	1.85	.065		- .75	.451	
x311	4.46	.000	***	-1.68	.094	
x312	3.28	.001	***	-1.44	.151	
x313	3.12	.002	**	.29	.772	
x314	3.76	.000	***	- .41	.685	
x315	4.53	.000	***	-1.25	.213	
x316	.87	.383		- .20	.839	
x317	-2.32	.021	*	-1.97	.050	*
x318	2.22	.027	*	-2.55	.011	*
x319	3.02	.003	**	-1.23	.220	
x320	2.76	.006	**	-1.68	.094	
x321	-1.43	.153		- .34	.735	
x322	-1.01	.312		-1.45	.147	
x323	-3.18	.002	**	.52	.604	
x324	-2.90	.004	**	-1.50	.135	
x325	-1.85	.065		.89	.375	

* 'nearly significant' (p<= .05)
** 'significant' (p<= .01)
*** 'highly significant' (p<= .001)

APPENDIX 7. Cluster analyses of filter and non-filter types of learner

Cluster analysis of FL SC types

Final Cluster Centers.

Cluster	[illegible]	[illegible]	[illegible]	x119	x120	x122	x123	x125
1	[illegible]	4.1451	[illegible]	[illegible]	2.9176	2.5413	2.2982	4.1376
2	[illegible]	[illegible]	[illegible]	[illegible]	2.1613	2.0000	1.7097	2.2097
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.1786	3.1587	4.4087

Cluster	[illegible]	x131	[illegible]	[illegible]	x124	[illegible]	x127	x129
1	2.3573	[illegible]	[illegible]	2.2156	3.9908	2.5572	2.1516	4.0642
	1.6774	[illegible]	3.0644	2.7419	1.7531	2.4539	2.0645	2.1613
3	[illegible]	[illegible]	[illegible]	[illegible]	4.2619	3.4008	3.5000	4.5000

Cluster	[illegible]	[illegible]	[illegible]	x135	[illegible]	x137
1	[illegible]	[illegible]	[illegible]	2.2515	2.1972	4.4679
2	[illegible]	[illegible]	[illegible]	2.2097	2.0645	3.0000
3	[illegible]	[illegible]	[illegible]	3.3452	3.7024	4.6984

Number of Cases in each Cluster.

Cluster	Unweighted cases	Weighted cases
	[illegible]	[illegible]
2	[illegible]	[illegible]
	[illegible]	[illegible]
Missing	[illegible]	
Total	[illegible]	[illegible]

APP. 7.

Cluster analysis of inhibition types

Final Cluster Centers.

Cluster	x154	x155	x156	x157	x158	x159	x160	x161
1	2.9636	2.7857	3.5455	3.6623	3.6429	3.4156	3.1688	3.3896
2	2.3267	1.8400	2.2267	3.0533	2.4800	1.9267	2.1600	2.9200
3	1.6515	1.5758	2.0076	2.3939	2.0606	2.0227	2.3030	2.5227
4	1.7083	1.5119	2.5536	2.2024	2.3571	1.5476	1.6012	1.7798

Cluster	x162	x163	x164	x165	x166	x167	x168	x169
1	2.9805	2.7338	3.5961	2.8636	2.6299	3.3896	3.2468	3.5455
2	2.2533	1.6267	2.0267	2.0133	2.0000	1.9400	2.2133	2.2600
3	1.6742	1.3106	1.9333	1.5076	1.6242	1.8864	2.5985	2.0379
4	2.4286	1.4553	2.5417	1.4881	2.0179	2.5000	2.1607	2.5536

Cluster	x170	x171	x172	x173	x174	x175	x176	x177
1	3.1688	3.3961	2.9026	3.3442	3.2338	3.9026	2.6494	3.3117
2	1.9867	2.5867	2.3067	2.2000	1.7333	2.7867	1.6267	3.0800
3	2.6591	2.5076	1.6136	3.2121	2.5000	2.6136	1.4621	1.8712
4	1.7619	2.1310	1.7798	2.3452	1.7440	3.2560	1.5417	2.0536

Cluster	x178	x180	x181	x182	x183	x184
1	3.4026	3.4286	2.7597	3.3961	3.4091	3.0390
2	2.0667	2.7733	1.6533	3.2000	2.5333	2.7600
3	1.9091	2.6212	1.5606	2.5303	3.3333	2.3333
4	2.0714	2.2143	1.3810	1.9940	3.0476	2.2321

Number of Cases in each Cluster.

Cluster	unweighted cases	weighted cases
1	154.0	154.0
2	75.0	75.0
3	132.0	132.0
4	168.0	168.0
Missing	12	
Total	529.0	529.0

APP. 7.

Cluster analysis of 'overall filter' types

Final Cluster Centers.

Cluster	x301	x302	x303	x304	x305	x306	x307	x308
1	2.5760	2.6371	2.6933	2.6226	2.2204	3.0771	2.2742	2.8952
2	3.3257	3.4434	3.3551	3.5290	3.3692	2.8590	2.8109	2.9140
3	3.9362	4.2359	3.9498	4.4017	4.1100	2.4689	2.1729	2.4862

Cluster	x309	x310	x311	x312	x313	x314	x315	x316
1	2.55..	3.1935	1.9566	2.6022	2.0349	2.4097	1.9710	3.2832
2	3.5129	3.4355	3.1461	3.2455	3.2876	3.2763	3.1645	2.9767
3	4.0061	3.9342	3.9225	4.0048	3.7911	3.9759	3.9967	3.6518

Cluster	x317	x318	x319	x320	x321	x322	x323	x324
1	3.0403	2.3333	2.3469	2.6397	2.8952	2.9617	2.9677	2.9382
2	3.0215	2.4011	2.9011	2.9833	3.2769	3.1223	2.8303	2.7473
3	3.6335	3.0159	3.5477	3.8386	2.6563	2.3791	1.8874	1.9070

Cluster	x325
1	3.0683
2	2.9233
3	2.1475

Number of Cases in each Cluster.

Cluster	unweighted cases	weighted cases
1	62..	62.0
2	1..5.0	186.0
3	241.0	241.0
Missin.	32	
total	..3.0	..9.0

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