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Modelling plurilingual processing and language growth between intercomprehensive languages

Towards the analysis of plurilingual language processing

Mental multi- or plurilingual processing must be considered as a special case of language processing. It is generally characterised by the fact that an individual has two or more foreign languages at its disposal in addition to its mother tongue. In this constellation, three or four languages – and their learning related experiences – will automatically infer and interfere in a different manner. This description naturally reduces the notion of plurilingualism so far as plurilingualism cannot be restricted to three, four or even five languages. We are all by now familiar with polyglots who speak, write or have reading or listening comprehension in more than five idioms.

Numerous linguistic and didactical studies focalise on interference phenomena (*false friends*). In the past, inference and pre-knowledge, however, have rarely been discussed in relation to third or fourth language acquisition. (for example Thorndike 1923; Ausubel 1963; Carton 1966, 1971).

There are at least two reasons why psychological and psycholinguistic research have not paid much attention to plurilingual mental processing. The first is due to the uncertain status of a third or fourth language in a non native speaker's mental lexicon. Whereas we have some concrete ideas about what makes up prototypical native language competence — its procedural lexical knowledge, its articulation programs, its syntactic patterns, its culture related dimension etc. — it is difficult to describe competence in languages of which the

mental status of procedural and declarative knowledge remains quite unclear. So we can actually ask the question: What sense would it make to analyse the mental processing of individuals in languages they don't really possess? - In language acquisition theory the term 'foreign language' is often synonymous to an 'unaccomplished state of language proficiency', of which the most outstanding characteristics are dynamic, systematicity and overgeneralization, as we learn from the large survey about the learners' *interlanguage* offered by Vogel (1995). The second reason was the lack of externally scaled validation-tools for measuring language proficiency. This changed recently when the European Framework for Language Testing (Milanovic 2001) was created. Henceforward researchers can indeed measure the mental processing of individuals who have clearly defined levels of proficiency in several foreign languages at their disposal. Thus it would make sense to apply psychological and experimental methods to the analysis of foreign language acquisition, which up to now, were reserved for the analysis of the mother tongue.

There is no doubt that the invention of the term *interlanguage* (Selinker 1972) gave way to a better understanding of individual foreign language growth. Thus studies turned their attention to the proceedings of language acquisition. Researchers like Dechert, Möhle & Raupach count, as far as German research has been concerned, between the first to analyse the interactions of a third and a fourth foreign language in individuals: "We assume the existence of more subtle processes, concerning the affectation of minimal features, induced by the activation of languages or sublanguages other than the one overtly used in the given situation and promoted by the confrontation of those different representational systems." (Möhle & Raupach 1989: 179). Analysing speech production both authors could prove that German students with the main subject French regularly refer to this Romance language when producing Spanish, whereas students with the main subject English could not make use of such advantages which in 1975 induced French researchers to outline a special didactics for target languages belonging to the same family as the learners' mother tongue (Dabène 1975).

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Since then, the *didactique des langues proches* was taken up by various inter-comprehensive multi-language learning projects like *Eurom4*, *Galatea* or *EuroCom* (Dabène 1992; Blanche-Benveniste et al. 1997; Klein, Meissner & Zybatow 2001).

Internationally inference-phenomena are relatively well known all over the world. It is widely reported that African or Asian students of a second Western language regularly use the European idiom they already know – mostly English or French – when approaching a new European target language. For the same reason, international learning arrangements for German, French or Italian as Foreign Languages often refer to English as an intermediate idiom to facilitate the acquisition of these languages (Hufeisen 1993). In a comparable context, Alsatian teachers of English use the Germanic dialect as well as the standard French of their pupils (NCA 1999). In Austria, the hypothesis that it is easier to learn a language which is typologically nearer to the language of departure than one which is more distant was empirically proved by Sigott (1993). This author found out that German speaking pupils need more time to attain certain levels of proficiency in (Romance) French than in English. Empirical pedagogical studies confirm the hypothesis too: So the Max Planck Institute for Educational Research proved that German students of Spanish with some knowledge of French learn the Romance language significantly quicker than those who refer to Latin (Stern & Haag 2000).

Studies of the growth of competence in bilingual children also show the fundamental role of interlanguage processing and inter-lingual comparison. If both languages are not too distant, the procedure sometimes show similar activities which can be observed in the field of acquisition of a third or fourth language (for example Voorwinde 1981; Wenzel 2000).

Towards a pedagogical definition of multilingualism

Whereas psycholinguistic models of bilingualism generally distinguish between the compound and the co-ordinated type,

empirically proven and comparable models of multilingual acquisition do not yet exist. Nevertheless, sociolinguistic studies reflect the large variety of multilingual situations which can be found all over the world. As the main criteria of compound and coordinated bilingualism are to the fundamental questions at what age and in what language environment an individual acquired its both languages, we can apply the same criteria to individual plurilingualism which we distinguish from social multilingualism. Here we find some studies in which authors consider the plurilingual growth in children who are brought up in situations where more than two languages are in use. Whereas plurilingualism appears as the result of organised learning and of didactical guidance and monitoring, multilingualism is the product of incidental and uncontrolled exposure to the target language. However this distinction is quite artificial as in reality guided learning and exposure to the target language and culture alternate.

At the same time literature does not give evidence of what bilingualism really means. Whereas older studies require an equal and maximal native like level of proficiency in both languages — we speak of symmetric competences in L1 and L2 —, we now encounter a wide variety of definitions which are provided by different contexts, disciplines and interests. In the following synopsis, Ellis (1994: 208) takes up the distinction between additive and subtractive bilingualism. His model corresponds to second language contexts whereby a near native speaker language level in the language of the environment is demanded for social and professional reasons.

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	Attitudes towards	
	Native culture	Target culture
Additive bilingualism	+	+
Subtractive bilingualism	-	+
Semilingualism	-	-
Monolingualism	+	-

Rod Ellis finds the condition for developing symmetric bilingualism in the “willingness (of the learner) to be a valued member of the (second) language community.” In this interpretation, the degree of competence in both languages acquired appears as determined by the learner’s linguistic self concept, his social roles desired in both language-communities and its exposure to the target language as well as its loyalty to the language of departure.

But the question of successful bilingualism does not only depend on what the individual can do. The problem of social acceptance in relation to language behaviour is a matter of how a community defines its linguistic norms and puts them to practice. We know from classical immigrants’ and from multilingual societies that linguistic norms are treated quite differently from what is the habit in monolingual surroundings. In regard to the European context, we have to remember that the national norms of English, French, German or Spanish have been taken up by the peoples in their overwhelming majority only during the last two hundred years. Before general alphabetisation and urbanisation reached their current extent, most members of European national linguistic communities were speakers of ‘patois’, dialects or (often oppressed) regional languages. This quality alone, was one of the main obstacles to social success. That’s why the great majority of Europeans had to make considerable efforts to correspond to their national linguistic norm. This explains why these norms are nowadays so highly valued in European societies.

Whereas this situation was typical for the European monolingual societies of the past, conditions are changing. It is a matter of fact that national European states will no longer be able to achieve their traditional fundamental aims as far as national defence, ecological protection, prosperity, economic guidance, well-fare of their citizens are concerned. Social life will, in many ways and for many reasons, become more and more international and multilingual. This will not only change the role of the national states and of their societies, but also that of their national languages. When more people get acquainted with more highly valued languages in their everyday life, this will also increase their multi-language awareness and change their attitude towards linguistic norms as well as their multilingual practice. Finally the new situation will induce people to re-define their linguistic self-concepts which cannot exclusively be made up by the national mother tongue, but rather by several languages. This includes experiences with different degrees of proficiencies in different languages, with individual language growth and decrease as well as with changing social roles in languages, and with language learning in general.

What does this mean for the definitions of individual plurilingualism and social multilingualism? Whereas bilingualism had very often been negatively portrayed as long as bilinguals did not achieve the symmetric type, this criterion had hardly been applied to individual plurilingualism. In Europe, even states with several official languages, such as Spain (Castilian, Catalan, Basque, Gallego), do not expect their officials to have full competence in more than two languages, i.e. the national and one regional one. Obviously symmetric plurilingualism is rather seldom and in monolingual societies even plurilingualism of the non-symmetric type often becomes an object of admiration. That is why multilingualism has rarely received the recognition or profile of native lingual competence. Social experiences in multilingual non-European societies regularly show that plurilingualism differs from individual to individual. Very often, individuals practise (only) one or two languages together whereas although they have knowledge of other idioms.

All definitions of bi- and multilingualism have in common that their fundamental criteria are socially determined, often by evident 'communicative needs'. This leads to the question of the kind of definition we really require when we use the words (social) multilingualism and (individual) plurilingualism in our actual European context.

In our opinion, definitions of plurilingualism must correspond to the communicative needs. In our 21st century European societies with their challenge of multilingualism, these definitions should be pedagogical. This means that they have to imply individual growth of at least two foreign languages which correspond to the language politics of the European Union (1995). Such a pedagogical definition of plurilingualism was developed by an international experts' group in 1989:

... plurilingualism does not mean that an individual dominates various languages to the same extent. A person can be considered as plurilingual if they have limited knowledge in two further languages, in addition to their mother tongue, in several areas of discourse, so that they can build social contacts in these languages when writing or reading, speaking or listening. (Bertrand & Christ 1990)

As far as multi-language processing is concerned, this definition allows the application of models of language processing related to various levels of language competence in various idioms. This quotation can be related to the official level-definitions of the European Framework of Reference, or in portfolio-projects.

Processing studies and modelling plurilingual acquisition based upon intercomprehension

Every model of multilingual processing has to take into account the main differences in plurilingual acquisition and its social conditions. We distinguish between the following fundamental types:

1. acquisition in multilingual contexts with more or less

intensive exposure to the spoken and/or written target languages. We find this model in numerous social contexts outside Europe. Often the social status of the languages concerned differs significantly, including the cultural practices of the different languages. Thus only oral practices can be related to some languages whereas written communication is reserved to others. There are various forms of diglossia, and in the same contexts we find the development of the creoles.

2. acquisition in bilingual contexts with intensive exposure to the spoken and written registers of (only) two languages. Furthermore, foreign languages are learnt under school-guided conditions. Within Europe we can study this situation in bilingual regions like Catalonia, South Tyrol or the Aosta-Valley. On the other hand, numerous examples, from Switzerland or Belgium, prove that socially wide spread bilingualism does not develop automatically. In some regions, like Alsatia, bilingualism was hindered by a policy which favoured national monolingualism. – Generally, some bicultural families in monolingual environments succeed in bringing up their children using the languages of both parents; in this case the pedagogical result is linguistically similar. In all of these situations, multilingualism is based upon a socially practised bilingualism.
3. acquisition of several foreign languages in a monolingual context. The social exposure to the target languages is minimal and its input is restricted. Whereas in the types 1 and 2 the knowledge acquired in at least two languages is procedural and primarily developed on the basis of social contact and the spoken language, acquisition of foreign languages in a monolingual school context does not lead automatically to communicative skills or to face to face dialogical competence. During the 19th century and partially up to the 1970's, foreign language education was generally regarded as a part of formal

education . The focus then was not on developing listening-comprehension and speaking, but rather on formal grammar and on declarative knowledge. Even when the focus was communication, this meant, however, much more reading and writing and sometimes translating, instead of listening to and speaking with native speakers of the target language and culture. Nevertheless, since then the situation has changed profoundly because European languages are present in our every day life in their spoken (and written) form(s).

In addition to these three fundamental types of plurilingual acquisition, it is important to consider the age of the individual when the acquisition takes place. Learners' biographies, show furthermore, that various types of acquisition are combined reciprocally and/or consecutively. Often, a plurilingual biography which started with a type 3 acquisition situation is accomplished by type 1. It goes without saying that all factors which are subsumed under the types 1 to 3 are archetypal. In reality, we find infinitely more subtle ways of plurilingual acquisition. As far as we can see, in the field of research into the acquisition of individual plurilingualism, much work remains to be done. This concerns, in particular, the mental dimensions of constructing multilingualism depending on the acquisition types described.

The lack of empirical foundation explains why it does not seem appropriate to develop a general and detailed model of the acquisition of plurilingualism. At the moment, this could not be based on longitudinal studies referring to the different acquisition contexts.

Nevertheless some empirical research has been done in the domain of the acquisition of new third or fourth languages by polyglot adult learners. For these studies, plurilingual subjects (whose L1 was German) were confronted with written and spoken texts of a more or less intercomprehensive Romance language they have never formally learnt. We believe that the results of these studies can serve as a model of an adults' plurilingual processing as well as plurilingual acquisition. The

models are restricted in so far as they can not include all factors that influence multilingual acquisition. In our case, target languages were Italian, Portuguese or Spanish. The subjects who tried to decode one of these idioms were plurilingual in the sense of one of the types indicated above.

The model is based upon empirical research described by Meissner & Burk (2001). Data gathering and elicitation were concerned with the following activities effectuated by university students of all subject areas: 1. listening of original news texts in the unknown Romance language that up to that moment had not been learnt. Description of the content and examination of the rough or content comprehension, 2. note taking of content language characteristics (simultaneous protocolisation), 3. second taking of notes of content characteristics, 4. comment making, 5. re-playing of 'difficult' text areas and their protocolisation, 6. sentence for sentence playing of the text, with emphasis on the grammatical dimension with aloud thinking protocol, 7. re-interpretation of the own aloud thinking comments and further explanation of own reception-guidance.

The researcher's task did not only consist of the construction of the data-gathering design, but also of the interpretation of data as well as of the observation (protocoling) of subjects' behaviour during the target language processing. Whereas the indicated research concerned mental foreign language processing when listening, Meissner (1997) described the results of aloud-thinking protocols which stem from reading activities in intercomprehensive languages.

Some results of multilingual processing research in the area of Romance languages

Firstly, all our data confirmed the results of the quoted investigations made by Möhle & Raupach: All students who had operable procedural knowledge in one Romance language at their disposal, referred to it when trying to decode the 'unknown' target idiom and its lexical or morpho-syntactic dimensions. On the other hand, students who only had some

knowledge of English and Latin referred to German or English when listening; they only weakly activated Latin when reading.

Secondly, we could prove that subjects with operable and solid knowledge in one Romance language achieved significantly better results when decoding the target language than those who could only refer to German, English or sometimes Latin. Whereas English turned out to be relatively helpful in the lexical field, it did not enable the identification of the fundamental morphemic and syntactical structures of the Romance target language. This was crucial for listening comprehension. The question 'which languages are activated for the comprehension of a Romance target language' revealed that the typologically (and often geographically) nearest languages to the target tongue serve regularly at their best for inter-lingual transference. We can therefore say that one Iberian language is most often activated to understand another Iberian tongue. In the same sense, we found out that the Southern Romance languages offer more evident bases for inter-lingual transferring than it is the case between French and Spanish or French and Italian. At the same time, subjects who (apart from their German mother tongue) had only procedural knowledge in English and Spanish showed great difficulty understanding spoken or even written French. The assumed reason is that pan-romanic forms are less present in the most frequently used French lexicon than the so called 'profile forms'. In the terminology of Klein & Stegmann (2001), a profile form can be found in only one romanic language and therefore cannot be transferred to other idioms (type: f. *beaucoup*, sp. *alfombra* 'carpet'...). According to lexicological studies of spoken French, Klein underlines that especially frequent words of substandard spoken French are not comprehensible in other romance languages (type: *bagnole*, *bouffe*, *toubib*...). Thirdly, phonetic features of French make listening comprehension difficult. This concerns particularly its *liaison* phenomena.

Bases of transfer and plurilingual processing

Generally, intercomprehension is the result of successful inter-

lingual transferring. This concerns all parts of language architecture as well as some meta-linguistic and didactical monitoring. In the field of lexicon, bases of transfer are delivered by inter-lexemes as well as inter-morphemes (Meissner 1993), in regards to syntax, Klein & Stegmann (2001) speak of pan-romanic sentential patterns, and in the area of culture, the Romance languages have a lot of phenomena in common – such as the Mediterranean influence, the catholicism or the strong influence of Latin heritage.

When analysing lexical understanding and access in language reception, as well as production within the empirical frame as described above, we recognise that word processing refers to all parts of lexical composition.

Following some schemes which had been developed by L1-related psycho-linguistics, inter-lexicological representation models of word forms and word contents, were proposed by Meissner (1996; 1998). In 1993, this author took up the inter-lexicological terminology which roughly distinguishes between formal congruency (i. *CD-Rom*, s. *CD-Rom...*; e. *humour*, f. *humour/humeur*, i. *umore*) and semantic adequacy (i. *cucchiere*, e. *spoon*, g. *Löffel...*). Regarding inter-lingual processing, we can summarise that (form congruent and semantic adequate) cognates or interlexemes literally activate identical or analogue mental markers in all languages concerned. This explains why foreign language speakers and interpreters very frequently use inter-synonymy (Zimmermann 1990). The advantages of such processing can be visualised by form-congruent and semantically adequate inter-lexemes. Thus, the Spanish noun *demolición* differs from the Catalan *demolició* only in one grapheme and phoneme whereas significantly more than five formal graphematical and phonematical markers (or more) are identical in both languages. Semantically both types of the inter-lexeme are completely adequate or inter-synonymous. Finally, we can say that, on the idiom level too, the Spanish and the Catalan types of the inter-lingual set e. *demolition*, f. *démolition*, i. *dimolizione*, g. *demoliert/Demolieren...* show widely identical co-occurrences and other morpho-syntactic characteristics. They

have the same gender (feminine), belong to the same grammatical class (noun) and can perform the same syntactical functions. As far as we can see, inter-lingually identical markers go far beyond the word-unit. Inter-lingual markers or conjuncts trigger all kinds of mental activations in language structures. This explains the enormous rapidity of language processing which can, not only be observed when people listen to a perfectly comprehensive idiom, such as their mother tongue, but also when they listen to intercomprehensive languages.

The idiom principle (co-occurrences) which works in language structures along side the frequency phenomena and culturally fixed themes, explains why one word and one association triggers the activation of another one. The idiom principle does not only work within the mental processing of one language, but also between languages, especially when they belong to the same linguistic family. This underlines the important role of idiomatic pre-knowledge for several kinds of retrieval procedures.

We may not forget that the same lexical markers (which trigger our bases of inter-lingual transfer) activate undesired interference phenomena. These are not audibly or visibly present as long as subjects do not produce language. But several tragic accidents occurred and were observed as stemming from inter-lingual misunderstanding and false friends. Language learning methods will have to develop special prophylactic programmes to increase awareness of false friends. This means that plurilingual didactics works in two directions. On the one hand, it tries to increase competence in new target languages, and on the other it should stabilise and expand procedural knowledge in already acquired foreign languages. That's why intercomprehensive language learning works bi- or even pluri-directionally in the pro- and the retroactive way.

Model of intercomprehensive language processing

During the last decades, psycho- and neuro-linguistics

progressed considerably in explaining native language processing. On a scientific and empirical foundation, this allows the modelling of its neuronal bases as well as of psychic representation of lexical forms and lexical contents including the mental processing of syntactic structures. Multilingual studies can now adapt these models to plurilingual processing.

To give an example, we draw attention to the analysis of syntactic patterns in listening comprehension which underlines the importance of sentential frames (Hahne 1998). Its identification allows the anticipation and construction of an assumed word order, i.e. the order of arguments and ideas. The quicker a sentential frame can be constructed, the more comprehensive oral language processing is. In a multilingual perspective, Meissner & Burke (2001) confirmed the importance of sentential-structures recognition, when their empirical investigations left no room for doubt that subjects who are familiar with pan-romanic sentential patterns succeed much better in understanding an unknown romance language than subjects without this procedural knowledge.

All subjects who had contact with an intercomprehensive 'unknown' foreign idiom for the first time always showed more or less the same processing scheme when decoding the target language. This activity takes place automatically at the very moment when an individual succeeds in understanding contents and lingual structures. As Lutjeharms (2001) points out, the moment of phonologisation is when language acquisition or language stabilisation takes place.

We can differ between three steps.

The first step: the construction of the target-lingual hypothetical or spontaneous grammar

The creation of the hypothetical grammar can be subdivided as follows:

1. identification of the target pattern on the basis of an inferred scheme known from a mentally disposable

language (language of transfer). This leads to the phonologisation (recognition/construction of the formal side of the word) as well as to its grammatical categorisation (word class, co-occurrences, syntactic function...).

2. semantic plausibility control concerning the contents decoded from the target language. This produces the identification of the semantic shape of the word.
3. formal plausibility control and identification of the syntactic structure of the target language (morphemes, mode...).
4. formal plausibility control concerning the structure decoded from the target language in regard to the activated language of transfer.

The spontaneous grammar is created at the very moment of (sufficient) comprehensive encounter with the target language and its lexical, morphological and syntactical transfer-bases. Its construction leads the individual to recognise **intra-lingual target language regularities** according to the well known language acquisition research-patterns of systematicity and (over-)generalisation. As these regularities are not only compared to the bases of transfer activated in the language(s) of departure, the learner discovers a kind of **intersystem** located in the confirmed or rejected and modified (hypothetical) correspondances between the languages activated in order to understand the target language. The quality of mental processing of the intersystem seems to be decisive for the phonologisation in the target language. By phonologisation we understand the formal, semantic and functional identification of the linguistic structure of the verbal message. Phonologisation leads to comprehensible input and to the integration of a given structure into the mental lexicon (Ellis 1994: 349). It concerns declarative knowledge as well as procedural skills.

Processing between languages often goes far beyond the concrete operations initiated by a given text or linguistic surface.

Obviously the declarative knowledge activated in the domain of the transfer-language invites the subject to put forward new hypotheses about all areas of the target language and its architecture. As this concerns the target language as well as the language of departure and often other pre-learnt languages, multi-language processing leads to **multi-language awareness**.

The creation of spontaneous grammar is not primarily a result of explicit instructions, but rather of the procedural ability to understand the unfamiliar target language. Spontaneous grammar is (as the name indicates) ephemeral; in other words, subject to continuous change. It is a product of permanent construction and deconstruction, and vice-versa.

Target language regularities are fixed through an ad-hoc analysis of target language systematicity. In addition to this, the 'bridge language' provides the comparison subjects (e.g. "it is however different in French, namely...").

This shows the construction of a permanent **interim-knowledge** which is modelled in the second step.

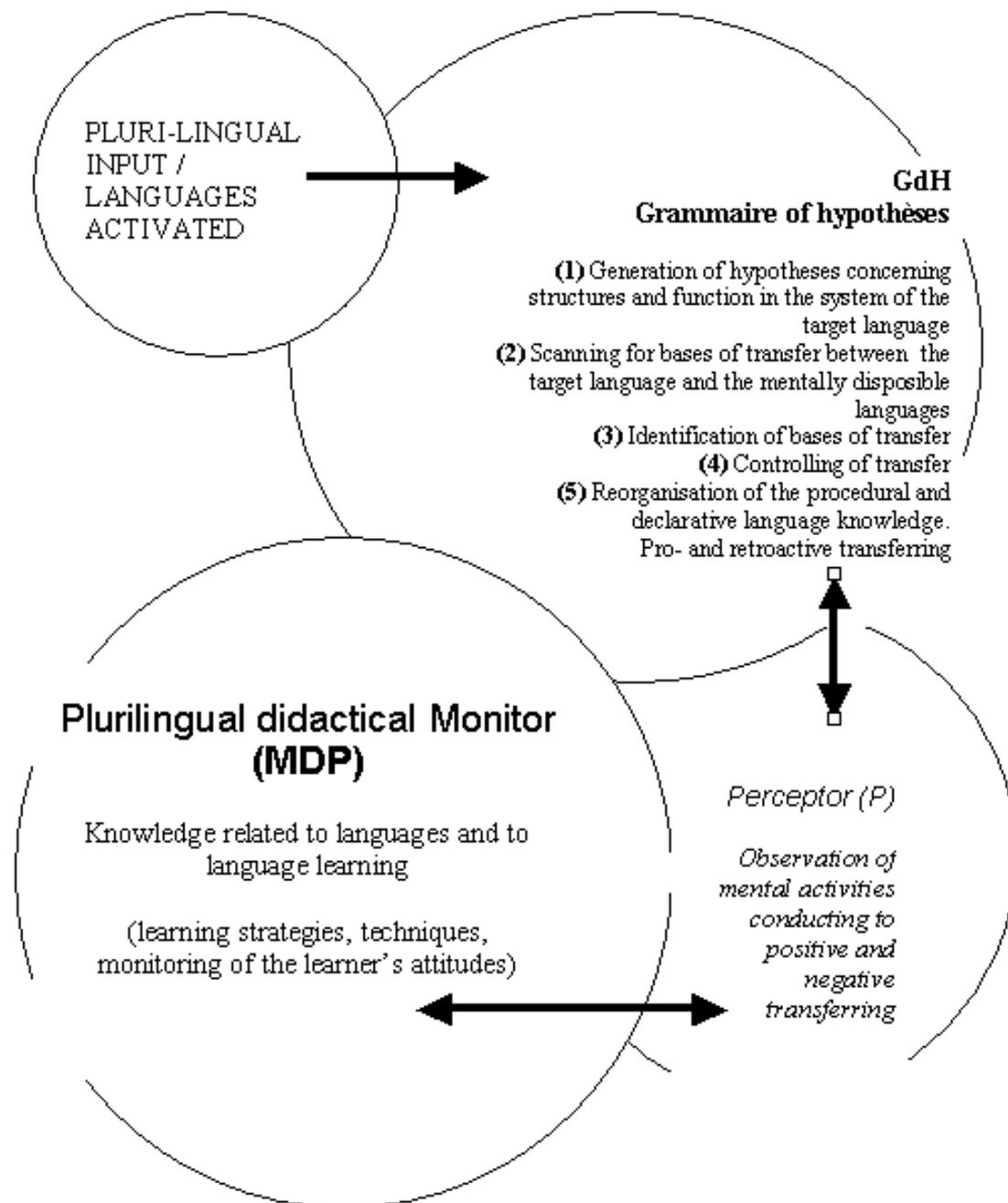
The second step: the plurilingual correspondence grammar

Evidently, the construction of a **plurilingual correspondence grammar** or plurilingual inter-system is generated by comparing functional, correspondingly appearing features and subsystems between languages with inter-lingual correspondence rules or a plurilingual inter-grammars. Since the inter-lingual correspondence grammar is fed by the hypothetical grammar, it is very dynamic too. However, in contrast to spontaneous-grammar, the contents of the plurilingual correspondence grammar attain a high degree of mental stability. For inter-lingually correspondent rules or regularities are stored when a plausibility validation has taken place. The plurilingual correspondence grammar contains positive transference experiences as well as negative transference knowledge, productive rules as well as rules of prohibition.

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The third step: the didactical monitor

All linguistic processing is accompanied by **learner experiences**. This explains the construction of a **didactical strategic memory**. This is where the learner files away his or her experiences with language acquisition and language learning related knowledge. They centrally refer to the meta cognitive level of **learn guidance** (e.g. in the sense of Baumerts 1993) and the **transfer-types** described by Selinker and modified by Meissner & Senger (2001). There is no doubt that this didactical memory can hardly be separated from verbal data. As different languages offer different linguistic schemes and therefore different learning experiences, we can say that plurilingualism is at the same time the objective and the method. A good language learning competence can hardly be achieved on the basis of only one foreign language experience.



Typology of transfer in didactics of intercomprehension

Obviously, competence increase in a third or fourth foreign language highly depends on pluri-lingual 'and' didactical pre-knowledge. That's why language-growth can be modelled as a quantification of the potential of transfer. This model of transfer is largely different from that developed by Selinker (1972) which distinguishes between language transfer, transfer of training, strategies of language learning, strategies of second language communication, overgeneralization of the target language material.

From the point of view of the plurilingual didactics, the following five transfer areas are furthermore relevant for the creation of a criteria matrix:

- **(nLintraT) Native language intra-lingual transfer:** In his/her native language, the learner discovers numerous transfer bases that can serve for interlingual transference. The nLintraT creates an awareness for language bridges, which the mother tongue can provide for foreign language growth. This transfer area should especially be activated in the first years of language tuition.
- **(BLintraT) Bridge language intra-lingual transfer:** A polyglot individual does not only construct trans-lingual operations on the basis of the mother tongue. Operative knowledge in further languages often delivers better and more useful transfer bases. Even within the bridge or transfer-language (intra lingual) awareness creating procedures should be activated which prepare the trans-lingual transfer.
- **(TLintraT) – Target language intra-lingual transfer:** Because of its systematicity the target language itself offers numerous transfer-bases which can be used for the construction of target language competence.

- **(InterT) – Interlingual transfer:** This type of transfer aims towards the positive and negative correlation of different languages (*bricolage* > *bricolaje*; *voyage* > *viaggio* > *viaje*; *occasion*, *occasione*, *Okkasion*; this also refers to adequacy of meaning: *progrès*, *voortgang*, *Fortschritt* or *rabbit* and *Kaninchen/rabbit* (Playmate) or the analogue perfect form: *j'ai donné*, *ho dato*, *he dado*, *I have given*, *ich habe gegeben* [auxiliary verb + perfect participle) in other words *il a divorcé*, *ha divorziato* # *er ist geschieden*; *la chatte est morte* # *la gata ha muerto*...
- **(DidT) – Didactical transfer or transfer of learner' experiences:** Although this deals with the transfer of learners' experiences in general, it is definitely not independent of languages. It should instead be assumed that every language develops a learning object of its own. Firstly it must be said that the individual typological characteristic features of the target language demand their own individual methodological access. Besides this but of equal importance appears the previous experience of the learner, in other words: their world knowledge, their multilingual as well as their didactical knowledge which guides their language acquisition process. There is no doubt that individuals categorise the same input in a different way. Input is not identical with intake and intake never stops . There is much evidence to prove that didactical transfer on the basis of experience with only one foreign language cannot be adequately elaborated on.

The following models can illustrate the role of transferring for the growth of plurilingual growth. They can contribute to a better understanding of the dependency of pluri-lingual processing and language growth which can be of some importance for didactical guidance in the field of language learning and teaching.

Language Growth Depicted Mathematically

The inter-lingual processes, which can already be seen here, are comprehensible in the mathematical formula:

$$\sum_{i=1}^n = x_i [L_{(1...n)}] < L_1 + L_2 + L_3 \dots L_n$$

Σ represents the processing, L1 the mother-tongue, L... the subsequently learned languages. The coefficient x indicates the 'intensity factor of mental activation'. $L_{(1...n)}$ expresses the input variables (from a L1 or Lx to Lx_n). Thus L₃ means the lingual and didactical potential of transfer related to the L₃.

The transfer potential of L_n depends upon the activation factor, that is minimally x=0 (without activation), and maximally x=1 (greatest activation).

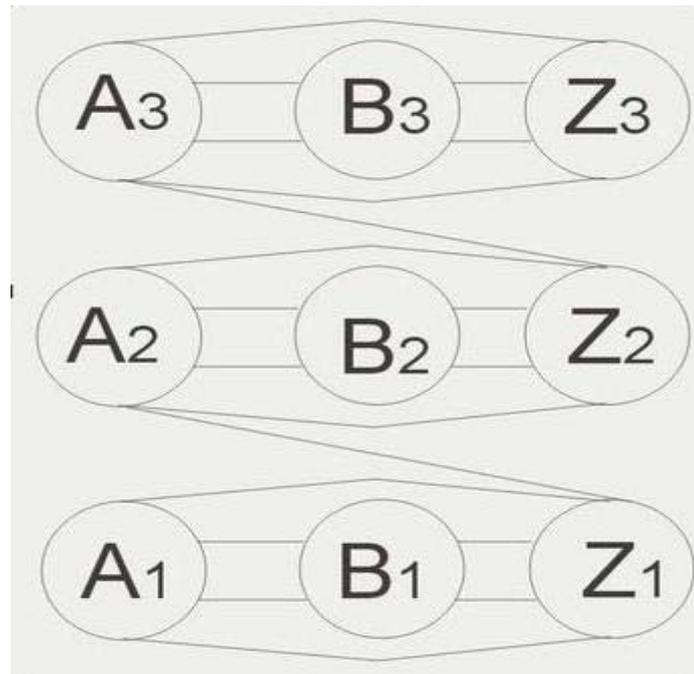
Therefore we write: $0 = x_i = 1$

The above described learner experiences 'E' are included in L1 (to be brief). One can also write:

$$\sum_{i=1}^n x_i L_i < \sum_{i=1}^n L_i$$

The formula becomes all the more powerful the more intensified and targeted the efforts of a learner are towards his or her learning task.

Language growth and growth of language learning competence modelled



This figure shows very shortly the increase of individual languages' and language learning related knowledge from the beginning of the acquisition of the first foreign language to that of a third or fourth foreign language. (A₁) reflects the linguistic knowledge of the monolingual child possessing nothing more than its mother tongue. When it gets in contact with its first foreign language, it develops a knowledge (B₁) as described in relationship to the didactical monitor and to the interlingual system. It is evident that foreign language learning provokes language and learning awareness raising effects. (Z₁) designs the individual mental lexicon which is enriched by the first foreign language knowledge. The experience visualised at level 2 must be interpreted as the result of the encounter of the second target language (Z₂)... For the growth of language learning competence

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(B1 to Bn) seem to be decisive. It seems that traditional didactical guidance has not sufficiently been sensible to this matter.

Conclusion

It can be said that both types of grammar, explicitly or latently, accompany the learning of a foreign language in all stages of the acquisition process. Nevertheless, monolingual operating procedures only focalise the construction of systematicity in the target language. They risk not taking into account the mental activities of the learners themselves, who can only refer to their disposable knowledge and skills. Monolingual procedures reduce, in this way, the depth and width of the mental processing of the target language at the point of first contact with lingual data. Since conventional methods overlook the existence of the intersystem, they do not therefore, pursue an inter-lingual error prophylaxis, and there is much evidence to show that they even hinder this.

The permanent interaction of the hypothetical grammar, the plurilingual correspondence grammar and the didactical monitor, explains why Naiman & al. noticed, coincidentally, language growth:

Each language learned makes the next one easier, because you are more detached from your native language, you have more knowledge about structure, about meta-language. (Naiman & al. 1996: 25).

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