3 Metacognition in Multilingual Learning

A DMM Perspective

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Introduction

During recent years, research interest in the contact between more than two languages and the phenomenon of multilingualism has increasingly been expressed. Attitudes towards multilingualism among individuals and society at large have changed from being negative to seemingly embracing a higher level of awareness of the complexity and dynamics of the phenomenon. In this chapter, metacognition in multilingual learning and use is the focus. Following Haukås (2018, this volume), metacognition in this context refers to an “an awareness of and reflections about one’s knowledge, experiences, emotions, and learning”. Concerning reflections about one’s knowledge, Gombert (1992), for instance, viewed metalinguistic activities as a subfield of metacognition. He defined metalinguistic activities as activities of reflection on language and its use as well as subjects’ ability to intentionally monitor and plan their own methods of linguistic processing, in comprehension and production (Gombert 1992, 13). To be aware of one’s learning means the ability to reflect upon, understand and control one’s learning. Thus, metacognitive knowledge is an important variable in the process of learning that underlies language learning strategies, “which are the techniques or procedures that facilitate a learning task” (Chamot 2001, 25).

Since holistic approaches to bi- and multilingualism present the adequate prerequisite to understanding that the contact between languages leads to transfer phenomena not only on the linguistic but also on the cognitive level, the discussion in this chapter will begin with the work of Grosjean (1985) and Cook (1991) before moving on to Herdina and Jessner’s (2002) Dynamic Model of Multilingualism (hereafter DMM). The crucial role that emergent properties of the multilingual system, such as metalinguistic competences, have been assigned in the DMM will be emphasised. Due to the interaction between all languages in the multilingual system, new qualities, such as an enhanced level of multilingual awareness, are developed which distinguish bi- and multilingual speakers from their monolingual counterparts. These are addressed as the Multilingualism-factor, or M-factor, and are discussed in more detail in studies on multilingual awareness in third

language acquisition (TLA), self-assessment and strategy building in multilingual learners. A stronger focus on metacognition in research on multilingual development and education will also be recommended.

Metacognitive and Metalinguistic Factors in the DMM

As already pointed out above, research on bi- and multilingualism has moved from reductionism to holism so that, these days, work on specific cognitive abilities in bi- and multilinguals has been frequently addressed. The DMM (Herdina and Jessner 2002) was the first published monograph to address the application of dynamic systems and/or complexity theory (DSCT) in language learning. The authors drew on work by Grosjean (1985), who was the first to view a bilingual person as a competent, but specific, speaker-hearer. This was followed by Cook (1991), who based his concept of multicompetence on Grosjean's concept of bilingualism. According to Cook (2002, 4–8), second-language users are characterised as follows:

1. the L2 user has other uses for language than does the monolingual;
2. the L2 user's knowledge of the second language is typically not identical to that of a native speaker;
3. the L2 user's knowledge of his or her language is in some respects not the same as that of a monolingual;
4. L2 users have different minds from those of monolinguals.

Hence, Cook's ideas about the integration continuum, which captures different relationships between two language systems in the same mind from separation to integration, fits with the DMM. In other words, "it sees the language system of the L2 user as a whole rather than as an interaction between separate language components" (Cook 2003, 11).

From a more educational perspective, Cummins (1991) introduced common underlying proficiency as a feature of the interdependence hypothesis by using the iceberg metaphor. He described linguistic knowledge in bilinguals as comprising more than simply the characteristics of both languages in contact. The development of a think tank or common underlying proficiency—in contrast to separate underlying proficiencies—enables the learner to transfer cognitive and/or academic skills from one language to the other. The development of these processes is interpreted as crosslinguistic interaction in the DMM, as the processes describe not only a kind of overlap between two systems but also a complete metamorphosis of the substances involved as, when mixed, they acquire properties that neither of the substances initially had. This was referred to as the "paradox of transfer" by Herdina and Jessner (1994). Cummins (1991) also established the idea of thresholds in the discussion of multilingual development and thereby paved the way for a novel approach to changes in bi- and multilingual development, as emphasised by Herdina and Jessner (2002). According to DSCT,

many processes and phenomena can become discernible or noticeable *if* they pass a threshold which makes them visible. This is referred to as “liminality” (Aronin and Jessner 2015).

In the meantime, a number of scholars have taken up the ideas of DSCT and applied them mostly to second language acquisition (SLA) research (e.g. De Bot, Lowie, and Verspoor 2007; Larsen-Freeman and Cameron 2008). From a DSCT perspective, two features of a multilingual system play a key role in understanding development: emergent properties and sensitive dependence on initial conditions.

Emergent Properties

From countless individual interactions, emergent properties evolve. Emergent phenomena are the products of interactions between the parts of a system, but they are not merely the sum of their parts. Emergent phenomena acquire properties that are different from the properties of their parts. Viral infections, traffic jams, tornados, piles of sand and school classes—they all demonstrate unpredictable behaviour and are therefore examples of emergent phenomena. The now-confirmed special quality of bilinguals is the addition to their knowledge in their two systems, L1 and L2, and the special quality possessed by trilinguals is beyond the sum of their skills in their two previous languages (Aronin and Jessner 2015).

That emergent metalinguistic abilities reflect underlying changes in cognitive abilities was already pointed out by Vygotsky, who stated that “. . . a child’s understanding of his native language is enhanced by learning a foreign” (Vygotsky 1986, 160; see also Forbes 2018, this volume). Vygotsky had thus already related the positive cognitive effect of learning a foreign language in children to the development of metalinguistic abilities.

In the 1990s, Bialystok commenced her famous work on bilingual children, which was later supplemented by her studies on bilingual processing in adults. In this regard, Bialystok et al. (2004) suggested that lifelong bilingualism protects older adults from cognitive decline. A number of scholars have applied Bialystok’s model of analysis and control as the metalinguistic dimensions of bilingual proficiency when investigating the impact of bi- and multilingualism on cognitive skills (e.g. Jessner 2006; Ricciardelli 1992). Analysis of linguistic knowledge is described as the skill component responsible for making explicit those representations that have previously been implicit or intuitive, whereas control of linguistic processing is understood as the ability to selectively attend to specific aspects of a representation, particularly in misleading situations. Bialystok’s (2011) conclusion was that there are no universal advantages for bilinguals, but that high levels of proficiency in both languages lead to advantages on tasks requiring more analytical linguistic knowledge. Recently, research concerning the executive functions in the brain has received substantial attention, because these functions seem to influence bilingual processing mechanisms (see Kroll and Bialystok 2013).

Sensitive Dependence on Initial Conditions

Sensitivity to initial conditions is a key feature of complex systems inherent to multilingualism. As pointed out by Aronin and Jessner (2015), this feature materialises in problems related to language learning in a school context, linguistic minority issues as well as new languages in a society, or new linguistic varieties. The discussion of sensitivity to initial conditions is known as the “butterfly effect”, which was modelled by Edward Lorenz for the study of meteorology to demonstrate sensitive dependence on initial conditions—that is, noticeable changes occasioned by the very slightest change. We can find a good illustration of sensitivity to specific factors in studies dealing with the status of the L2 in TLA.

Perhaps the most crucial question in research on TLA is the status of the L2. A number of studies have concluded that speakers do not rely on their L1 as expected in L3 production, but instead on their L2. The L2 seems to assume the role of a source, default and supplier language during the production of the L3, especially when the L3 learner has not yet reached a high level of proficiency in the language (Hufeisen 1991). In research dealing specifically with learning an L3 of Indo-European origin, results have shown that L3 learners whose L1 is typologically unrelated to their L2 and/or L3 have a tendency to transfer linguistic and language learning knowledge from their L2 and not from their L1 (e.g. Bartelt 1989; Cenoz, Hufeisen, and Jessner 2003; Hufeisen 1991). This finding has been corroborated by studies which have investigated learners whose complete language repertoire consists of Indo-European languages (De Angelis 2007; for an overview, see also Aronin and Hufeisen 2009).

In recent work on crosslinguistic influence in multilingual systems, it has become clear that the factor of multilingual awareness needs more attention. It has been argued that future research needs to encompass more work dedicated to crosslinguistic interaction which per se focuses on both linguistic and cognitive aspects of multilingual development (see De Angelis, Jessner, and Kresic 2015). Several factors related to multilingual awareness in its metalinguistic awareness and language (learning) awareness forms have been identified as salient in crosslinguistic processes in TLA. These factors include psychotypology (perceived linguistic distance between languages), recency of use, level of proficiency in the target language, the foreign language effect, which refers to the tendency in language learners to activate an earlier learned foreign language in L3 performance, and the learner’s perception of the correctness of a target word.

The M(ultilingualism)-Factor

In the DMM, multilingual proficiency is defined as the dynamic interaction between the various psycholinguistic systems (LS_1 , LS_2 , LS_3 , LS_n) in which the individual languages (L1, L2, L3, L_n) are embedded,

crosslinguistic interaction, and what is called the M(ultilingualism)-factor. The M(ultilingualism)-factor refers to all the effects in multilingual systems which distinguish a multilingual from a monolingual system. It includes all those qualities which develop in a multilingual speaker/learner due to increases in language contact(s) (see studies on the M-factor by e.g. Török 2017). Crosslinguistic interaction (CLIN) in multilinguals also refers to cognitive phenomena. This is a view which has also been adopted by other researchers working on crosslinguistic influence, such as Jarvis and Pavlenko (2008), who focused particularly on the process of conceptualisation.

Moreover, the M(ultilingualism)-factor is an emergent property which can contribute to the catalytic or accelerating effects in TLA. In addition to the multilingual system being in a state of constant change, the multilingual learner also develops certain skills and abilities which the monolingual speaker lacks. The key component of the M-factor is multilingual awareness, which can affect the following domains: linguistic development in general, the development of cognitive, metacognitive and information-processing abilities, and the development of literacy skills. These skills form part of multilingual development, management of linguistic resources and maintenance of proficiency levels in the various language systems involved or the multilingual system itself, which is constantly subject to change.

Metalinguistic awareness, via its close relationship to metacognitive knowledge and awareness of that knowledge, has been studied from an increasing number of research perspectives in the field of multilingual development. Metalinguistic awareness can be described as the ability to both focus on linguistic form and switch focus between form and meaning. Individuals who are metalinguistically aware will be able to both categorise words into parts of speech and switch their focus between form, function and meaning. They will also be able to explain why a word has a particular function. Consequently, the distinction between explicit and implicit learning is linked to the development of levels of metalinguistic awareness (see e.g. Ellis 2015; Jessner 2006).

As discussed before, TLA differs from SLA in various respects (De Angelis 2007; Jessner 2008a, 2008b). Metalinguistic awareness has been identified in the DMM as occupying a key role in the process of learning an additional language among, for instance, bilingual speakers growing up with two languages or among those monolinguals who have already learned one foreign language—and therefore can also be labelled bilinguals. During the learning process, students develop different levels of consciousness concerning structural characteristics of their languages and comparisons between them. That is, they learn through language and with language. In a number of TLA studies that have dealt with the learning and development of three or more languages, metalinguistic awareness has been the focus.

Whereas cognitive style was investigated in earlier studies on bilingualism, more recent research has shown interest in the process of bilingual thinking (Baker 2011). Research on metalinguistic awareness in studies

of multilingualism has thus far mainly been initiated to explore the effects of bilingualism on third language learning and the conditions of artificial learning (see below).

In a number of studies, mainly carried out in Scandinavia and the Basque territory, an additive effect of bilingualism on third language learning, which in these cases was English, was found (Cenoz and Valencia 1994; Lasagabaster 1997; Ringbom 1987; Safont 2003; Thomas 1992). Cenoz (2003) presented a detailed, critical review of studies on the effects of bilingualism on cognitive development, which she based on an extensive overview of research on bilingualism and additional language learning. Her conclusion was that most studies on general proficiency indicate a positive effect of bilingualism on TLA. Furthermore, she stated that this effect can be explained as being related to learning strategies, metalinguistic awareness and communicative ability, particularly in cases where the languages in contact are typologically close (see also Jessner 1999, 202ff.).

As discussed in detail in Jessner (2006), in research on multilingualism, the construct of metalinguistic awareness, which most commonly refers to grammatical knowledge, must be widened in order to encompass the requirements of research on multilingual learning and use. The relationship between crosslinguistic interaction—that is, the activation of languages other than the target language during third language production—and metalinguistic awareness has been the main concern of studies on third language learning processes in bilingual (German/Italian) students of English in order to shed light on the dynamic interplay between crosslinguistic interaction and metalinguistic awareness as key variables comprising part of the M-factor. James (1996, 139) defined crosslinguistic awareness as knowledge held at the explicit (declarative) level of metacognition.

In her introspective study on lexical searches in third language production, Jessner (2006) found that crosslinguistic awareness and metalinguistic awareness, tested in the form of explicit metalanguage, exerted influence on the activation of the individual languages in the multilingual mental lexicon. Crosslinguistic awareness in multilingual production is described as (a) tacit awareness shown by the use of cognates in the supporter languages (mainly in the use of combined strategies) and (b) explicit awareness in the case of switches that are introduced by metalanguage. In another study, Jessner (2005) showed that the application of metalinguistic knowledge, thereby showing learners' awareness of the knowledge, as well as the application of metalanguage, can influence multilingual processing. This was supported by her student, Graus, in a study on crosslinguistic lexical influence from English (L2) on Italian (L3) in spontaneous written production (see Jessner, Megens, and Graus 2016). Different levels of awareness seem to govern differentiation and selectivity in multilingual production and therefore call into question a number of phenomena which so far have been seen as bipolar, such as implicit versus explicit learning (see also Leow et al. 2011).

The findings in Jessner, Megens, and Graus (2016) also showed that the application of multilingual compensatory strategies reveal a close relationship between crosslinguistic awareness and linguistic awareness. The study participants applied various types of strategic processing: German-based strategies, Italian-based strategies, and strategies in which the subjects utilised both of these languages to find the right word in English. Regarding their function, strategies used to compensate for lexical insecurity or complete deficiency in the target language were used alongside compensatory strategies for determining lexical alternatives. Simplification, facilitation and avoidance strategies were also detected as part of the strategic processing.

Multilingual Strategy Use and Development

In 1990, Oxford pointed out that “meta-cognitive strategies help learners to regulate their own cognition and to focus, plan, and evaluate their progress as they move toward communicative competence” (1990, 8). In that sense, learners who are capable of using metacognitive strategies become aware of their knowledge and skills and are thus able to control their learning process, which in turn leads them towards becoming autonomous learners. Likewise, Thomas (1992, 535) rightly noted that “students’ prior linguistic experience affects the strategies they subsequently adopt, their level of consciousness about which strategies are effective, and their ultimate success in the foreign language classroom”.

Furthermore, studies on the learning of artificial languages (e.g. Nation and McLaughlin 1986; Nayak et al. 1990) evidenced the positive transfer of learning strategies insofar as expert learners outperformed their less experienced counterparts. Later, Kemp (2001) found that the performance of multilingual learners on grammaticality tests depended on the number of languages they knew. As a group, multilinguals turned out to be more proficient in the explicit than the implicit parts of the metalinguistic tests. All these authors suggested that multilinguals were more capable of structuring their strategies to the requirements of the task at hand, leading to the conclusion that one reason for their superior performance was their greater flexibility in switching strategies. In fact, in recent studies, not just the learning of artificial (including miniature and semi-artificial) languages but also existing yet unknown languages to learners have become part of TLA and multilingualism methodology.

In a French school context, Dahm (2015) reported on a large-scale strategy study in which students were confronted with three unknown languages: Dutch, Italian and Finnish. The three successive sessions focused on metase-mantic, metasyntactic and metaphonological activities. The findings of this highly innovative multilingual strategy training showed that the choice of strategy mainly depended on the perceived linguistic distance between the source and target languages. It also highlighted the necessity of introducing strategy training in L2 English in order to benefit from the transferability of

strategies and the increase of creative transfer. This is supported by Haukås (2015), who found that the L3 learners of German in her study used fewer strategies, and used them less frequently, than L2 learners of English. She therefore suggested that many learners must become aware of the strategies they are using in their L2 English and that these strategies can and should be transferred from one language to the other.

Two studies carried out in the Greek school context should also be mentioned here as recent evidence for these assumptions. Psaltou-Joycey and Kantaridou (2009) investigated the possible relations between degrees of plurilingualism and strategy use. The subjects were 1,555 Greek university students learning foreign languages in an academic context. The results of the study indicated that the trilingual students used more strategies more frequently than their bilingual peers, especially those strategies that promoted metalinguistic awareness, and that more advanced trilinguals made more frequent use of strategies that mainly belonged to the cognitive and metacognitive categories. Mitits (2015) carried out a large-scale study with over 1,200 participants attending junior high schools in Komotini, Thrace. She concentrated on the question of whether multilingual early adolescent language learners transfer language learning strategies from their L2 Greek to FL English. In the study, the multilinguals exceeded the monolinguals in the use of strategies for learning EFL, which can be attributed to prior language learning being beneficial for multilingual learners insofar as they tend to transfer the strategies they already employ in the languages they have been using and developing.

Multilingual Approaches to Language Learning within a DMM Framework

In recent studies on both the primary and secondary educational level carried out at Innsbruck University by the DyME (Dynamics of Multilingualism with English) research group, multilingual language learners had a significant advantage in the development of their metalinguistic skills. It became clear that in two obviously different sociolinguistic contexts, Austria and South Tyrol, the learners developed an enhanced level of multilingual awareness based on various multilingual teaching approaches (Jessner 2014; see also below).

Jessner, Allgäuer-Hackl, and Hofer (2016) presented a multilingual approach to learning and teaching based on language awareness within the theoretical DMM. The examples and classroom activities described have been observed or used in multilingual classes in South Tyrol and Austria with students in different age groups, varying combinations of languages spoken and learnt, and differing levels of linguistic competency. Multilingual activities can be designed for multilingual classes but also adapted to foreign language classes in such a way that they can support the development and use of the target language. They can also be integrated into subject

teaching in general and will, as is our claim, contribute to more efficient (language) learning and teaching. Multilingual approaches motivate students to develop more language learning strategies and expand the types of strategies they use (see Mißler 1999). This ties in with the notion of the different quality of language learning skills in trained multilinguals (see Hofer and Jessner 2016; Jessner, Allgäuer-Hackl, and Hofer 2016).

Similarly, Allgäuer-Hackl (2017) conducted a study on multilingual awareness in a multilingual seminar in an upper secondary school in Vorarlberg, the westernmost province of Austria. The multilingual seminar was designed as an optional subject of one lesson per week offered during the school year to students aged 16–18. Research was conducted on the question of whether this type of training influences metalinguistic awareness positively. The testing, which was carried out on metalingual and crosslinguistic awareness and language proficiency, made clear that pupils who had received multilingual training outperformed their peers on all levels. The degree of difference was statistically significant for tasks in which rules had to be drawn up and applied in an unknown language on the basis of examples. Instruction in how to do this was not given in the multilingual seminar, which was thus interpreted as a case of an emergent property, just as postulated in the DMM.

One of the main elements used and taught in the multilingual seminar was crosslinguistic awareness. Not only did any contact with other languages help reinforce the networking of all languages in the pupils' overall system and allow new system properties to be formed, it also revealed the influence of these language systems in all directions. This means that, for example, the L4 (Spanish) influenced the L3 (French) and vice versa; likewise, the L1 and L2 influenced further languages and were influenced by languages learned later on (Jessner and Allgäuer-Hackl 2015).

In a study of primary school children in South Tyrol, it was noted that regular and systematic reference to structural phenomena and language forms in all three languages served to reinforce the pupils' meta- and crosslinguistic awareness and enabled them to perceive and exploit potential synergies. In this case, the pupils attended special classes called *Reflessione Lingua*, where multilingual awareness in the form of grammatical and crosslinguistic awareness was taught (see Hofer and Jessner 2016; see also the supportive South Tyrolean study by De Angelis and Jessner 2012, which found positive correlations in written production between all three languages of the students).

In Allgäuer-Hackl's (2017) multilingual seminar and in the above-mentioned *Reflessione Lingua* class in South Tyrol, teachers allowed, and at times invited, switches to other languages if they felt that doing so would promote comprehension and communication. Switching was therefore not condemned as deviant or deficient language use, but was instead accepted as a strategic means of activating available resources. No language was excluded from the classroom. Instead, non-target languages were allowed to assume the role of a supporter language.

In two large-scale studies on linguistic awareness in language attrition carried out in both Tyrolean and South Tyrolean contexts (LAILA and LAILA-BICS, headed by Ulrike Jessner¹), young adult students were asked to produce introspective think-aloud protocols during the decoding of a Romanian text, a language hitherto unknown to the students. At the time of the study, the Tyrolean students in both contexts had been in touch with at least three languages (German/English/Latin and/or Italian or French) during their school career. The think-aloud protocols showed that the students used compensatory strategies and a high degree of creativity in the application of problem-solving activities. The examples from the LAILA and LAILA-BICS studies provided extensive evidence of the emergent properties of the multilingual users when dealing with an unknown foreign language in a multilingual complex system. The examples demonstrate the study participants' metalinguistic as well as crosslinguistic awareness based on language typology and grammatical awareness, in addition to language transfer via the use of supporter languages, such as German, English, French, Italian and Spanish, as well as Latin.

For instance, as illustrated in the following example given by Jessner and Török (2017), during a linguistic search to decode the unknown language, the subject turned to her L2 English, then her L3 French, and then translated the word *impresionant* into her L1 German. The second term, *nivelul*, first triggered the subject's L3 French, but she then turned to her L2 English (by choosing the word *level*, which is semantically related to the word *floor*) in order to finally translate the term with her L1 German word, *stock*. It should be noted that the participant avoided using the German word *Niveau*, the false friend of *floor*.

**PAR LA-049 T1 Hotel: Und jetzt weiß ich immer noch nicht, wo das Restaurant ist, abgesehen davon, dass es eine wunderbare impresionant, @eng#impression, @fr#impressionnant . . . @ger#eindrucksvoll . . . @ger#Impression #hat ja also eine eindrucksvolle Panoramaaussicht ähm lasati-va, oder dass es, vielleicht, dass es im, im elften Stock ist, nivelul, vielleicht @fr#niveau, @eng#level, @ger#Stock (.) also ich bleibe dabei, dass es im elften Stock ist.*

Translation:

**PAR LA-049 T1 Hotel: And now I still do not know where the restaurant is, apart from being a wonderful impresionant, @eng#impression, @fr#impressionnant . . . @ger#eindrucksvoll . . . @ger#Impression #it has yes such an impressive panoramic view um lasati-va, or maybe it is on the eleventh floor, nivelul, vielleicht @fr#niveau, @eng#level, @ger#Stock (.) so I'll stick with the eleventh floor.*

The relationship between multilingual awareness, in the form of metalinguistic and crosslinguistic awareness, and crosslinguistic interaction should be mentioned here, particularly how evolving cognitive flexibility underlies heightened creativity in multilingual language users and therefore not only enhances multilingual awareness but also provides more evidence of the M-factor (see Jessner and Török 2017).

Self-Assessment in Multilinguals

In research on metacognition, self-assessment, such as perceptions of proficiency in multilingual development, deserve our attention. In the DMM, perceived communicative needs play a crucial role in the development of the multilingual repertoire and its use. These needs are identified as the driving force of language learning, choice and use. It should also be noted that the needs are psychologically and sociologically determined and are subject to change. The speaker decides which language to use with whom and in which situation. The speaker also decides when and why another language should be added to the multilingual's repertoire. According to Grosjean (2001), a trilingual person can function in a monolingual, bilingual or trilingual mode with various levels of activation (see also Stavans and Hoffmann 2015 on language choices). Thus, metacognitive decision-making in the process of language planning and use on the individual level is influenced by the speakers' perceived needs. The level of multilingual awareness plays a considerable role in all these processes; for instance, when comparing levels of proficiency between the languages of a speaker.

Related to the issue of perceived communicative needs is perceived level of proficiency or knowledge in language learners, which plays a vital role in self-assessment. Self-assessment is a useful method for learners to develop metacognitive skills, as they learn to recognise their own abilities and deficits. Metacognitive skills are generally divided into "self-assessment (the ability to assess one's own cognition) and self-management (the ability to manage one's further cognitive development)" (Ibabe and Jauregizar 2010, 246). Hence, students who are able to accurately self-assess their skills are more likely to develop strategies for their learning process and therefore perform better than those who are unaware of their strengths and shortcomings. Therefore, self-assessment and metacognition are closely intertwined, "since the ultimate goal of self-assessment is that students learn to self-assess their knowledge and to self-regulate their learning process, thus increasing their autonomy and intrinsic motivation" (Ibabe and Jauregizar 2010, 246). This observation is supported by Wenden, who noted that self-regulation is closely related to metacognitive knowledge or the "specialized portion of a learner's acquired knowledge base" (2014, 45). Thus, self-assessment promotes the use of metacognitive strategies, such as managing and organising learning, monitoring and observation of the learning process, and reflection on learning.

In the LAILA project mentioned above, which explored attrition processes in foreign language students in secondary Tyrolean schools, one part of the testing was dedicated to self-assessment of foreign language proficiency. The data analysis of self-assessment in the respective languages (English, French, Spanish, Italian) and C-tests, both before and after the final exam, showed a positive correlation between what students thought they knew after a longer period of non-use and their actual performance on the C-tests. The 182 participants were asked to self-assess their level of proficiency in all four skills (reading, writing, speaking, listening) in all foreign languages on a Likert scale (Kratky 2017). However, when exploring attrition processes in oral production, a marked discrepancy between students' subjective self-assessment of their language skills and the measured changes in output quality was documented. Subjects' feelings about how their language skills had improved or deteriorated since graduation did not mirror how their oral language production on the speaking tasks had actually changed. Whether this indicates that the testing population had poor self-assessment skills or the students felt their skills in a given foreign language had deteriorated—although the quality of the output did not actually change that much, the effort and difficulty required to produce that output did—is not clear. This discussion makes clear that self-assessment with respect to perceived proficiency in multilinguals does not always mirror learners' actual language progress or decay.

Conclusion

Interest in work on metacognition in learning has increased over the last few years, as has research on metacognition in language learning. Lately, the role that metalinguistic competences and awareness of multilingual competences play in research on second language learning, bi- and multilingualism has also been scrutinised more intensively. In so-called multicompetence approaches to multilingual learning and teaching—that is approaches based on the notion of multicompetence, drawing on the specific qualities of a multilingual speaker/hearer—this becomes obvious (Jessner 2008a, 2008b, 2016).

As the discussion in this chapter shows, the importance of multilingual awareness in the language learning process appears to increase alongside growth in the intensity and amount of exposure to other languages. This is also true of multilingual strategy use, another area of research which needs to be investigated from a multilingual and metacognitive perspective, thereby applying multilingual rather than monolingual norms to multilingual development (Jessner and Török 2017).

In the language classroom, it is essential that language teachers are aware of their own knowledge and beliefs about languages, cultures and language learning in order to support their students in their learning efforts (see Haukås 2018, this volume). Similarly, language students can profit from a conscious approach to the language learning process, as discussed in Jessner

(2006) and a number of subsequent publications. Clearly, there is a need for further investigations within TLA and multilingualism research, particularly on strategic processing within experienced multilingual language learners, given the fact that research within SLA does not offer an accurate framework for these kinds of studies and therefore cannot be applied to highly complex and dynamic systems as those represented by multilinguals. Schmidt (1993), who discussed strategy learning, awareness and attention, rightly pointed out that attention to input is a necessary condition to any learning, and that the attentional threshold for noticing is the same as that for learning. Consequently, a good language learner is one who is both experienced and able to make use of his or her multilingual competencies as a strategic resource to manage and steer further (or lifelong) language learning.

As self-assessment promotes control over learners' cognitive activities, students gradually learn which strategies suit them best for accomplishing learning objectives as well as how and when to apply them. As pointed out above, self-assessment in multilingual learning also includes thinking about levels of proficiency in each of the languages and how these are affected by changes in development. For teaching, this means that emphasis should be placed on training students to accurately self-assess and adequately use the results to acquire learner autonomy and thus gain control of the learning process.

From a research perspective, this means that only if we move away from a simplistic picture of language learning by taking the hypercomplexity of the multilingual mind into consideration will we be able to make progress in understanding how language learning takes place (see Aronin and Jessner 2015 for a more detailed discussion). To understand a multilingual person as someone who has a different way of using and knowing her or his languages in contrast to native speakers means acknowledging the cognitive opportunities that life as a multilingual can offer and profiting from the benefits of the contact with two or more languages.

Note

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References

- Allgäuer-Hackl, Elisabeth. 2017. "Multilingual/Metalinguistic Awareness in School Contexts Within a Dynamic Systems and Complexity Theory Perspective. The Effects of Training on Multiple Language Use and Multilingual Awareness." PhD diss., University of Innsbruck, Innsbruck.
- Aronin, Larissa, and Britta Hufeisen, eds. 2009. *The Exploration of Multilingualism*. Amsterdam: Benjamins.
- Aronin, Larissa, and Ulrike Jessner. 2015. "Understanding Current Multilingualism: What Can the Butterfly Tell Us?" In *The Multilingual Challenge: Cross-Disciplinary*

- Perspectives*, edited by Ulrike Jessner and Claire J. Kramsch, 271–94. Berlin/ Boston: Walter de Gruyter.
- Baker, Colin. 2011. *Foundations of Bilingualism and Bilingual Education*. 5th ed. Clevedon: Multilingual Matters.
- Bartelt, Guillermo. 1989. "The Interaction of Multilingual Constraints." In *Interlingual Processes*, edited by Hans-Wilhelm Dechert and Manfred Raupach, 151–77. Tübingen: Narr.
- Bialystok, Ellen. 2011. "How Does Experience Change Cognition? Evaluating the Evidence." *British Journal of Psychology* 102: 303–5. <https://doi.org/10.1111/j.2044-8295.2011.02008.x>
- Bialystok, Ellen, Fergus Craik, Raymond Klein, and Mythili Viswanathan. 2004. "Bilingualism, Aging, and Cognitive Control: Evidence from the Simon Task." *Psychology and Aging* 19: 290–303. <https://psycnet.apa.org/doi/10.1037/0882-7974.19.2.290>
- Cenoz, Jasone. 2003. "The Additive Effect of Bilingualism on Third Language Acquisition." *International Journal of Bilingualism* 7: 71–88. <https://doi.org/10.1177/13670069030070010501>
- Cenoz, Jasone, Britta Hufeisen, and Ulrike Jessner, eds. 2003. *The Multilingual Lexicon*. Dordrecht: Kluwer.
- Cenoz, Jasone, and Josu Valencia. 1994. "Additive Trilingualism: Evidence from the Basque Country." *Applied Psycholinguistics* 15: 197–209. <https://doi.org/10.1017/S0142716400005324>
- Chamot, Anna U. 2001. "The Role of Learning Strategies in Second Language Acquisition." In *Learner Contributions to Language Learning*, edited by Michael P. Breen, 25–43. Harlow: Longman.
- Cook, Vivian. 1991. "The Poverty-of-the-Stimulus Argument and Multi-Competence." *Second Language Research* 7 (2): 103–17. <https://doi.org/10.1177/026765839100700203>
- . 2002. "Background to the L2 User." In *Portraits of the L2 User*, edited by Vivian Cook, 1–28. Clevedon: Multilingual Matters.
- . 2003. "The Changing L1 in the L2 User's Mind." In *Effects of the Second Language on the First*, edited by Vivian Cook, 1–18. Clevedon: Multilingual Matters.
- Cummins, Jim. 1991. "Language Learning and Bilingualism." *Sophia Linguistica* 29: 5–194.
- Dahm, Rebecca. 2015. "Developing Cognitive Strategies Through Pluralistic Approaches." In *Cross-linguistic Influence and Multilingualism*, edited by Gessica de Angelis, Ulrike Jessner, and Marijana Kresic, 43–70. London: Bloomsbury.
- De Angelis, Gessica. 2007. *Third or Additional Language Learning*. Clevedon: Multilingual Matters.
- De Angelis, Gessica, and Ulrike Jessner. 2012. "Writing Across Languages in a Bilingual Context: A Dynamic Systems Theory Approach." In *L2 Writing Development: Multiple Perspectives* (Trends in Applied Linguistics 6), edited by Rosa Manchón, 47–68. Berlin / New York: Mouton de Gruyter.
- De Angelis, Gessica, Ulrike Jessner, and Marijana Kresic, eds. 2015. *Crosslinguistic Influence and Crosslinguistic Interaction in Multilingual Language Learning*. London: Bloomsbury Academic.
- De Bot, Kees, Wander Lowie, and Marjolijn Verspoor. 2007. "A Dynamic Systems Theory to Second Language Acquisition." *Bilingualism: Language and Cognition* 10 (1): 7–21. <https://doi.org/10.1017/S1366728906002732>

- Ellis, Nick. 2015. "Implicit and Explicit Learning: Their Dynamic Interface and Complexity." In *Implicit and Explicit Learning of Languages*, edited by Patrick Rebuschat, 3–23. Amsterdam: John Benjamins.
- Forbes, Karen. 2018. "‘In German I have to think about it more than I do in English’: The Foreign Language Classroom as a Key Context for Developing Transferable Metacognitive Writing Strategies." In *Metacognition in Language Learning and Teaching*, edited by Åsta Haukås, Camilla Bjørke, and Magne Dypedahl. New York: Routledge
- Gombert, Jean-Émile. 1992. *Metalinguistic Development*. New York: Harvester Wheatsheaf.
- Grosjean, François. 1985. "The Bilingual as a Competent But Specific Speaker-Hearer." *Journal of Multilingual and Multicultural Development* 6: 467–77. <http://doi.org/10.1080/01434632.1985.9994221>
- . 2001. "The Bilingual's Language Modes." In *One Mind, Two Languages: Bilingual Language Processing*, edited by Janet Nicol, 1–25. Oxford: Blackwell.
- Haukås, Åsta. 2015. "A Comparison of L2 and L3 Learners' Strategy Use in School Settings." *Canadian Modern Language Review* 71 (4): 383–405. <https://doi.org/10.3138/cmlr.2701>
- . 2018. "Metacognition in Language Learning and Teaching: An Overview." In *Metacognition in Language Learning and Teaching*, edited by Åsta Haukås, Camilla Bjørke, and Magne Dypedahl. New York: Routledge.
- Herdina, Philip, and Ulrike Jessner. 1994. "The Paradox of Transfer." Paper presented at IRAAL conference, Dublin, June.
- . 2002. *A Dynamic Model of Multilingualism: Changing the Psycholinguistic Perspective*. Clevedon: Multilingual Matters.
- Hofer, Barbara, and Ulrike Jessner. 2016. "Multilingualism at the Primary Level in South Tyrol: How Does Multilingual Education Affect Young Learners' Metalinguistic Awareness and Proficiency in L1, L2 and L3?" *The Language Learning Journal*: 1–12. Accessed July 6, 2017. <https://doi.org/10.1080/09571736.2016.1195865>
- Hufeisen, Britta. 1991. *Englisch als erste und Deutsch als zweite Fremdsprache*. Frankfurt am Main: Peter Lang Verlag.
- Ibabe, Izaskun, and Joana Jauregizar. 2010. "Online Self-Assessment with Feedback and Metacognitive Knowledge." *Higher Education* 59: 243–58.
- James, Carl. 1996. "A Cross-Linguistic Approach to Language Awareness." *Language Awareness* 5: 138–48. <https://doi.org/10.1080/09658416.1996.9959903>
- Jarvis, Scott, and Aneta Pavlenko. 2008. *Crosslinguistic Influence in Language and Cognition*. London: Routledge.
- Jessner, Ulrike. 1999. "Metalinguistic Awareness in Multilinguals: Cognitive Aspects of Third Language Learning." *Language Awareness* 3 & 4: 201–9. <https://doi.org/10.1080/09658419908667129>
- . 2005. "Multilingual Metalanguage, or the Way Multilinguals Talk About Their Languages." *Language Awareness* 14 (1) (Special Issue: Metalanguage in Applied Linguistics): 56–68. <https://doi.org/10.1080/09658410508668820>
- . 2006. *Linguistic Awareness in Multilinguals: English as a Third Language*. Edinburgh: Edinburgh University Press.
- . 2008a. "A DST-model of Multilingualism and the Role of Metalinguistic Awareness." *Modern Language Journal* 92 (2): 270–83. <https://doi.org/10.1111/j.1540-4781.2008.00718.x>
- . 2008b. "Teaching Third Languages: Findings, Trends and Challenges." *Language Teaching* 41: 15–56. <https://doi.org/10.1017/S0261444807004739>

- . 2014. "On Multilingual Awareness or Why the Multilingual Learner Is a Specific Language Learner." In *Essential Topics in Applied Linguistics and Multilingualism, Second Language Learning and Teaching*, edited by Mirosław Pawlak and Larissa Aronin, 175–84. Vienna / New York: Springer.
- . 2016. "Multicompetence Approaches to Language Proficiency Development in Multilingual Education." In *Bilingual and Multilingual Education. Encyclopedia of Language and Education*, edited by Ofelia Garcia, Angel Lin, and Stephen May. New York: Springer. https://doi.org/10.1007/978-3-319-02324-3_10-1
- Jessner, Ulrike, and Elisabeth Allgäuer-Hackl. 2015. "Mehrsprachigkeit aus einer dynamisch-komplexen Sicht oder warum sind Mehrsprachige nicht einsprachig in mehrfacher Ausführung?" In *Mehr Sprachen?—PlurCur! Berichte aus der Forschung und Praxis zu Gesamtsprachencurricula*, edited by Elisabeth Allgäuer-Hackl, Erin Brogan, Ute Henning, Britta Hufeisen, and Joachim Schlabach, 209–29. Hohengehren: Schneider.
- Jessner, Ulrike, Elisabeth Allgäuer-Hackl, and Barbara Hofer. 2016. "Emerging Multilingual Awareness in Educational Contexts: From Theory to Practice." *The Canadian Modern Language Review/La revue canadienne des langues vivantes* 72 (2): 157–82. <https://doi.org/10.3138/cmlr.2746>
- Jessner, Ulrike, Manon Megens, and Stephanie Graus. 2016. "Crosslinguistic Influence in Third Language Acquisition." In *Crosslinguistic Influence in Second Language Acquisition*, edited by Rosa Alonso, 193–214. Clevedon: Multilingual Matters.
- Jessner, Ulrike, and Valentina Török. 2017. "Strategies in Multilingual Learning: Opening New Research Avenues." In *Implications for the Future: Applied Linguistics Perspectives*, edited by Judit Navracsics and Simone Pfenninger, 192–211. Bristol: Multilingual Matters.
- Kemp, Charlotte. 2001. "Metalinguistic Awareness in Multilinguals: Implicit and Explicit Grammatical Awareness and Its Relationship with Language Experience and Language Attainment." PhD diss., University of Edinburgh, Edinburgh.
- Kratky, David. 2017. "Self-Assessment of Foreign Language Proficiency in the LAILA Study." Unpublished diploma thesis, University of Innsbruck, Innsbruck.
- Kroll, Judith, and Ellen Bialystok. 2013. "Understanding the Consequences of Bilingualism for Language Processing and Cognition." *Journal of Cognitive Psychology* 25: 497–514. <https://doi.org/10.1080/20445911.2013.799170>
- Larsen-Freeman, Diane, and Lynne Cameron. 2008. *Complex Systems and Applied Linguistics*. Oxford: Oxford University Press.
- Lasagabaster, David. 1997. "Creatividad y conceinca metalingüística: incidencia en el aprendizaje del inglés como L3." PhD diss., University of the Basque Country, Vitoria-Gasteiz.
- Leow, Ronald P., Ellen Johnson, and Germán Zarate-Sandez. 2011. "Getting a Grip on the Slippery Construct of Awareness: Toward a Finer-Grained Methodological Perspective." In *Implicit and Explicit Language Learning: Conditions, Processes, and Knowledge in SLA and Bilingualism*, edited by Cristina Sanz and Ronald P. Leow, 61–72. Washington: Georgetown University Press.
- Mißler, Bettina. 1999. *Fremdsprachenlernerfahrungen und Lernstrategien*. Tübingen: Stauffenburg.
- Mitits, Lydia. 2015. *Language Learning Strategies and Multilingualism: Monolingual EFL and Multilingual EFL/L2 Greek Learners in Greek Secondary Education*. Kavala: Saita Publications.

- Nation, Robert, and Barry McLaughlin. 1986. "Experts and Novices: An Information-processing Approach to the 'Good Language Learner' Problem." *Applied Psycholinguistics* 7: 51–6. <https://doi.org/10.1017/S0142716400007177>
- Nayak, Nandini, Nina Hansen, Nancy Krueger, and Barry McLaughlin. 1990. "Language-Learning Strategies in Monolingual and Multilingual Adults." *Language Learning* 40 (2): 221–44. <https://doi.org/10.1111/j.1467-1770.1990.tb01334.x>
- Oxford, Rebecca. 1990. *Language Learning Strategies: What Every Teacher Should Know*. Boston: Heinle & Heinle.
- Psaltou-Joycey, Angeliki, and Zoe Kantaridou. 2009. "Foreign Language Learning Strategy Profiles of University Students in Greece." *Journal of Applied Linguistics* 25: 107–27.
- Ricciardelli, Lina A. 1992. "Bilingualism and Cognitive Development in Relation to Threshold Theory." *Journal of Psycholinguistic Research* 21: 56–67. <https://doi.org/10.1007/BF01067515>
- Ringbom, Hakan. 1987. *The Role of First Language in Foreign Language Learning*. Clevedon: Multilingual Matters.
- Safont, Pilar. 2003. "Metapragmatic Awareness and Pragmatic Production of Third Language Learners of English: A Focus on Request Acts Realisations." *International Journal of Bilingualism* 7 (1): 43–69. <https://doi.org/10.1177/13670069030070010401>
- Schmidt, Richard. 1993. "Awareness and Second Language Acquisition." *Annual Review of Applied Linguistics* 13: 206–26. <https://doi.org/10.1017/S0267190500002476>
- Stavans, Anat, and Charlotte Hoffmann. 2015. *Multilingualism*. Cambridge: Cambridge University Press.
- Thomas, Jacqueline. 1992. "Metalinguistic Awareness in Second- and Third Language Learning." *Journal of Multilingual and Multicultural Development* 9: 235–46. [https://doi.org/10.1016/S0166-4115\(08\)61515-0](https://doi.org/10.1016/S0166-4115(08)61515-0)
- Török, Valentina. 2017. "Approaching the M(ultilingualism)-Factor: On the Development of Strategic Processing in Multilinguals." PhD diss., University of Innsbruck, Innsbruck.
- Vygotsky, Lev. 1986 [1934]. *Thought and Language*, edited by Alex Kozulin. Cambridge: MIT Press.
- Wenden, Anita. 2014. "Metacognitive Knowledge in SLA: The Neglected Variable." In *Learner Contributions to Language Learning: New Directions in Research*, edited by Michael Breen, 44–65. New York: Routledge.