Past its expiry date?
The SILL in modern mixed-methods strategy research

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Abstract

Has the *Strategy Inventory for Language Learning* (SILL) passed its expiry date? The SILL (Oxford, 1990) was designed as a self-evaluation tool to measure the frequency of language learning strategies used by foreign and second language (L2) learners. With simple mathematics, learners can analyze their strategy preferences overall and in six categories (i.e., memory, cognitive, compensation, metacognitive, affective, and social strategies). Diverging from its original purpose, the SILL became the most popular instrument in LLS research, which brought widespread acclaim but also criticism. This article explains what makes the SILL an extraordinary tool for learners, teachers, and researchers and how it can be adapted to suit specific contexts and the demands of a modern world. An example of how the SILL can be integrated into mixed-methods research demonstrates how the instrument can fulfil additional purposes to those originally intended. Despite its naturally quantitative orientation, the SILL contributed to the acquisition of rich qualitative information, which enabled a holistic view of five individual L2 learners. In addition to new insights about strategic L2 learning, the study attests that the SILL has not expired yet, but perhaps needs a modern touch, for instance, in the form of adaptation or combination with other research methods and the inclusion of strategies for learning language with technology.

Keywords: Strategy Inventory for Language Learning (SILL); language learning strategies; mixed-methods research; learner preferences

1. Introduction

Almost 30 years ago, Oxford (1990) published a questionnaire for foreign and second language (L2) learners to analyze how frequently particular language learning strategies (LLS) are used. LLS are actions and thoughts that support processes and emotions involved in L2 learning and that contribute to the improvement of language proficiency (for a detailed discussion about LLS definitions and related issues, see Oxford, 2011). Oxford's *Strategy Inventory for Language Learning* (SILL) has achieved significant fame and has become the most popular tool in LLS research.

The SILL has been adapted to suit specific groups of participants (e.g., young learners), specific research contexts (e.g., the language spoken in a learning environment), and particular research objectives (e.g., to inquire about a certain aspect of L2 learning, like vocabulary or pronunciation). The flexibility the SILL provides in terms of opportunities for adaptation has contributed to its global success, which was not diminished by the criticism, starting in 2003 (Dörnyei & Skehan, 2003), that accompanied its popularity. Contrary to the criticism, the SILL has been increasingly employed in LLS research (Mizumoto & Takeuchi, 2018) as the purposes of the SILL have expanded, resulting in the instrument attaining a prominent role in mixed-methods research and small-scale studies in addition to its use in large-scale studies (e.g., Gavriilidou & Psaltou-Joycey, 2018).

This article introduces the SILL as it was originally intended 28 years ago and reports how it has become the most frequently used instrument in LLS research (section 2). The design and contents of the SILL and other main advantages are explained in section 3. Section 4 discusses criticism of the SILL, and section 5 explains adaptations of the SILL to meet circumstantial and contextual requirements. Section 6 is a detailed review of how the SILL contributed to a mixed-methods study inquiring the individual LLS use of five L2 learners. The final part of the article argues that the SILL has not passed its expiry date and recommends future research.

2. The origin of the SILL and what has become of it

The SILL (Oxford, 1990) was published as a tool for L2 learners to self-evaluate the frequency of their use of language learning strategies.1 It is comprised of 50 statements that describe strategic learner action, which L2 learners rate on a 5-point

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[1] Oxford published two versions of the SILL: version 5.1 © R. L. Oxford, 1989 for English speakers learning a new language (Oxford, 1990, p. 283-291) and version 7.0 [EFL/ESL] © R. L. Oxford, 1989 for speakers of other languages learning English (Oxford, 1990, p. 293-300). This article refers to the SILL version 7.0.

scale. The SILL shows in numbers how often L2 learners use LLS overall and which types of LLS they prefer.[2]

Its relatively uncomplicated, quantitative manner of measuring strategy application was soon deployed for research purposes, and the SILL became "without doubt the most widely used instrument in language learner strategy research" (White, Schramm, & Chamot, 2007, p. 99). The SILL was the central data collection tool for scores of doctoral dissertations,[3] master's theses, and diploma theses. The instrument has greatly benefited learners, teachers, and researchers and has led to forward-looking and trend-setting publications about LLS (e.g., Gao, 2010; Gunning, 1997; Gunning & Oxford, 2014; Oxford & Burry-Stock, 1995). According to Grenfell and Macaro (2007), by the mid-1990s, the SILL had been utilized "to assess the strategy use of more than 10,000 learners worldwide" (p. 17). More recently, a thorough investigation of questionnaires in LLS research confirmed the popularity of the SILL as the number-one data collection instrument (Mizumoto & Takeuchi, 2018). But why has the SILL made such a tremendous impact on LLS research? What is the secret of its success or its frequency of use? The following section explores the most striking advantages of the SILL which have greatly contributed to its fame.

3. Advantages of the SILL

The SILL owes its remarkable popularity as a self-evaluation and research tool to three basic features: its comprehensible design, its user-friendliness for L2 learners, and its user-friendliness for researchers. This section provides a detailed description of the instrument by highlighting these three main advantages.

3.1. Systematic and understandable structural design

The SILL has a coherent structural design that is appropriate for the originally intended purpose of the instrument, that is, to measure the frequency of L2 learners' strategy use. The items on the SILL are grouped into six strategy categories, three of which are *direct strategies* and three are *indirect strategies* (see also Rubin, 1975). *Direct strategies* "require mental processing of the [target] language" (Oxford, 1990, p. 37), which occurs when learners store and retrieve

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[2] Section 3 describes the original SILL in more detail and provides a list of all 50 strategy statements in the SILL.

[3] In 1999, Oxford estimated that the SILL was used for 40 doctoral dissertations but it can be presumed that the number has dramatically risen since then. An accurately updated count is not available in the literature but Oxford (personal communication, September 26, 2017) estimates that it might be in the hundreds by now.

information from their memory (*memory strategies*), when learners try to understand and create new language (*cognitive strategies*), and when learners try to compensate for knowledge gaps in the target language (*compensation strategies*). *Indirect strategies* "support and manage language learning without (in many instances) directly involving the target language" (p. 135). They cater for the coordination of learning processes (*metacognitive strategies*), are responsible for the regulation of a learner's emotions, motivation, and attitude (*affective strategies*), and support learning processes when learners interact with others (*social strategies*). Table 1 provides an overview of the categorization of strategies in the SILL. Oxford (1990) emphasizes that direct and indirect strategies are intertwined and that all strategies support each other despite the division of strategies into two main groups and six strategy categories.[4]

Table 1 Categorization of strategies in the SILL (adapted from Oxford, 1990 with permission)

Direct strategies	Memory strategies	Part A	Remembering more effectively
	Cognitive strategies	Part B	Using all your mental processes
	Compensation strategies	Part C	Compensating for missing knowledge
Indirect strategies	Metacognitive strategies	Part D	Organizing and evaluating your learning
	Affective strategies	Part E	Managing your emotions
	Social strategies	Part F	Learning with others

3.2. User-friendliness for L2 learners

Due to its straightforward design and a manageable number of explicit statements, the original SILL is easy for L2 learners to use. The SILL is comprised of a total of fifty items that are grouped into the six above-mentioned strategy categories, each describing a strategic action in one comprehensible sentence. Examples include: "I use new English words in a sentence so I can remember them" (item 2; memory), "I try not to translate word-for-word" (item 22; cognitive), "I try to guess what the other person will say next in English" (item 28; compensation), "I plan my schedule so I will have enough time to study English" (item 34; metacognitive), "I write down my feelings in a language learning diary" (item 43; affective), and "I ask English speakers to correct me when I talk" (item 46; social) (for a complete list of all SILL statements, see Oxford, 1990, p. 293-300).

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[4] Oxford stopped using the direct versus indirect distinction decades ago, when it became clear that users were ignoring her cautions about how direct and indirect strategies (and, for that matter, all categories of strategies) functionally overlap and support each other. Oxford's (2017) most recent model, the S²R (Strategic Self-Regulation) Model, identifies strategy categories broadly and again emphasizes the functional flexibility and overlap of strategy categories. Importantly, Oxford's (2017) strategy definition has many components of her 1990 strategy definition

In the instructions for the SILL, L2 learners are asked to indicate how each strategy statement relates to their own L2 learning by ticking a number on a 5-point scale (1 = *never or almost never true of me*; 2 = *usually not true of me*; 3 = *somewhat true of me*; 4 = *usually true of me*; 5 = *always or almost always true of me*). It usually takes a person only a few minutes to complete the inventory without putting much strain on them. Likewise, the calculation of the outcomes of the inventory is straightforward and only requires an understanding of basic math. Young language learners, however, may not be able to produce their own SILL results and may need the assistance of an adult. Once learners know how to add and divide numbers, they can calculate their SILL results, as the next section explains.

3.3. User-friendliness for LLS teachers and researchers

The SILL is user-friendly for researchers and teachers because no particular computer software nor any specific knowledge of statistics is required for the quantitative analysis of the outcomes. According to Oxford's (1990) guidelines, the numbers indicated for each strategy category are added up and divided by the number of statements in the corresponding category. This simple calculation determines average (i.e., mean) numbers for each of the six categories. Likewise, an overall average (grand mean) is achieved by adding up the ratings of all statements and dividing the total number by 50. A language learner's SILL profile, therefore, presents three outcomes: a self-evaluation for each strategy statement, an average or mean number for each of the six strategy categories, and an overall average or grand mean of strategy use. The average numbers obtained through these simple calculations correspond with a key to determine high, medium, and low frequency of LLS use, as shown in Table 2.

Table 2 Key to determine high, medium, and low frequency of LLS use (adapted from Oxford, 1990 with permission)

		Range of means per strategy category or overall
High	Always or almost always used	4.5 to 5.0
	Usually used	3.5 to 4.4
Medium	Sometimes used	2.5 to 3.4
Low	Generally not used	1.5 to 2.4
	Never or almost never used	1.0 to 1.4

Hsaio and Oxford (2002) remark that the SILL generates comparable outcomes to those of task-based strategy measures (e.g., Tseng, Dörnyei, & Schmitt, 2006; Vandergrift, Goh, Mareschal, & Tafaghodtari, 2006) but is easier to administer due to its user-friendly design (see also Ardasheva & Tretter, 2013). But is the SILL

really a fantastic research tool or are appearances deceitful? Has the SILL been idealized because of its comprehensiveness and easy handling? The next section discusses criticism of the tool.

4. Criticism of the SILL

The design of the SILL as a research instrument was sharply criticized by Dörnyei (2005) and Woodrow (2005), who oppose the use of Likert scales to measure the frequency of strategies in combination with items defining specific learner behaviors. Dörnyei (2005) argues that it is impossible to reveal a general trend, and therefore the total scale scores are invalid. Tseng et al. (2006) criticize the use of "behavioral items" (e.g., using flashcards) in combination with frequency adverbs in the 5-point scale. However, Ardasheva and Tretter (2013) examined central tendency and variability statistics of individual SILL items and concluded that the SILL scale offers a suitable range of options for learners to select "a point on a continuum that best corresponds to their behavior" (p. 485). Ardasheva and Tretter further highlight that "the use of behavioral items to measure latent constructs including learner characteristics and behaviors . . . is a common practice in educational research that has produced valid results" (p. 145). Oxford and Amerstorfer (2018) agree that "Likert-scale surveys often offer a broad picture of LLS use" (p. xxix), and Griffiths and Oxford (2014) note that "[o]ver the years, probably the most common method used in strategy research has been the Likert-scale type questionnaire" (p. 4). Gunning and Oxford (2014) suggest that ordinary data gathered with the SILL should be analyzed with non-parametric statistics. However, Mizumoto and Takeuchi (2018, p. 105) have shed greater light on this, explaining that parametric statistics are clearly usable for the SILL under specific conditions:

> The whole issue of which statistics (parametric or nonparametric) to use for strategy questionnaires, which are ordinal scale in nature, boils down to the distribution of data. If the data is normally distributed, we can justify the use of numerical summaries of the data such as the means and the standard deviations, and those values are used for making assumptions about a population's parameters. (hence the name 'parametric' statistics)

Presaging the work of Mizumoto and Takeuchi (2018), statisticians quoted by Oxford (2011) presented the frequent relevance of parametric statistics for Likert-scale inventories, which would include the SILL (see the editorial for this special issue).

LoCastro (1994) advises against using the SILL across different sociocultural environments because L2 learners might find some of the statements inappropriate for their own language learning situations. Moreover, the contents of the original SILL have partly become outdated. Twenty-eight years after its publication and many technological advances later, the SILL lacks strategy statements that refer to state-

of-the-art L2 learning and teaching (Amerstorfer, 2016). Today many classrooms in developed parts of the world are equipped with technology that simply had not been invented or was not available for public use before the 1990s, such as the Internet, smartphones, tablets, and learning apps. One part of the US government is now revising the SILL, with Oxford's assistance, to include items related to technology-enhanced language learning (TELL) (Oxford, personal communication, September 26, 2017). Since sociocultural and technological factors influence L2 learning (in addition to many other factors, such as educational policies, the languages spoken in a country or region, and demographic and personal information about individual participants), the design of a study should be adjusted to suit the research context. For nearly two decades, Oxford has encouraged researchers and teachers to adapt the SILL for their contexts by adding, omitting, or revising items. By adapting the original SILL, problems related to missing, inappropriate, or outdated strategy statements can be minimized, as described in section 5. Yet, if cleverly employed, even SILL statements that are inappropriate for a specific research environment can reveal interesting information (see section 6).

Further criticism comes from White et al. (2007), who argue that since the application of LLS involves mainly internal, mental processes, "reliable data cannot be gathered when subjects are asked to give reports on information that they usually do not pay attention to . . . or when they are asked to give generalized reports after several performances" (p. 99). Contradicting this concern, Hsaio and Oxford's (2002) evaluation of 15 strategy classification systems shows that Oxford's (1990) scheme, out of several other well-known schemes, most consistently reflects L2 learners' actual strategy application. Nevertheless, a possible lack of learner awareness of LLS use is indeed a problematic issue. The problem, however, does not lie in the strategy categorization or the research instrument per se but is a general concern acknowledged and discussed in the LLS literature (Amerstorfer, 2016; Cohen, 2012; Gu, 2007; O'Malley & Chamot, 1990; Oxford, 2011).

Researchers often emphasize consciousness or awareness as an important factor that distinguishes strategies from non-strategic learner action (Cohen, 2012). Oxford (2011, p. 12) cautions that learning strategies, which are "intentional and deliberate," must not be confused with skills, which are "automatic and out of awareness." LLS are "teachable actions that the learners choose from among alternatives and employ for L2 learning purposes (e.g., constructing, internalizing, storing, retrieving, and using information; completing short-term tasks; and/or developing L2 proficiency and self-efficacy in the long term)" (Oxford, 2011, p. 12). This means that language teachers can actively support learners' growth of LLS awareness and LLS use.

Many suggestions for measures to increase learner awareness regarding their own strategy use are available. Chamot (2018), for instance, employs strategy

awareness-raising activities in teacher education; Gunning and Turner (2018) integrate awareness-raising in strategy instruction at primary level; and Oxford, Lavine, and Amerstorfer (2018) use AIMS (Amazing IMages of Strategies) to improve individual L2 learners' awareness of strategic actions. Still, the fact remains that a research tool cannot be held responsible for a lack of learner awareness. If insufficient awareness of LLS use endangers the reliability of a study, as White et al. (2007) claim, perhaps the research design of a study needs reconsideration. If the SILL is found problematic for a specific purpose or in a certain context, the researcher must choose instruments that are more appropriate. Alternatively, the SILL can be combined with other instruments or adapted accordingly, for example, by adding awareness items to ask learners to what extent they are aware of each strategy.

Despite all criticism and concerns, the SILL remains the most frequently used research instrument in LLS research. Its success is reinforced by the results of a review of research on the psychometric qualities of the instrument (Oxford & Burry-Stock, 1995), refuting further criticism by Dörnyei and Ryan (2015) who claim that "the scales in the SILL are not cumulative, and therefore computing mean scale scores is psychometrically not justifiable" (p. 158). The review shows that the utility and reliability[5] of the SILL are both high. Furthermore, the SILL items match Oxford's (1990) categorization scheme (high content validity), there is a relationship between L2 proficiency and strategy use[6] (high predictive validity; see also Lan & Oxford, 2003; Magogwe & Oliver, 2007), and the SILL achieves similar results to other research tools (high concurrent validity).

To sum up, the SILL has survived the critical headwind. It has been successfully employed as both a self-evaluation instrument and a research tool for almost thirty years. Its popularity has not faded, and teachers and researchers have adapted the instrument to make it suitable for specific circumstances. The next section focuses on SILL adaptations.

5. Adaptation of the SILL

Compared to designing a new questionnaire from scratch, adapting the SILL is a much more economical option in terms of human and financial resources. Translating the

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[5] The utility of a research instrument is its "*usefulness . . . in real-world settings for making decisions relevant to people's lives. . . .* Reliability refers to the *degree of precision or accuracy of scores on an instrument*" (Oxford & Burry-Stock, 1995, p. 6; original italics).
[6] The existence of a relationship between L2 proficiency and LLS use has generally been recognized, but the direction of causality has to this date not been clarified. In other words, it remains unclear whether L2 learning success causes an increase in LLS use or whether frequent use of LLS leads to higher L2 proficiency.

SILL[7] is one form of adaptation that has pragmatic advantages. Translations are particularly meaningful for studies that involve participants with low L2 proficiency. They avoid problems caused by insufficient knowledge of the target language and lower inhibition in learners who experience L2 anxiety. Nevertheless, translation is sometimes only part of a more extensive adaptation process, as suggested by Hambleton and Patsula (1998). Khalil (2005), for instance, applied a four-step process to translate the SILL into Arabic. After a close-to-the-original translation by the researcher, an English-Arabic translator assessed the translation against the source version. Then an Arabic linguist evaluated the translation for naturalness, clarity, and smooth reading. Finally, the translation was pre-tested by a group of Palestinian EFL learners, who were asked to feed back on the wording and clarity of the items and response scales. To provide guidance and support for researchers in the field, Gavriilidou and Mitits (2016) designed an adaptation protocol for adjusting the SILL, which "ensures high instrument reliability and validity and offers other researchers . . . a procedure that overcomes most of the problems entailed when instruments are used in different languages and cultures" (p. 600).

In addition to translation, other recommendations to adjust the SILL to fit specific research demands include removing or rephrasing individual strategy statements, for instance, depending on whether the research is conducted with EFL (English as a foreign language) or ESL (English as a second language) learners. The same measure can be applied if the categorization of SILL statements is unclear (i.e., if individual statements correspond with multiple strategy groups), or if the wording of the original statements is inappropriate for a specific group of participants or does not reflect the context in which the research is conducted (Hsaio & Oxford, 2002).

Gunning (1997) adapted the SILL to assess the LLS of young EFL learners at a primary school in Québec, Canada. She involved schoolchildren, consultants from Québec, and the author of the original SILL, Rebecca L. Oxford, in the development of the *Children's SILL*. In the design of the 30-item instrument, Gunning paid particular attention to "simplicity, comprehensibility to children, choice of concrete rather than abstract items, and random selection among redundant items" (Gunning & Turner, 2018, p. 267-268). The *Children's SILL* has been translated into English, French, Chinese, Spanish, and Indonesian and further modified to suit young language learners in different contexts.

Similarly, Ardasheva and Tretter (2013) developed a strategy inventory for school-aged English language learners (ELLs). The objective was to adapt and validate the original SILL to accommodate elementary, middle, and high school learners of ESL in the USA. As a first step, they simplified the wording of the original

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[7] The SILL has been translated into at least 17 different languages (Oxford, 1999). It is likely that the number has gone up in the 2000s but no updated count is available in the literature.

strategy statements. Then, taking into account the LLS literature and results from confirmatory and exploratory factor analyses (i.e., finding consistent correlations between SILL items), Ardasheva and Tretter developed the *SILL-ELL student form.* A group of experts (i.e., an early childhood educator, an elementary teacher with background in ESL, and an ESL teacher) supported the adaptation process. 28 items remained in the SILL-ELL student form, and 22 items were eliminated from the original SILL (see Ardasheva and Tretter, 2013, p. 488-489). Ardasheva and Tretter (2013) conclude that their shortened version of the SILL "has strong psychometric characteristics for use with school-aged ELLs to diagnose their use of LLS in six distinct categories." The authors describe the reduced length of the instrument as a "pragmatic value for busy classrooms" (p. 474).

Aside from adjusting to educational and cultural circumstances and factors concerning the first language and age of participants, particular research objectives may require the development of a less general and more targeted instrument in comparison to the original SILL. Teh, Embi, Yusoff, and Mahamod (2009), for example, modified the SILL to investigate the relationship between gender and LLS use of 457 Arabic students in Malaysia. The SILL was first translated into Malay to prevent misinterpretation of the instructions and the statements. Furthermore, another category of strategies was added to Oxford's six strategy categories, and some further adaptations were made. In total, the questionnaire comprised 60 strategy statements.

In addition to the above-mentioned possibilities for adaptation, the SILL can be adjusted to focus on a specific strategy type (e.g., memory strategies, social strategies) or language skill (e.g., reading, speaking). For example, the *Metacognitive Awareness Listening Questionnaire* (Vandergrift et al., 2006) is designed to be conducted after a listening task. Nakatani (2006) developed the *Oral Communication Strategy Inventory* (OCSI) and employed it in a mixed-methods study that aimed at identifying strategies that facilitate EFL learners' oral communication (Nakatani, 2010). The SILL and its adaptations have repeatedly been integrated into mixed-methods studies, which combine different research methods to support each other (e.g., Berkil, 2009; Bielak & Mystkowska-Wiertelak, 2018). Section 6 shows how the SILL fulfilled multiple purposes in a recent study that also employed a mixed-methods design.

6. The SILL in a mixed-methods study about LLS

The research study for my PhD dissertation (Amerstorfer, 2016) combined the SILL with other research methods in order to holistically investigate the situated strategy use of individual EFL learners in the context of cooperative learning. The five female participants who volunteered to take part in the study were first language

(L1) German speakers, between 14 and 18 years old, attending a vocational school in Austria that has a strong focus on learner cooperation and self-regulation (Wittwer, 2017). Data were collected in an initial round of semi-structured interviews, four weeks of in-class observations in combination with stimulated recall interviews, a set of questions to prompt written responses after the four-weeks of interviews and observations, and a final round of observations after one year to inquire about a specific issue that evolved during data analysis. This article exclusively focuses on the part of the study that involves the SILL (for further details on the mixed-methods design of the whole study, see Amerstorfer, 2018).

6.1. The SILL as data collection tool in the study

A minimally adapted German translation of the SILL was used in the first part of data collection, an initial interview with each individual participant. The original purpose of the SILL was expanded so that the inventory served three further purposes in addition to the quantitative evaluation of the participants' frequency of LLS use:

1. The SILL functioned as an icebreaker during the initial meeting with the participants, contributing to a pleasant interview atmosphere and establishing the foundation for a respectful and trustful relationship between participant and researcher.
2. As the SILL was administered at the beginning of the data collection procedures, it focused the participants' minds on the topic of LLS and thereby increased their awareness of LLS.
3. The selection of specific SILL statements for follow-up questions contributed to the acquisition of qualitative information about the individual participants' LLS use.

6.2. The implementation of the SILL in the study

Personal meetings with each individual participant marked the beginning of data collection. The meetings were held in German to prevent misunderstandings and to minimize anxiety. All interviews were audio-recorded and transcribed.

First, the participants received a general introduction about the aims of the study and the extent and nature of their involvement. The value of the participants' role in the project was explicitly stated, and the students were told that everything they volunteered to share with the researcher was important. All expressions of opinions, feelings, and thoughts were appreciated, taken seriously, and treated anonymously. In addition to data collection, the aim of the first personal meeting was to create an atmosphere of a respectful and trusting relationship.

The participants were made to feel free to speak their minds, and it was emphasized that a language barrier should not impede their willingness to share.

Then, the SILL was presented. The instructions were read out aloud, and it was stressed that there was no time pressure. The participants were asked to carefully read each strategy statement and to indicate which of the five options best applied. They were encouraged only to think about themselves and not about how others would rate the statements or how others would expect them to rate the statements. They were told that there are no right or wrong answers and that they could ask questions at any time. Finally, it was explained that the researcher was not testing the participants' abilities or knowledge but that she was only interested in the learners' individual preferences. No interview situation during the project was intended to cause any stress or anxiety, and the participants were expected to feel safe and respected.

After the administration of the SILL, the initial interview continued with a set of personal questions to establish holistic profiles of each participant. The questions concerned, for example, the participants' family situations, leisure activities, attitudes towards EFL, and enjoyment of cooperative learning. At the end of the interview, the ratings on the SILL were quickly scanned, and all items rated 1 (= *never or almost never true of me*) and 5 (= *always or almost always true of me*) were highlighted on the inventory for further investigation.

In the final phase of the interview, qualitative information in relation to the SILL was collected. The participants were asked why they had given particular statements the lowest or highest possible ratings. Not all of these follow-up questions resulted in verbal responses because sometimes the participants found it difficult to express their preferences or rejections in words. Some questions elicited a shoulder shrug, a facial expression, or a hand gesture rather than an explanation in words. Sabrina,[8] for example, gave the lowest possible rating to SILL item 20 ("I try to find patterns in English") but was not able to describe why the statement is not true of her. All responses, verbal and non-verbal, were treated sensitively and respectfully in order to maintain a positive relationship. To avoid any pressure on the students and therefore jeopardizing the trust between participants and researcher, further inquiry about non-verbal responses during the first interview was postponed to other opportunities during the four weeks of contact time at the school. The follow-up investigation of individual SILL statements revealed some very interesting details, as the next section demonstrates.

6.3. Examples of responses to individual SILL items

This section provides examples of SILL statements that were rated lowest (=1) or highest (=5) by the individual participants, followed by summarized explanations

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[8] To preserve anonymity, alias names are used.

why the participants (almost) never or (almost) always use these strategies. The examples are not indicative of the participants' overall frequency of strategy use or their preferred strategy types. Instead, the examples demonstrate the wealth of qualitative data that was collected through an investigation of the numbers on each end of the Likert scale. Some explanations refer to more than one strategy with the same high or low rating.

6.3.1. Strategy statements that are never or almost never true of . . .

Sabrina

SILL item 6: I use flashcards to remember new words.
Sabrina does not have time to prepare flashcards. Different strategies work better for her when studying vocabulary, for example, reading and simply trying to memorize new English words and phrases.

SILL item 26: I make up new words if I do not know the right ones in English.
This strategy is unimaginable for Sabrina. Instead of making up a new word, she would describe what she wants to say with other English words, and if that fails, she would rather use German than make up a foreign word that is unlikely to exist.

Stella

SILL item 6: I use flashcards to remember new English words.
Stella memorizes vocabulary very fast. Hence, flashcards are unnecessary for her, and preparing them would be too much effort.

Lisa

SILL item 4: I remember a new English word by making a mental picture of a situation in which the word might be used.
SILL item 5: I use rhymes to remember new English words.
SILL item 6: I use flashcards to remember new words.
SILL item 7: I physically act out new English words.
Lisa does not use strategies 4-7. Her preferred strategy for vocabulary learning is reading the sentences in which new words and phrases appear in a text. She rarely makes flashcards, and the ones she makes are exclusively used to study her other foreign language, Spanish. Lisa finds Spanish vocabulary much more difficult than English vocabulary.
SILL item 26: I make up new words if I do not know the right ones in English.
Lisa is amused at the thought of making up new words in English because an invented word is bound to be wrong. She prefers to look up unknown words in

a bilingual online dictionary. Lisa hypothesizes that if she did not remember a newly acquired word or phrase during an exam, she would write as much as she could remember. In such a situation, she would risk getting it wrong but making up a word from scratch is out of the question.

SILL item 28: I try to guess what the other person will say next in English.
Guessing what someone will say next does not make any sense to Lisa. Instead of guessing what her interlocutor will say, Lisa listens carefully and gives her conversation partners enough time to finish what they want to say.

SILL item 39: I try to relax whenever I feel afraid of using English.
In general, Lisa is not afraid of speaking English. In her head, she prepares the sentences or phrases she wants to say. She adds that she generally does not view talking in English as frightening.

SILL item 43: I write down my feelings in a language learning diary.
SILL item 44: I talk to someone else about how I feel when I am learning English.
Lisa does not like writing or talking about her feelings. When she is stressed because of an increased workload, she talks about it with a peer.

Paula

SILL item 3: I connect the sound of a new English word and an image or picture of the word to help me remember the word.
SILL item 4: I remember a new English word by making a mental picture of a situation in which the word might be used.
SILL item 5: I use rhymes to remember new English words.
SILL item 6: I use flashcards to remember new words.
SILL item 7: I physically act out new English words.
Paula never uses strategies 3-7 because she has her own way of studying new vocabulary. She writes new words and phrases five or more times to commit them to memory. She used to memorize example sentences for all new words,[9] but her strategy for vocabulary learning changed over time.

Christina

SILL item 43: I write down my feelings in a language learning diary.
Christina does not keep a language learning diary but sometimes she writes down situations that were easy or difficult for her. She emphasizes that she focuses on the positive and writes about *successful* language learning situations.

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[9] In a follow-up interview, Paula explained that her mother used to insist on written example sentences for new vocabulary.

6.3.2. Strategy statements that are always or almost always true of . . .

Sabrina

SILL item 11: I try to talk like English native speakers.
SILL item 12: I practice the sounds of English.
Sabrina is enthusiastic about the sounds of British English. She finds imitating a British accent "cool" and "fun." Even when she quietly reads a text to herself, she imagines British pronunciation.

SILL item 32: I pay attention when someone is speaking English.
Listening carefully is both important and interesting for Sabrina. She is aware that she may not be able to understand everything an English speaker says; nevertheless, she tries to understand as much as possible by paying careful attention. For Sabrina, listening to English speech has much potential for learning growth.

Stella

SILL item 1: I think of relationships between what I already know and new things I learn in English.
When Stella learns a new phrase in English, she thinks, "Ah! I've heard this somewhere before" or "This is related to something I already know." Creating such thought connections makes it easier for Stella to memorize new information.

SILL item 9: I remember new English words or phrases by remembering their location on the page, on the board, or on a street sign.
Stella often remembers the exact location of a new phrase on the page of her textbook and even what it says above and below it. This helps her retrieve information from her memory.

SILL item 19: I look for words in my own language that are similar to new words in English.
Stella often finds parallels between different languages. For instance, if she already knows a similar word in Spanish, it is easier to learn a new word in English.

SILL item 27: I read English without looking up every new word.
Instead of looking up every new word in a dictionary, Stella prefers reading the whole sentence and guessing from the context.

SILL item 39: I try to relax whenever I feel afraid of using English.
SILL item 40: I encourage myself to speak English even when I am afraid of making a mistake.
Before oral presentations, for example, Stella tries to calm down by reminding herself that making mistakes is ok and "not a tragedy." Stella's English teacher

promotes this attitude by telling the students to speak as much as they can and without worrying about mistakes. Making mistakes is part of the learning process.

Lisa

SILL item 22: I try not to translate word-for-word.
In Lisa's opinion, word-for-word translations are tedious and not very useful. She tries to grasp the context of a text and looks up individual words that are essential to understanding a text rather than translating every word.

Paula

SILL item 9: I remember new English words or phrases by remembering their location on the page, on the board, or on a street sign.
Paula does not purposefully memorize where on a page she sees a word or phrase. She is naturally able to remember the location of a word without making an effort. Even if she cannot remember exactly what the new vocabulary item was, Paula can tell where it is printed on a page. Paula explains that this ability is the reason why she writes new vocabulary repeatedly (see explanation for SILL items 3-7 above).

Christina

SILL item 10: I say or write new English words several times.
Christina writes new English vocabulary and German translations in her vocabulary book. When she studies vocabulary at home, she writes the new items several times. Then she says the new English phrases aloud and reads the German equivalents quietly. In a subsequent step, she covers up the English side of the vocabulary list to assess which phrases she can remember.

SILL item 40: I encourage myself to speak English even when I am afraid of making a mistake.
Christina tells herself motivating sentences like "You can do it!"

6.4. Close analysis of the examples

The participants' explanations for using or not using certain strategies provide profound insights that could not have been gained if the SILL had been the only medium for data collection in the study. As mentioned before, the SILL was used in addition to other methods, like in-class observations and stimulated recall to gain comprehensive information about each participant. This section focuses on the wealth of qualitative data that was obtained by asking questions about the highest and lowest possible ratings that were given to specific SILL statements.

As exemplified in section 6.3, the participants' responses to the SILL statements are often straightforward reasons regarding individual preferences. Sabrina

and Stella, for example, describe the rejection of SILL item 6 (the preparation of flashcards to remember new words) as too time-consuming (Sabrina) and too much effort (Stella). Nevertheless, other explanations are more elaborate and show how strategies are applied differently for studying two foreign languages. Lisa, for instance, points out that while she rejects flashcards in English, she makes them for Spanish because Spanish vocabulary is more difficult in comparison to English. Stella adds that in addition to looking for similarities between German and English (SILL item 19), she creates links between the two foreign languages she studies, that is, English and Spanish.

On many occasions, participants suggest substitutes for unsuitable strategy statements, which, however, can be used for different purposes. For instance, as an alternative for looking up every unknown word (SILL item 27), Stella guesses from the context. Lisa uses guessing from the context as an alternative to word-for-word translations (SILL item 22). The same strategy is utilized for two different purposes by the two learners. This demonstrates that strategies depend on personal preferences and that they are not tied to specific purposes. Moreover, strategies are flexible and can be adjusted to relevant influences. Strategic L2 learning depends by nature on a multitude of factors, such as individual learner preferences, but also features of the learning context and situational circumstances. A large number of interrelated influencing factors are in constant interaction with each other when strategies are selected and applied – or rejected and subsidized (for more on the flexible and dynamic nature of L2 learning, see, Amerstorfer, 2016; Gao, 2010; Larson-Freeman & Cameron, 2008; Mercer, 2012; Oxford, 2017; Wang, 2018).

Another finding of the analysis is that strategies often appear in combination with other strategies. This confirms previous findings, synthesized, for example by Cohen (2007) and Oxford (2011). Amerstorfer (2016) found that sometimes strategies are even only effective if applied in a specific sequence, exemplified in the participants' practices for vocabulary learning. Lisa and Paula generally reject the SILL items related to memory and use a sequence of other strategies to study vocabulary instead. Christina's response to SILL item 10 ("I say or write English words several times") is similar. She describes in great detail how she first writes new English words and their German equivalents several times and then tests her memory by covering the translations in the vocabulary book in a subsequent step. The data confirm that LLS rarely appear in isolation and that L2 learners meaningfully combine LLS by arranging them in specific sequences.

Psychological aspects of language learning have achieved much attention in the literature (see e.g., Dörnyei, 2005; Dörnyei & Ryan, 2015; Mercer, Ryan, & Williams, 2012; Williams, Mercer, & Ryan, 2015). Psychological influences on the participants' choice and application of LLS are noticeable in the reactions to some strategy statements. Sabrina and Lisa, for example, demonstrate affective

reactions to the idea of inventing new words in English (SILL item 26). They state that made-up words are unlikely to exist (Sabrina) and bound to be incorrect (Lisa), and offer alternatives such as rephrasing, using the L1 (Sabrina), and using a dictionary (Lisa). Furthermore, Lisa embeds the rejected strategy in a fictive situation by explaining how she would instead write down as much of a new English phrase as she could remember in a written exam situation. In addition to the importance of affect in language learning (MacIntyre & Gregersen, 2012; Williams, Mercer, & Ryan, 2015), Lisa's imagination of a hypothetical situation affirms the importance of context in strategic language learning.

Similar to the emotional reaction to inventing new words, Lisa expresses affect in her rejection of SILL item 28, namely, she finds that guessing what the other person will say next is silly. In Lisa's opinion, this strategy cannot possibly support a conversation in a meaningful way, so she substitutes guessing with a combination of patience and attention. Moreover, Lisa reveals supplementary information about her generally low level of L2 anxiety in connection to SILL item 39 ("I try to relax whenever I feel afraid of using English"), which is again an important aspect of psychology in language learning. Also linked to psychology is Christina's response to SILL item 43, in which she explains that she focuses on *successful* L2 learning situations. Interestingly, Lisa distinguishes between expressing her emotions and complaining about stress. She does not write her feelings in a learning diary, nor does she talk about her feelings when learning English (lowest possible ratings for SILL items 43 and 44). However, in the interview Lisa reports that she complains to her peers about the large workload in English and other school subjects when she feels stressed.

An example of a positive emotional reaction to SILL statements is Sabrina's account of how enamored she is of the sounds of British English and how she practices by imitation and imagination (SILL items 11 and 12). Likewise, SILL items 39 and 40 are positively connected to motivation in Stella's explanation of how she relaxes and encourages herself before an oral presentation in English. Additionally, Stella describes how the English teacher boosts students' confidence to talk without worrying about making mistakes. Similarly, Christina and Stella provide examples of what they say to themselves for encouragement. These examples show how LLS can improve learners' self-perception, confidence, and motivation (see Mercer & Williams, 2014, for further information).

Contrary to what has been described in section 4, some explanations for high strategy ratings signify an immense strategy awareness and self-reflection on the part of the participants. For example, Sabrina points out the potential of listening carefully to English speakers (SILL item 32); Stella highlights the supportive role of thought-connections and connections between languages to store new information (SILL items 1 and 19); and Stella and Paula are aware that knowing where a word is printed on a page enables the retrieval of information from memory (SILL item 9).

Paula actively exploits her awareness of the ability to remember the location of words and therefore repeatedly writes new words and phrases to memorize them.

This richness of qualitative information that was gained in the interviews by far exceeds the intended purpose of the SILL as a self-evaluation and research tool. The participants' explanations and reflections reveal much more than numerical frequencies of strategy application and tendencies regarding the preference of strategy types. In the interviews, the participants transcended the content-related boundaries of the SILL, added strategies that are not included in the fifty original statements, and created meaningful, situated connections. Furthermore, the participants' descriptions confirmed the importance of psychology in language learning and highlighted that strategic L2 learning is complex and flexible. The next section offers broad outcomes and possibilities for future research.

6.5. General outcomes and possibilities for future research

Inviting participants to elaborate on the SILL statements with the highest and lowest possible ratings disclosed deep and meaningful information about individual strategy preferences, confirmed known facts about LLS, and led to new conclusions about strategic L2 learning. The responses to the follow-up questions not only included non-verbal reactions like shoulder-shrugs, facial expressions, and hand gestures, uninformative answers such as "I don't know" or "because I always do it this way,"[10] but also detailed reasoning, elaborate explanations, and additional examples of strategic actions. The data analyzed in the previous section lead to the following general outcomes, some of which call for further research:

1. The study confirms that strategies are often used in combination with other strategies, as described, for instance, in individualized routines for vocabulary learning (for further information on how strategies appear together with other strategies, see, e.g., Cohen, 2007, 2014 and Oxford, 2011, 2017).
2. The study supports Oxford's (1990) statement that the strategies and strategy categories of the SILL interact with each other. Strategies from different SILL categories were combined with each other. Moreover, Oxford's SILL was complemented by additional strategies that are not included in the instrument, particularly as alternative suggestions for SILL statements that received low ratings.

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[10] As mentioned before, other occasions were used to further inquire about inconclusive answers to avoid any kind of pressure on the participants. The data presented in this article were obtained in the first of a series of interviews, which had as one of its goals the establishment of a trustful relationship between the researcher and the participants.

3. In general, connections play a very important role in L2 learning. In addition to connections between strategies and strategy categories, learners establish links between new language knowledge and previously acquired knowledge. This is true for knowledge of different languages, that is, the learners' L1 and other foreign languages, as well as knowledge gained in other school subjects,[11] and knowledge about the self.

4. The personal rejection of a strategy can result from the expected time and effort involved in its application. This particularly seems to be the case for strategies that produce physical outcomes (e.g., making flashcards, keeping a learning diary) in contrast to strategies that involve mainly cognitive activity (e.g., planning ahead) or verbal expression (e.g., practicing pronunciation, talking about learning processes with peers). Further studies are required to affirm this tentative conclusion.

5. Time and effort invested in strategic learning are linked to autonomy (e.g., not writing example sentences for new vocabulary unless someone requests it) and to an individually experienced demand (e.g., preparing flashcards for Spanish but not for English because one L2 is perceived to be more difficult than the other).

6. Strategic L2 learning and psychology are strongly related, as expressions of emotions, confidence, motivation, and anxiety demonstrate.

7. Participants are aware of their strategic actions, which proves that strategic L2 learning involves conscious thought. Learners have a goal in mind when they choose a strategy that was previously successful or a strategy that is expected to lead to an anticipated outcome. Likewise, it can be presumed that the rejection of strategies is also conscious to a certain extent. However, this assumption requires further investigation.

8. Strategic L2 learning depends on a multitude of influences. Individual learner differences (e.g., self-confidence, anxiety), immediate situational circumstances (e.g., the learning task, a cooperation partner), and the wider learning context (e.g., educational policies, cultural influences) play important roles. Hence, depending on the factors involved in a particular learning situation, two learners can use the same strategy for different purposes, or the same learner can use different strategies in similar learning situations.

9. The perceived effectiveness of a strategy and individual strategy preferences can change over time. One strategy can increase in popularity and

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[11] A different part of the study that is not reported in this article shows that the participants create links between EFL and what they learn in other subjects. Lisa, for instance, deducted the new English verb "to clone" from an IT class.

substitute for another one. These findings underscore previous reports of L2 learning as a complex and dynamic system.

10. The categorization of strategies is only meaningful to a certain extent. It is useful to organize strategies into categories as a guideline for data analysis (see Oxford, 2017, and Cohen, 2018, for further information on options for strategy categorization). However, the complexity and flexibility of strategic language learning can disaffiliate a strategy from a specific category.

Several of these outcomes need further research for verification. Moreover, the findings may inspire new studies, particularly regarding the complexity of strategic language learning, as has previously been explored by Gao (2010) and Wang (2018). The SILL-related outcomes of my PhD study (Amerstorfer, 2016) raise further questions as to how individual aspects of strategic L2 learning influence strategy selection and application. Other interesting projects could focus on particular areas of L2 learning, for instance, strategies for grammar or pronunciation learning. Finally, complementary to the selection and application of strategies, which has so far been the main focus of LLS-related research, studies about the rejection of strategies could lead to further important findings.

7. Conclusions

This paper has described how the SILL transformed from an evaluation tool for L2 learners and teachers into the most popular instrument in LLS research. The instrument convinces with its clear and understandable structural design and its easy handling for learners, teachers, and researchers. The SILL has withstood criticism. For instance, the use of parametric statistics (under appropriate instances) for Likert-scale instruments such as the SILL has been championed by experts with outstanding statistical sophistication. The SILL remains the most frequently used tool for quantitative data collection in LLS research. Moreover, this instrument is increasingly integrated into mixed-methods studies, as it can be easily adapted to suit specific research demands and contexts.

Adaptations of the SILL can take the form of a simple translation or involve multiple steps and drastic changes to the original version. Single SILL statements can be rephrased, removed, or replaced. However, the study in section 6 demonstrates that SILL items that would usually be considered as unsuitable for the research environment resulted in interesting findings that would not have been discovered if those statements had been altered. The research was conducted in a learning environment in which the main language is German and where English is studied as a foreign language. L1 English speakers were not available, so strategy statements such as "I pay attention when someone is speaking

English" (SILL item 32), "I look for people I can talk to in English" (SILL item 35), and "I ask for help from English speakers" (SILL item 48) were less suitable than in an ESL environment. Nevertheless, these statements were not excluded from the SILL and led to new knowledge that otherwise would not have been discovered, as Sabrina's explanation in relation to SILL item 32 demonstrates.[12] Therefore, the exclusion of strategies for reasons of inadequate suitability should be treated with caution.

Furthermore, despite the learning and research context, what is suitable for one person may not be suitable for another. Strategic language learning is strongly connected to personal preferences, as the rejection of several memory strategies by two of the five participants shows. Would a researcher exclude the SILL statements that refer to memory strategies from a questionnaire if a large number of participants had given those strategies low ratings in a previous study? Given the wealth of information the participants put forward as alternative strategies, an exclusion of those strategies would have been counterproductive. Low-rated and high-rated SILL statements both led to interesting findings. Strategy rejection should therefore be researched further as it seems to bear equal potential for new insights as strategy preferences do.

To maximize the qualitative information related to a participant's SILL ratings, follow-up interviews could inquire about all SILL statements instead of selecting the statements that received the highest or lowest possible ratings. Such an interview would without doubt reveal much information about a learner's strategic learning activities. However, the practical implementation would be very time-consuming. An interview that includes about 50 strategy statements would be much longer than one containing a few selected items, and the questions would become rather monotonous. These problems could have a negative impact on the participant's willingness to take part in the study, and the responses could suffer if the participant adopts an attitude of "let's get it over and done with." Furthermore, strategy statements with medium ratings may cause expressions of indifference or inconclusive answers; however, these are just speculations. The research design of the reported study with additional interview questions for strategies that were rated high or low resulted in authentic and individualized responses that positively contributed to the holistic profiles that were the central aim of this part of the study.

This article concludes that some SILL items may be unsuitable for the context or purpose of a study and that statements that relate to modern technology for L2 learning and teaching are lacking (though they are being added now). Such issues can be overcome by adapting the SILL, sometimes in a few simple

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[12] Note that only a selection of examples was included in this article.

steps. Ultimately, the SILL has not expired. It remains a useful self-evaluation tool and the most popular instrument in strategy research. Surely, the SILL will continue to contribute to the establishment of new knowledge in this complex field of research, especially if employed in combination with other research methods.

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