

Cross linguistic influence in adult L2/L3 learners:

The case of French on English Morphosyntax

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Abstract—The potential ways in which learning a second or third language can influence other languages in the mind of the (emergent) bilingual is an increasingly important issue given the international importance of foreign language learning. This study explored whether learning French as a foreign language influences knowledge of English morphosyntax in learners of L2 French with L1 English (n=21) and learners of L3 French with L2 English (n=9). Comparing these two groups allowed us to identify whether and to what extent backwards cross linguistic influence (CLI) are different depending on whether French is L2 or L3, and whether English is L1 or L2. Accuracy on tense-aspects of English morphosyntax was measured through two tasks (Grammaticality Judgement and Proofreading). Results indicated no inhibitive influence from L2 French to L1 English, with potential enhancement of explicit knowledge when compared to a control group of English-speaking participants with no French. In contrast, influence leading to inaccuracy was observed from L3 French to L2 English in that the L3 French learners made more errors in past simple and present perfect in the GJT. Results are discussed in the context of better understanding the nature of developing grammatical systems, together with implications for future work.

Keywords- cross-linguistic influence, language transfer, backward transfer, multi-competence, multilingualism, second language acquisition, third language acquisition, implicit knowledge, explicit knowledge

I. INTRODUCTION

The ‘monolingual’ is increasingly difficult to identify as multilingualism expands across the globe [1]. Consequently, the way in which knowledge of multiple languages might interact in the mind is of increasing interest both theoretically and practically. Such cross-linguistic influence (CLI) or language transfer¹ can be understood within [2]’s multi-competence model, which specifically explores the consequences of the simultaneous existence of two or more languages in one mind. Importantly, Cook’s model highlights that a second (L2) or indeed a third language (L3) does not develop in isolation of other existing linguistic systems, which consequently can lead to specific patterns of CLI. CLI has traditionally been considered within the direction of how the

first language (L1) might influence an L2 [3]. However, Cook’s model reminds us that CLI can be bi-directional: $L2 \leftrightarrow L1$ or $L3 \leftrightarrow L2$ or $L3 \leftrightarrow L1$. The present study focuses on whether L2 or L3 knowledge of French might influence (positively or negatively) either L2 or L1 English morphosyntactic knowledge.

II. LITERATURE REVIEW

A. Multi-competence

[2] proposed the notion of multi-competence to encompass the knowledge of all the languages present in a person’s mind. He later elaborated on this model and suggested a continuum of integration, from separation through interconnection to full integration (see Fig. 1). It is noteworthy that it is only for convenience that the figure presents the continuum for two languages; the multi-competence model ‘does not preclude multiple languages and multilingualism’ [1]:2.

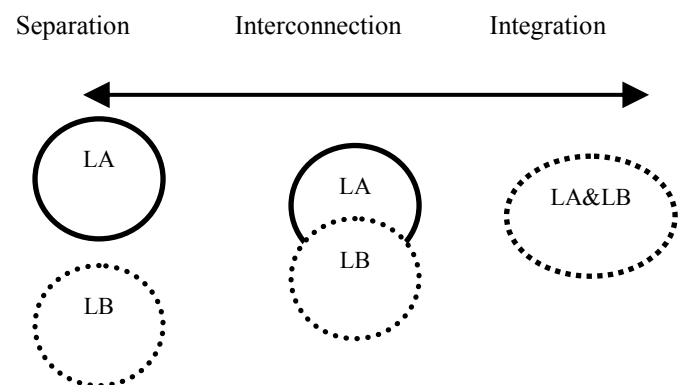


Figure 1: The integration continuum of possible relationships in multi-competence [1]: 9; [4]: 11

Separation refers to the development of the L2 as a separate linguistic system from the L1. [5] is one example of such autonomous development of two languages where simultaneous bilinguals’ English and French developed at similar rates to monolingual counterparts in terms of finite verb production, negation, and pronominal subjects. Acquiring some features of one language therefore, did not promote or inhibit the learning of similar features in another language and so these elements in the two languages developed, to some degree, in separation. In contrast, integration depicts the

¹ Some researchers prefer to use the term ‘transfer’, but given that our study does not examine particular language elements being transferred from one language to another, we would prefer using the term CLI in this paper to depict such influences between languages.

formation of one single system and is in line with the unitary language system hypothesis [6], suggesting one lexical system for both languages. Between the two ends of [4]'s continuum is a state of interconnection where two languages interact with each other thus facilitating CLI (see Section II B below).

[1] maintained that different linguistic structures and language systems can be represented at different points in the continuum thus potentially accounting for seemingly incongruent results regarding CLI in the literature. For example, [7] claimed that studies of L2 influence on L1 'could be best understood within the multicompetence framework' (175) because the framework depicts the possibility of influence between any (features of) languages in the mind of multilinguals and in any direction.

B. Cross-Linguistic Influence

The historical view of CLI occurring exclusively in a forward direction is well illustrated by [8] who defined such influence or transfer as 'resulting from similarities and differences between the target language and any other language that has been previously (and perhaps imperfectly) acquired' (27). There are numerous examples of forward CLI on a range of different linguistic features: L2 French on L3 Spanish middle constructions [9]; L2 Russian on L3 English relative clauses [10]; L1 Chinese on L2 English relative clauses [11]; and L2 English on L3 French Determiner Phrases [12] to name but a few.

However, in recent years, backwards CLI has gained some attention where a later acquired language can exert an effect on a previously acquired language [1]. Backwards CLI is the focus of this paper and is discussed in more detail below.

1) *L2 influence on L1*: There is a growing literature on L2 influence on L1. For example, [13] demonstrated that in primary school children, learning a foreign language can have a positive influence on children's developing L1 literacy skills. Most research examining CLI from L2 to L1 have focused on older learners (i.e. not children). Often such studies are carried out in the context of immigrants who had migrated to a country where they use their L2 predominantly (see [7] and [14] for review). Less common in the literature are investigations of L2 → L1 morphosyntactic influence in an L1 environment (the context of our study). [15] and [16] are among the few (perhaps only) studies conducted with such populations. [15] focused on middle constructions in French which involved the use of implicit agent. She compared 13 French monolinguals with 12 French-English bilinguals who primarily used French in their daily lives. A French Grammaticality Judgement Task (GJT) revealed that the bilinguals judged significantly more grammatical sentences as ungrammatical (e.g., imposing English syntax on French sentences) relative to the monolinguals. Furthermore, in correcting ungrammatical French sentences, bilinguals used significantly more passives, potentially attributable to the influence of L2 English since passives in French are infrequent relative to English.

In contrast to [15], [16] found no evidence for particular CLI effects of L2 on L1 in their study of Japanese, Spanish, and Greek university students studying English. Participants read 81 sentences targeting word order, animacy, case, and number agreement in their L1s and were asked to judge which one of the two noun phrases in any sentence was the subject. Despite some general differences between bi- and monolinguals which might be attributed to the nature of bilingualism, [16] argued that given there were no differences between the bilinguals and their monolingual peers on sentences targeting word order (given English is SVO and Japanese is SOV, for example), there was no observable CLI from English to the participants' L1.

The contradictory results of these two studies might be due to the different languages and the dissimilar morphosyntactic elements being investigated and highlight the need for further research given the somewhat mixed evidence for how the L2 might influence the L1.

2) *L3 influence on L1 and L2*: CLI becomes even more complex with the development of an L3. Just as L2 could influence L1, L3 could also exert an effect on previously learnt languages (L1 and/or L2). To the best of our knowledge, there have been only four studies to date investigating backwards CLI from the L3: [17], [18], [19], and [20], each of which examined the effect of L3 on L2 in an L1 environment. Although one of the aims of the present study was to deal with the effects of L3 on L2 in an L2 environment, these studies were the closest one could find from the L3 backwards CLI literature. Apart from [17] who researched on children, all the other three studies on adult learners are reviewed below.

[18] examined whether German influenced the use of L2 English relative clauses in 60 L1 Chinese-L2 English-L3 German university students in comparison with 60 students without L3 German in Taiwan. Specifically, the study explored whether learning L3 German could enhance the correctness in placing the relative clause after the noun it modifies, stemming from the fact that in both German and English the relative clause follows the noun but in Chinese, it precedes the noun. Nonetheless, no difference was found between the L3 German group and the comparison group on any of the 3 measures (GJT, translation and sentence combination tasks).

The absence of differences could be due to task limitations. For instance, the GJT consisted of unequal number of grammatical and ungrammatical sentences. Also, some ungrammatical sentences consisted of more than one error, and some errors were not relative clause errors, thus correctly identifying ungrammaticality could in some cases be carried out without having to tap into relative clause knowledge. For example, a participant could judge 'the boy which you looking for were is here now.' as ungrammatical since 'which' is used to denote a human antecedent where it should be 'who'. Furthermore, there were no distracters in the GJT which could have also influenced participants' responses.

In contrast to the nil effect in [18], [19] did find CLI from L3 French to L2 English relative clauses. He recruited 31 L3

French Hong Kong university students in comparison with a control group with similar language backgrounds – L1 Cantonese and L2 English but no French. It was hypothesised that French learners might use relative clauses differently due to the contrast between French and English. First, they might prefer using full subject-extracted relative clauses such as ‘the lady who/that wants to marry John’ ([19]: 47) as opposed to reduced relative clauses such as ‘the lady standing there’ ([19]: 47) with the use of present participle because the latter structure is infrequent in French. Secondly, French learners might write direct-object-extracted relative clauses employing the relative pronoun which is optional in English but obligatory in French. An example would be the use of that/who/whom in the sentence ‘the lady (that/who/whom) John wants to marry’ ([19]: 47) because directly translating the sentence to French would require the use of the relative pronoun *que*. Thirdly, French learners might use preposition-piping instead of preposition-stranding in the production of indirect-object-extracted relative clauses. [19] gave the example of: ‘la société pour laquelle je travaille (the society for which I work) [and] la femme dont je parle (the lady to whom I talk)’ (48). While in English we can either use a stranded preposition to write the sentence: the society which I work for and the lady whom I talk to, or use pied-piping as in the literal translation of the structure in French, a piped-preposition or a special relative pronoun such as *dont* is obligatory in French. These predictions were confirmed through the use of a picture elicitation task on written production of relative clauses since the predicted forms were identified on subject-extracted and direct-object-extracted relative clauses but not with preposition-piping [19]. This lack of influence on preposition piping could be due to the fact that very few instances of pied-piping were actually found.

[20] explored the effect of L3 German on L2 English tense-aspect knowledge where L3 German learners were predicted to over-use the English present perfect to refer to the past since in German both the preterite and perfect form can be used to denote a past event which has no connection to the present moment. 12 Hong Kong university students of L3 German were recruited as the experimental group and 11 students with no German formed the control group. A writing task revealed 16 instances of non-target use of present perfect, all from the experimental group. Additionally, in completing a GJT, the experimental group judged the ungrammatical present perfect items as grammatical significantly more than the control group, suggesting that these participants’ tense-aspect use in English was influenced by German.

The fact that there are so few studies which have investigated these issues of CLI highlight the marked contrast between how much we know about how linguistic systems interact with each other. Furthermore, those studies that have been carried out have yielded mixed results at best. To that end, the present study was designed to explore this area further.

C. Tense-aspect in English and French

The linguistic features under investigation in this study are the present perfect and the past simple in English, and the *passé composé* and the *imparfait* in French. Given that CLI is often assumed to arise from similarities and differences between languages [8], these particular linguistic features were

selected due to their similarities in form yet differences in usage.

The *passé composé* in French is formed by conjugating the verb ‘to have’ or ‘to be’ plus the past participle (e.g., J’ai mangé or Je suis parti). With respect to its form, the *passé composé* in part resembles present perfect in English which is conjugated with the verb ‘to have’ plus past participle (e.g., I have eaten). However, the more accurate translation of ‘J’ai mangé’, for example, would be ‘I ate’ (i.e., the simple past) not ‘I have eaten’. As for the *imparfait*, the verb is conjugated based on the relevant rules (e.g., Je mangeais) and while formally it resembles more the past simple in English in that the verb phrase contains only one word, it expresses a slightly different meaning (see description below).

Regarding their usage, in English, the past simple is used to refer to finished events, while the use of the present perfect denotes finished events connected with the present [21]. Therefore, we can say ‘I broke my leg’ using the past simple (which could denote an event that happened as recently as yesterday or many years in the past). However, the present perfect denotes an event that happened in the past that is still relevant somehow to the present as in ‘I’ve broken my leg’ (and it is still broken) [21].

In French, the *passé composé* is used to refer to a completed past event and also an action in the past whose effect is still present [22]. The *imparfait* is used to ‘describe ongoing past events without reference to a time of starting or finishing’ and ‘habitual action in the past’ ([22]: 239). However, if the event or action beginning in the past is still going on at the time of speaking, the present tense is used in French [23]. For example, (1) the past simple in English can be translated to French using the *passé composé* (2). However, with the suggestion of habits in the past, the past simple in English can also be expressed by the *imparfait* in French as illustrated by (3) and (4) below.

- (1) I finished the homework yesterday.
- (2) J’ai fini le devoir hier.
- (3) When I was young, I ate ice-cream every day.
- (4) Quand j’étais jeune, je mangeais de la glace tous les jours.

The present perfect does not map onto one single tense-aspect in French either. The sentence in (5) which uses English present perfect can be expressed by both *passé composé* (6) and the present (7) with different focus and meaning expressed.

- (5) I have taken French classes for 3 years.
- (6) J’ai pris des cours de français pendant 3 ans. (With a focus on the result of my knowledge of French after taking French for 3 years, although I am not continuing with French now.)
- (7) Je prends des cours de français depuis 3 ans. (With a suggestion that I am still continuing with the course right now and in the future.)

The English past simple and present perfect can be translated into French using different forms. Similarly, the

French *passé composé* and *imparfait* can also be translated to English using different forms. For instance, with *passé composé*, the sentence in (2) can be translated into (1) using the past simple and (6) could be expressed by present perfect. With *imparfait*, the sentence in (4) can be expressed using past simple as in (3) or with forms such as ‘I used to eat ice-cream every day’. Taken together, there is no straightforward one-to-one mapping of tense-aspect features between English and French with respect to past events. With comparable forms but contrastive meaning, these target tense and aspectual linguistic features in French might exert some influence on participants’ use of English.

D. Summary

In the light of the multi-competence model proposed by [1]; [2]; [4], CLI is not only possible, but is a predictable consequence of having multiple linguistic systems within the mind of the multilingual. While knowledge of L1 might be influenced, that of L2 might also be susceptible to change through the learning of an L3. However, there is a considerable lack of literature on CLI, particularly from L2 to L1 in an L1 environment, and from L3 to L2 in an L2 environment. It is important, therefore, that these issues receive more research focus as bi- and multilingualism is these days the norm, not the exception. We therefore need to better understand the way(s) in which languages interact within the mind of the multilingual. In this paper, the population under investigation was formally taught adult students learning the L2/L3 within a higher education setting, chosen since formal instruction in adulthood is a very common context in which language learners develop competence in their L2/L3. Nonetheless, we recognise that results of such a context as the one in our study are unlikely to be generalizable due to the small sample size and lack of random sampling from the population. It is hoped, however, that this study will serve as a basis leading to more systematic and detailed examinations of factors that lead to or constrain CLI across languages in this, and other language learning contexts.

E. Research questions

In light of the research gaps discussed above, this research set out to answer the following research questions (RQs):

(RQ1) Does learning French as L2 in an English environment influence the performance of adult multilinguals on L1 English present perfect and/or past simple in a GJT and/or proofreading task?

(RQ2) Does learning French as L3 in an English environment influence the performance of adult multilinguals on L2 English present perfect and/or past simple in a GJT and/or proofreading task?

III. METHODOLOGY

A. Overview

This exploratory study explored the effect of learning French (either as L2 or L3) on English morphosyntax with adult multilinguals. Attempting to measure the possible CLI in the tense-aspect discussed in section II.C in a more comprehensive way, this study implemented a timed GJT and a proofreading task, chosen to tap into different degrees of

implicitness / explicitness of language knowledge where it was thought that the timed GJT would tap into more implicit processes whereas the proofreading task would tap into more explicit knowledge. Having more than one measure is useful since the pressures of the task itself may lead to different outcomes. It is conceivable, for example, that knowledge of one language could influence performance in another, but only be observable on more implicit (or explicit) language tasks.

B. Sampling frame and participants

Two experimental groups consisting of 21 and 9 participants respectively were recruited². All participants were studying French at a language school in a city in the UK. Only students with proficiency levels of intermediate or higher were selected to ensure that all participants had learnt the *passé composé* and the *imparfait* in French, as suggested by the syllabus developed by the language school – the two tense-aspects were taught at earlier levels and they were revised in the beginning of lower-intermediate classes. Experimental group 1 consisted of 21 (14 female and 7 male) L1 English speakers learning French as L2. Their nationality varied: British, American, Australian, Canadian and Irish. Their mean age was 26.85 years (range: 19-43). All of them started learning French in primary or secondary school and some of them had rather high proficiency in French – as reflected by their report of using French in daily conversations with friends, reading books and watching television programmes. The second experimental group consisted of 9 (3 female and 6 male) L2 English speakers learning French as an L3. It was a heterogeneous group with mixed L1s – Thai, German, Dutch, Spanish, Japanese, Russian and Kutchi. Their mean age was 25.90 years old (range: 19-40). Almost all of them started learning French in secondary school, with only one exceptional case where the participant started French in primary school. Still, it was confirmed through a background questionnaire that all of them learnt English as L2 and French as L3. Additionally, the participants in this group reported that they were near-native or very advanced in L2 English and they used English almost exclusively in their daily life.

We also included a comparison group consisting of 17 (8 female and 9 male) native speakers of English who had minimal knowledge of French. Some of them knew very basic French vocabulary such as *bonjour* ‘good day’, but they were the closest to nil knowledge in French in the region as one can get. Their mean age was 22.60 years old (range: 19-28) and they were mainly American and British. Some participants knew other languages such as Spanish and German, but most of them were only beginners in the languages, with a few exceptions who claimed that they were intermediate.

There are clear limitations to these recruited samples. First, having only 9 participants in the L3 French experimental group could undermine the external validity of the findings. However, if there are statistically significant results found even with such a small sample, it could be indicative of a robust finding – observable with even a small sample of 9 individuals. Furthermore, within the context of research such as this,

² We were aiming to have equal numbers of participants across the experimental groups but unfortunately it proved difficult within the context of this study (i.e., the language school).

sample sizes tend to be relatively small, (e.g., [20] only recruited 12 and 11 participants in their experimental and control groups respectively). Consequently, the small sample of the present study could still shed some light on the nature of CLI in adult L3 learners. Secondly, although the heterogeneous L1 background of the L3 French experimental group and the knowledge of other languages of the comparison group could add an unwelcome additional variable to the research, the background questionnaire confirmed that the participants used English almost exclusively in their daily life. Given that recency is one important variable which predicts CLI ([24]; [25]) the fact that the participants in this study were predominantly using English further supports the notion that these other extraneous languages might not exert any strong effects of CLI on English.

C. Materials

A timed GJT and a proofreading task were used to measure more implicit (GJT) and explicit (proofreading) language performance respectively. As aforementioned, both tasks were used in case CLI was only observable on either implicit or explicit tasks – the use of both ensures maximum likelihood of observing CLI.

1) *Timed GJT*: The GJT is not without controversy (see e.g., [26]; [27]), particularly regarding its reliability. For instance, [27] found that re-testing the same learner with the same set of sentences could yield different results, and his Think-Aloud Protocol revealed that learners used a range of different strategies in evaluating the grammaticality of the sentences – from using ‘feel’ (intuition) to trying to access explicit knowledge to simply guessing. Such findings have given rise to another criticism that what the GJT is actually testing remains uncertain. However, most of these criticisms are only really relevant to an untimed GJT. In the present study, a timed GJT was used to tap into implicit knowledge (c.f. [28]). [29] and [30] also suggested the importance of time in GJT. The most rigorous support was perhaps made by [31] who administered a timed GJT and an untimed GJT together with other tests – imitation test, narrative test, and metalinguistic knowledge test – and by carrying out a principal component factor analysis was able to identify that tests loaded differently on two factors which could capture the different constructs of implicit and explicit knowledge. Whereas the grammatical sentences and ungrammatical sentences of the untimed GJT appeared to be measuring implicit and explicit knowledge respectively, the timed GJT did not provide such a contrastive picture. The results of [31] showed that timed GJT is a reliable instrument which is likely to be measuring implicit knowledge of participants. In light of these arguments a timed GJT was selected to be part of the assessment.

The timed GJT (see Appendix 1) consisted of 24 sentences randomly ordered into two versions to minimise ordering effects within task. They were composed of eight to ten words such that participants could read the entire sentence relatively quickly. Half of them tested the target structures and the other half were distracters. Moreover, there was an even split

between grammatical and ungrammatical sentences; and each ungrammatical sentence consisted of only one error. Table I summarizes the distribution of sentences in the task.

TABLE I. DISTRIBUTION OF SENTENCES IN GJT

	Error types	Grammaticality of sentences	Tokens
Target Structures	Present perfect	Grammatical	3
		Ungrammatical	3
	Past simple	Grammatical	3
		Ungrammatical	3
Distracters	Other error types such as inflections, continuous aspect, and who/which distinction	Grammatical	6
		Ungrammatical	6

The sentences were presented on the screen of a computer individually, each for 3 seconds and with a 5-second interval between each sentence for participants to indicate their responses according to a 4-point Likert scale printed on a task sheet. The 4-point scale ranged from 1 denoting totally ungrammatical to 4 totally grammatical. This was an attempt to build on [32]’s study allowing responses to GJT as grammatical, ungrammatical or not sure. It is arguable that despite being unsure, participants still had a ‘feeling’ of it being grammatical or ungrammatical based on their implicit knowledge. Therefore, the two options between totally ungrammatical and totally grammatical were set up to eliminate guessing.

Previous research has allowed different times for judgement: [28] gave 3 seconds to high school and adult French L2 learners, [32] 3.5 seconds to adult English L2 learners, and [31] 1.8 to 6.24 seconds to adult English L2 learners, which was 20% more than what native English speakers required. It seemed justifiable, therefore, to allow 3 seconds for viewing the sentences in the present study given participants were either native speakers of English or very advanced L2 English users. Since participants in this study were asked to indicate their response on a 4-point scale on a task sheet, 5 seconds were provided in which participants could make their response.

2) *Proofreading task*: According to [27], tasks that involve the location and correction of errors are likely to be testing explicit knowledge. The proofreading task (see Appendix 2) was thus set up as a more explicit measure of participants’ knowledge of morphosyntax. It consisted of a passage which included errors printed on paper where participants had to locate and correct the errors. There were 30 errors in total: 8 of them featured the target structures, 5 erroneous use of present perfect and 3 past simple. The remaining 22 errors were distracters which involved, for instance, spelling, the use of capital letters, relative pronoun, and subject-verb inversion in questions. Both tasks were piloted to ensure they were appropriate for the target sample.

D. Research procedure

Participants performed the tasks individually, the order of which was counterbalanced where half of the participants in

the experimental groups did the timed GJT before the proofreading task and the other half did them in the opposite sequence.

IV. RESULTS

A. Timed GJT

The measures of interest on the timed GJT were the total ratings obtained by summing the ratings for: (1) the 3 ungrammatical sentences with the use of present perfect; (2) the 3 grammatical sentences with present perfect; (3) the 3 ungrammatical sentences with past simple; (4) the 3 grammatical sentences with past simple; (5) all the ungrammatical sentences; (6) all the grammatical sentences. Table II presents the means and SDs of these measures. Measures (1) to (4) each consisted of three target sentences and the maximum rating that could be obtained was 12: if the three sentences were all judged as totally grammatical and rated at 4 by the participant; the minimum rating was 3: if they were all judged as totally ungrammatical and rated at 1. Measures (5) and (6) each consisted of twelve target sentences so the maximum and minimum ratings were 48 and 12 respectively.

TABLE II. DESCRIPTIVE STATISTICS OF THE GJT

Measure	Mean (Standard deviation)		
	Group 1: L1-English- L2-French (n=21)	Group 2: L2-English- L3-French (n=9)	Group 3: L1-English, no French (n=17)
(1) Ungrammatical present perfect	4.19 (1.69)	6.44 (2.35)	4.53 (1.55)
(2) Grammatical present perfect	11.86 (0.36)	10.78 (2.05)	11.18 (1.07)
(3) Ungrammatical past simple	5.86 (2.13)	7.89 (1.90)	5.47 (2.03)
(4) Grammatical past simple	10.67 (1.28)	10.56 (1.33)	11.12 (1.11)
(5) All ungrammatical	19.81 (4.52)	23.89 (5.84)	19.29 (4.58)
(6) All grammatical	42.24 (2.86)	41.56 (4.80)	41.82 (3.21)

In order to compare the performance between groups in each of these six measures, normality and homogeneity of variance were first examined using Shapiro-Wilk test and Levene’s test respectively. With measures (3), (5), and (6) satisfying both conditions; a one-way ANOVA for each of the measures was conducted to explore potential group differences. In contrast, measures (1), (2), and (4) did not satisfy either one or both conditions. Still, for comparison sake, parametric and non-parametric tests – one-way ANOVA and Kruskal-Wallis test were conducted for each of the measures separately, and both analyses yielded the same results.

Table III indicates a significant effect of group on measures (1), (2) and (3). To find out where the differences lay, post-hoc Scheffé tests were conducted. For measure (1), a lower mean suggested that participants were better at judging the grammaticality of the ungrammatical sentences, where group 1 outperformed group 2 ($p < 0.05$), and group 3 outperformed group 2 ($p < 0.05$). With measure (2), no significant differences were identified. Regarding measure (3), again, a lower mean suggests that participants were better at judging the

ungrammatical sentences as ungrammatical where group 3 outperformed group 2 ($p < 0.05$), and where the advantage of group 1 over group 2 was also approaching significance ($p = .056$).

TABLE III. ONE-WAY ANOVA AND KRUSKAL-WALLIS FOR MEASURES OF THE GJT

Measure	Degrees of freedom (df)	F value	Significance value (p)
(1) Ungrammatical present perfect	2, 44	5.235	*.009 (*.028 for Kruskal-Wallis)
(2) Grammatical present perfect	2, 44	3.514	*.038 (*.044 for Kruskal-Wallis)
(3) Ungrammatical past simple	2, 44	4.357	*.019
(4) Grammatical past simple	2, 44	.866	.428 (.420 for Kruskal-Wallis)
(5) All ungrammatical	2, 44	2.976	.061
(6) All grammatical	2, 44	.864	.864

Taken together, the GJT showed a consistent pattern where groups 1 and 3 are largely similar in their more implicit morphosyntactic performance. Group 2, on the other hand, had lower scores than group 1 and 3 in accurately judging ungrammatical present perfect and past simple items as ungrammatical. However, given their comparable overall performance in judging all the ungrammatical sentences, one could argue that group 2 had particular difficulties in the present perfect and past simple items.

B. Proofreading task

The proofreading task was coded in terms of (1) the score obtained for identifying and correcting the 5 errors with non-target use of present perfect, (2) the 3 non-target uses of past simple, and (3) the total score obtained for correcting all the 30 errors. All 30 items were included in the analysis to identify whether it was only the present perfect and past simple which showed effects of CLI. To put it another way, if the groups had significantly different total score obtained, the groups could be argued to be fundamentally different in terms of their more explicit knowledge in English and it would be difficult to make claims on CLI effects specifically in present perfect and past simple.

One mark was given for each error the participant identified and accurately corrected. However, provided that there is usually more than one way of making a correction, inter-rater reliability was established on 19% of the total number of proofreading tasks (9 out of 47) where the Cronbach Alpha of the two raters was .92, representing a high reliability. Table IV summarizes the descriptive statistics of the proofreading task measures.

TABLE IV. DESCRIPTIVE STATISTICS OF THE PROOFREADING TASK

Measure	Mean (Standard deviation)		
	Group 1: L1-English- L2-French (n=21)	Group 2: L2-English- L3-French (n=9)	Group 3: L1-English, no French (n=17)
(1) Non-target use of present perfect	4.71 (0.56)	4.00 (0.87)	4.41 (0.80)
(2) Non-target use of past simple	2.29 (0.78)	1.44 (0.88)	2.00 (0.71)
(3) Total score	22.90 (2.74)	21.11 (2.15)	21.71 (3.37)

Similar to the analysis of the GJT, Shapiro-Wilk test and Levene's test indicated that only the total scores measure satisfied the conditions of normal distribution and homogeneity of variance hence a one-way ANOVA was conducted on this measure. For the remaining two measures both a Kruskal-Wallis test and a one-way ANOVA were conducted and unlike the GJT task, contradictory results between the parametric and non-parametric analyses with the non-target use of present perfect were found (see Table V).

TABLE V. ONE-WAY ANOVA AND KRUSKAL-WALLIS FOR MEASURES OF THE PROOFREADING TASK

Measures	Degrees of freedom (df)	F value	Significance values (p)
(1) Non-target use of present perfect	2, 44	3.239	*.049 (.058 for Kruskal-Wallis)
(2) Non-target use of past simple	2, 44	3.710	*.032 (*.048 for Kruskal-Wallis)
(3) Total score	2, 44	1.494	.236

With (1) the non-target use of present perfect, the p value obtained from the Kruskal-Wallis test approached significance ($p=.058$). For the sake of comparison, the parametric ANOVA was also carried out and indicated statistical significance: $F(2, 44) = 3.239$, $p < 0.05$, suggesting possible differences across groups. A post-hoc Scheffé test suggested group 1 was nearly significantly outperforming group 2 ($p=.052$). Furthermore, significant differences were found between groups with the measure of non-target use of past simple: $F(2, 44) = 3.710$, $p < 0.05$. A post-hoc Scheffé test showed that the effect was due to the group 1 scoring higher than group 2 ($p < 0.05$). Finally, no significant difference across groups was found with the total score obtained.

Summing up, where there were differences in the proofreading task, they were in favour of group 1. Interestingly, although both groups 1 and 3 were English L1 speakers, group 1, who had L2 French, was descriptively outperforming group 3 the comparison group. Further, only group 1 outperformed group 2 in identifying and correcting the ungrammatical present perfect and past simple items.

V. DISCUSSION

A. Does learning French as L2 in an English environment influence the performance of adult multilinguals on L1 English present perfect and/or past simple in a GJT and/or proofreading task?

The results of the GJT suggested that the L2 French group performed similarly to the comparison group (with no French) in judging ungrammatical present perfect sentences, pointing to nil CLI effects on present perfect in their implicit knowledge. With the proofreading task which tapped into more explicit knowledge, no significant differences were found between the L2 French group and the control group. However, it is noteworthy that the L2 French group very nearly statistically outperformed the L3 French group. One might also anticipate that the comparison group would also outperform the L3 French group yet this was not the case. The lack of statistical significance between the L2 French and comparison group could be due to the small number of participants and test items.

With past simple, there was no significant difference on the GJT between the L2 French group and the comparison group. Similarly, no significant difference was identified on the proofreading task. The only significant difference with reference to correcting erroneous past simple items was identified between the L2 French group and the L3 French group, with the former outperforming the latter. Similar to the analysis above, even if such an advantage for the comparison group might have been expected (due to the comparison group's lack of knowledge of French there would arguably be no opportunity for L2/L3 French to influence their performance). However, the comparison group did not have an advantage over the L3 French group perhaps signalling some very subtle yet potential effect of the L2 French group doing better than the comparison group. Clearly, however, such a notion is merely speculative and must be treated accordingly.

In sum, no over-use of present perfect and past simple was identified with L2 French learners. However, whether L2 French could heighten the explicit knowledge on present perfect and past simple demands further research.

B. Does learning French as L3 in an English environment influence the performance of adult multilinguals on L2 English present perfect and/or past simple in a GJT and/or proofreading task?

The GJT showed that the L3 French group underperformed relative to the comparison group in judging ungrammatical present perfect and past simple items. This observation could simply be due to the fact that for the L3 French participants English is the L2, not the L1 and therefore their knowledge of and proficiency in English is certainly likely to be different if not minimised relative to the L1 English groups. Nonetheless, the L3 French learners were very advanced users of English and it is therefore unlikely that they had not acquired these two tense-aspects in English. Moreover, the total ratings of judging all ungrammatical sentences and all grammatical sentences revealed no significant differences across groups, which suggested that the L3 French group was comparable to the comparison group in terms of their implicit knowledge of these linguistic features overall, but they had particular difficulties in

judging ungrammatical present perfect and past simple sentences. We very tentatively suggest therefore that learning L3 French might indeed have led to the over-use of the two structures in L2 English in a more implicit task. Such results were in line with [20] who found L3 German participants misjudged ungrammatical present perfect sentences as grammatical significantly more than the control group.

In contrast, the proofreading task measuring more explicit knowledge indicated no difference between the L3 French group and the control group in all the measures. Such a finding is interesting because despite having weaker implicit knowledge, the L3 French learners did comparably well as the native English speakers in the comparison group in their explicit knowledge. Table VI summarizes the findings and answers to the research questions.

TABLE VI. SUMMARY OF FINDINGS AND ANSWERS TO THE RESEARCH QUESTIONS

Research questions	Answers	Justification
(RQ1) Does learning French as L2 in an English environment influence the performance of adult multilinguals on L1 English present perfect and/or past simple in a GJT and/or proofreading task?	No, but potential enhancement in explicit knowledge.	No difference between the L2 French and the comparison group, but only the L2 French group outperformed the L3 French group on past simple (statistically significant) and present perfect items (very nearly approaching significance) in the proofreading task.
(RQ2) Does learning French as L3 in an English environment influence the performance of adult multilinguals on L2 English present perfect and/or past simple in a GJT and/or proofreading task?	Yes only in the implicit knowledge test (GJT) of both present perfect and past simple, but not in the explicit task (proofreading).	The L3 French group did not differ from the comparison group in the total score of the GJT but it performed significantly worse than the comparison group in ungrammatical present perfect and past simple sentences. Furthermore, no difference between the L3 French group and the comparison group was found in the proofreading task.

C. Limitations

This study adopted a convenience sampling method with only one sampling frame in one city in the UK. The sample therefore in no way represents the wider population of French learners in general and we were not able to control for potential (and indeed likely) confounding variables such as age, gender, and knowledge of other languages in this study. These limitations were further exacerbated by the small number of participants taking part. Nonetheless, despite the small sample size, we still observed significant differences between groups in a number of measures which could be indicative of quite robust effects considering the weaknesses of this design. Therefore, at the very least we feel these results provide a springboard from which further research should be carried out examining more precisely the nature of CLI in adult multilinguals.

Other limitations of this study relate to the lack of a more appropriate control group against which the L3 French group could be compared. Ideally, we would have recruited a control

group which matches the language backgrounds of the L3 French group – a heterogeneous L1 group with L2 English but no L3 French. Unfortunately this was not possible. Nonetheless, by comparing the L3 French group with the comparison group such as it was, we did observe similar performance in their overall score of the GJT and all measures of the proofreading task. The only disadvantage of the L3 French group was the judgement of ungrammatical present perfect and past simple in the GJT. Such results suggest comparable implicit and explicit knowledge of the L3 French group with the native English speakers with no French. The L3 French group did, however, have particular problems with the implicit knowledge of present perfect and past simple, which suggests potential CLI effects.

The timed GJT may also have proved to be problematic in that allowing 3 plus 5 seconds might have led some participants to use the 5 additional seconds to think explicitly about the sentences, contradicting the purpose of the task. However, based on observation during data collection, participants only had sufficient time to move their eyes from the computer screen to the answer sheet, search for the appropriate box representing their judgement and tick it, and look at the computer screen again for the next question to come in the five seconds allotted per trial. We feel it is less likely, therefore, that they really had sufficient time to engage explicitly with this task.

VI. CONCLUSIONS

While the study reported here is exploratory and has a number of limitations, the findings are nonetheless interesting and indicative, and we believe justify a call for greater research attention in this area. First, the relationship between the performance of different groups in the timed GJT and the proofreading task varied. For example, the L3 French group did worse than the comparison group in judging ungrammatical present simple and past simple items in the timed GJT but did similarly in correcting the non-target use of these two tense-aspects in the proofreading task. This finding suggests the differences between implicit and explicit knowledge where participants with good implicit knowledge may not necessarily have the same level of explicit knowledge for the same linguistic features.

With reference to the more implicit GJT, although this study revealed no CLI effects on L1 English past simple, the two previous studies – [15] and [16] examining CLI effects from L2 to L1 in an L1 environment yielded contrastive results. More research, therefore, has to be done to reveal what language elements might be more vulnerable to such CLI, representing the interconnection stage in the multi-competence model. L3 French learning could exert an influence on the implicit knowledge on L2 English past simple and present perfect. Our study is the first study looking at CLI from L3 to L2 in an L2 environment and our results indicate that much further study is required.

Perhaps even more striking is that explicit knowledge of L1 English past simple could be enhanced by L2 French. Previous research has found contrastive results with regard to the differences of explicit knowledge between multilingual and monolingual children. For example, [33] used an oral GJT and

found no difference between bilinguals and monolinguals in their L1 explicit knowledge whereas [34] found an advantage of bilinguals over monolinguals in explicit knowledge when they asked children to form past-tense of non-words. The idea proposed by [35], that heightened metalinguistic awareness effects differ for different linguistic structures, might reconcile these incongruent findings. Further research on potential multilingual advantages on explicit knowledge should be done to reveal what linguistic knowledge in what languages with what learners – adults or children under the context of classroom instruction or naturalistic environment, might show such advantages. With the L3 French group, it is unclear whether explicit knowledge was enhanced or not given the comparable performance with the comparison group.

As a whole, this study attempts to fill some gaps in the field of second and third language acquisition, but left more questions unresolved. Given the lack of literature especially in backwards CLI from L2 to L1 and in L3 acquisition, more research has to be done to extend our understanding on these important aspects in developing multilingualism.

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APPENDIX 1: GJT

Test items in the timed GJT:

Questions 1-3 involve the non-target use of present perfect.

Questions 4-6 involve the target use of present perfect.

Questions 7-9 involve the non-target use of past simple.

Questions 10-12 involve the target use of past simple.

Questions 13-24 are distracters, with an even split of grammatical and ungrammatical sentences.

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- Question 1 *Samy has gone to the United Kingdom last September.
- Question 2 *They have written an essay on Pharmacology several days ago.
- Question 3 *The other day my students have given me a present.
- Question 4 Since the beginning of June, I have lived in France.
- Question 5 He has been a fire-fighter for three years.
- Question 6 Chris and I have known each other for ten years.
- Question 7 *Jessica spent so much more since the inflation in June.
- Question 8 *Mark studied Chinese in Taiwan since last summer.
- Question 9 *We never saw him again since Tuesday's lecture.
- Question 10 Esther was very good in Mathematics when she was young.
- Question 11 Andrew finally found his lost wallet on Thursday.
- Question 12 She came to the United States in 2000.
- Question 13 *Alison like to bake cakes and cookies very much.
- Question 14 *Sharon always want to receive a present from Santa Claus.
- Question 15 *Every day, Felix perform music in the public.
- Question 16 Helen often watches television after dinner at night.
- Question 17 Rosa is a very good singer with professional standards.
- Question 18 Every time Marco plays the piano, the audience feels relaxed.
- Question 19 *He is playing with the cat who is very adorable.
- Question 20 *James is a driver which is very cautious in driving.
- Question 21 *Lisa is liking to eat ice-cream in the winter.
- Question 22 Jacob is a diligent student who works very hard.
- Question 23 Now, Mary is making a delicious meal for us all.
- Question 24 Crystal likes the pen which is her birthday present.

APPENDIX 2: PROOFREADING TASK

What a day!

This is certainly the most unforgettable and bizarre¹ day which I ever experienced². Although it has happened³ several years ago, but⁴ my memory of that day is still fresh.

It's⁵ five o'clock in the morning. I have already⁶ waken⁷ up because I had to catch a flight to France⁸. I made myself some breakfast and had it while listening to some music. Once I have finished⁹ it, I walked out of my house. After getting on the bus, I found that I had left my purse which¹⁰ I put my money at home! The bus driver sit¹¹ there was waiting for my payment. It was so embarrassing¹²! I quickly got off and ran back home. I grabbed my purse and rushed out again but the lift was under maintenance¹³. I had to walk down 10 floors of stairs. Finally I reached the bus-stop and got on the bus. Throughout my bus journey, I was very anxious because I doubt¹⁴ if I can¹⁵ get to the airport in time. I kept blaming myself that I have left¹⁶ my purse at home.

When I arrived¹⁷ the airport, I called my friend Jimmy who¹⁸ I was going on the trip to Paris¹⁹.

"Hi, Jimmy, where are you? Did you wait²⁰ for a long time?"

"What are you talking about? I'm at home, of course. It's 7 o'clock in the morning!"

"What? Our flight isn't²¹ scheduled for 8 o'clock?"

"I don't know what are you²² talking about. Today is Thursday²³. Our flight is tomorrow but not today. Have you drunk²⁴ too much when you were hanging out with your friends yesterday? Time to wake²⁵!"

My watch show²⁶ the date as 23rd August proved that I was wrong and Jimmy was right. While feeling relieved, I realised that my nervousness on the bus was completely pointless! I felt so stupid!

That day on my way home, I have bought²⁷ a²⁸ organiser to write down every little event in my life. Since then, the organiser which²⁹ I write was³⁰ in my rucksack. I guess I will never make such a careless mistake again!

Errors:

- 1: spelling
- 2: wrong use of past simple
- 3: wrong use of present perfect
- 4: excessive 'but'
- 5: wrong use of present simple
- 6: wrong use of present perfect
- 7: 'waken' change to 'woken'
- 8: capital letter – 'France'
- 9: wrong use of present perfect
- 10: missing of preposition – 'within which' or 'in which'
- 11: wrong verb form – 'sit' change to 'sitting'
- 12: spelling
- 13: spelling
- 14: wrong use of present simple
- 15: wrong use of present simple
- 16*: collocation – blaming myself + for + v-ing – 'blaming myself for leaving / having left'
- 17: missing of preposition – 'arrived at'
- 18: missing of preposition – 'with whom'
- 19: capital letter – 'Paris'
- 20: wrong use of past simple
- 21: question Subject-Verb inversion
- 22: Subject-Verb inversion
- 23: capital letter – 'Thursday'
- 24: wrong use of present perfect
- 25: missing of preposition – 'wake up'
- 26: wrong verb form – 'show' change to 'showing'
- 27: wrong use of present perfect
- 28: agreement of article – 'a' change to 'an'
- 29: missing of preposition – 'in which'
- 30: wrong use of past simple

* Error 16 was originally treated as wrong use of present perfect. However, after discussion with the other rater, it was agreed that it would be more appropriate to treat it as a collocation error. In fact, many participants picked up the collocation of 'blaming somebody for doing something' and they might have identified the error as one relating to collocation instead of the wrong use of present perfect.