Monitoring primed of-genitive construction and the escort manifestations of low availability in English simultaneous interpreting from adlibbed Colloquial Arabic: a cognitive empirical study

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Abstract
This study is a small-scaled experiment performed to monitor a common output English linguistic tendency of Arabic native trainee-interpreters when interpreting from their Language A, Arabic. Relying on cognitive theorizing and interrelations between SI models, the study seeks to monitor the frequency of primed prepositional of-genitives and escort errors, omissions, additions, un/filled pauses by means of a quan-qual analysis of the output sample transcripts and suggest training on the centripetal stimulation of the of-genitive alternative forms as a language enhancement required for A/E SI training. An experiment comprising nine subjects is performed, and output audios are manually transcribed, and scrutinized for the escort of-genitive manifestation of low availability. Major findings show a ratio of 5.2: 1: 0.26 between the occurrences of, respectively, of-genitive, compound noun and ‘s genitive. Evidence on priming the of-genitive construction against a monitored lower frequency of the two alternative forms is provided. Of-genitive LC’s show higher rates of escort manifestations of low availability; 208 hits (64.79%) of the total 321 output genitive occurrences are monitored with escort EOI’s. Qualitative analysis of prepositional genitive hits shows linguistic interference caused by low language separation skills. 36.76% (118 hits) of the total output genitives correspond to Arabic mudaaf constructions.

Key words: Of-genitive form, interference, information-dense segments, language enhancement, availability
تكرار استخدام صيغة المضاف إليه الإنجليزية ومظاهر انخفاض الجاهزية اللغوية المصاحبة في النتاج المترجم فورياً من العربية العامية المرتجلة: دراسة إدراكية تجريبية

ملخص البحث

تنتمي الدراسة الحالية لنمط الدراسات الإدراكية التجريبية في الترجمة الفورية والعلاقات القائمة بين نماذج هذا النمط الإدراكي، فهي تجربة ذات نطاق محدود تعمل على تتبع اتجاه عام لدى المترجمين الفوريين يتمثل في زيادة تكرار استخدام صيغة المضاف إليه الإنجليزية في النتاج المترجم فورياً من العربية العامية المرتجلة مقارنةً باستخدام صيغتي الاسم المركب والملكية في الإنجليزية. كما ترصد الدراسة ما يصاحب ذلك من ظواهر التراجع اللغوي مثل الأخطاء، وفترات الصمت أو التردد المنطوق، والحذف أو الإضافة. تشمل عينة الدراسة تسعة متدربين، وتستند في منهجيتها على التحليل الكمي الكيفي للنتاج المترجم للمتدربين أفراد العينة. تهدف الدراسة إلى اقترح التحفيز المركزي الذهني أثناء عملية الترجمة الفورية لبدائل لغوية عن التكرار الملحوظ لصيغة المضاف إليه الإنجليزية، والأخذ بذلك كتدريب لغوي معزز في تدريس الترجمة الفورية. وقد أثبتت نتائج الدراسة ما يلي: نسبة تكرار صيغة المضاف إليه الإنجليزية إلى الاسم المركب وصيغة الملكية هي 0.26 : 1: 5.2، وهو ما يثبت فرضية الدراسة. تم رصد التراجع اللغوي المصاحب لتكرار صيغة المضاف إليه الإنجليزية في 68% من جملة الحالات في النتاج الفوري للعينة والبالغ عددها 321 حالة. كما أظهر التحليل الكيفي أن حالات استخدام صيغة المضاف إليه الإنجليزية ترجع في 36.76% منها إلى تأثير التداخل اللغوي في النتاج الفوري الناشئ عن التأثر بصيغة المضاف المعطلة في العربية المعبراً والأعمال المنقول منها.

الكلمات المفتاحية: الجاهزية اللغوية، التداخل اللغوي، الكثافة المعلوماتية، نتاج الترجمة الفورية، صيغة المضاف إليه العربية والإنجليزية، التدريبات المعززة.
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1. Introduction
Observing interpreters’ linguistic habits during interpreting usually leads to figuring out some common interpreting norms. Errors, omissions, additions, filled/unfilled pauses, namely the triangular manifestations of low availability as errors, omissions and infelicities, EOI’s, monitored in the micro-corpora of output sample transcripts in small-scale SI experiments help, when supported by further macro experiments then linguistic analysis of interpreting corpora, pave the way to recommend SI language enhancements for a better quality of the SI output on trainee and professional levels.

2. Rationale of Study
Training on language-specific problem triggers allows trainee-interpreters to increase their language availability of lexical items and syntactic rules and to relatively decrease the cognitive load needed during the SI operational processing. In cognitive empirical SI studies, tracing language-related errors caused by input clause complexity, possible linguistic interference of interpreters’ language A, and/or individual/common errors, omissions/ additions help make some language compositional rules more easily retrievable and potential delay-causing structures (caused by virtue of linguistic interference) somehow avoidable. Thus, language enhancements needed to support language availability are figured out. Density, for example of the discourse marker, so, in an Italian/English interpreted corpus is evidenced through a parallel corpus-based study to be higher than its frequency in spoken English (Bendazzoli, 2019, pp.183-202). Occurrences of the English coordinator and, are monitored, in an SI experimental study, to be higher than their equivalent input Arabic, wa, and evidenced to be a direct interference from the subjects’ standard language and spoken variety A, modern standard and colloquial Arabic, (Abdel Maqsoud, 2019, pp.165-167). Along the same lines of cognitive and descriptive interpreting studies, this small scale experimental study is performed to monitor a common output English linguistic tendency of Arabic native trainee-interpreters when interpreting from Arabic; it attempts to monitor frequencies of the output English prepositional genitive form compared to possessive and
compound forms during interpreting from adlibbed colloquial Arabic, henceforth, suggests the relevant language enhancement.

3. Objectives of Study

Relying on the cognitive theorizing and interrelations between the Cognitive SI models and hypotheses, as explained below (5.0, 5.1 and 5.2) the present experimental study seeks to

1. monitor the frequency of the prepositional of-genitives and escort errors, omissions, additions un/filled pauses by means of a quan-qual analysis of the output sample transcripts,
2. trace compound and ‘-s genitive escort EOI’s and suggest, accordingly, a training on centripetal stimulation of the of-genitive alternative forms, to make them more readily primed in A/E retour interpreting, as a language enhancement required for A/E SI training.

4. Method and Procedure of data extraction and Analysis

- This micro-scaled experiment is conducted on 9 graduate students who completed five successive SI courses; 48h. /course.
- Student/ trainee-interpreters’ working languages are Arabic (Language A), and English (Language B); Arabic Cairene Colloquial variety (Spoken dialect).
- Trainees are asked to interpret roughly 15 minutes of a televised interview (m.1:06 to m.15:14) with the Minister of Environment on a scheduled International Conference on biodiversity and Climate Change (https://www.youtube.com/watch?v=HQI Ae-s3ys0&t=778s). The average steady input rate during the interview is 138.5 w/m with a range of 128 to 158w/m. This is recognizably a high input rate beyond the standard AIIC 120w/m manageable limit.
- No pre-experiment list of technical terms (LSP’s) is passed beforehand as the trainees are expected to interpret against a solid background knowledge of the domain due to its being subject to their ongoing SI course as a main topic of study. No particular instructions are given about the language constituent frequency under investigation, either. Both procedures are carried out to get as much naturally produced output as possible.
- Output sample audios are manually transcribed by the researcher; post-edited against the output audios; then tested against the input interview to insert errors, omissions, un/filled pauses, additions.1 Output sample transcripts of interpreting units subdivided per minute are provided in the Appendices and uploaded to an outlook drive via the researcher’s share point: https://alsunasuedu-
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- Care has been taken to carry out a corpus-like study of the output sample transcripts. The produced frequency of the English prepositional of-genitives is subjected to analysis and then tested against input correspondences and escort output errors, omissions, additions and infelicities. A micro corpus of the collective output sample transcripts is eventually compiled and uploaded to Sketch Engine Corpus processor where KWIC searches and word sketches are sought for the of-genitive, -’s genitive and compound noun.

5. Theoretical Framework
The theoretical framework of the present experimental study is defined in the Cognitive Paradigm of SI (Pöchhacker, 2004), as elaborated through the perspective of the Language Availability and Gravitational Models (Gile 2009; 2016), and Disturbance of Sequential Segments Hypothesis (Abdel Maqsoud, 2019). Firstly, the LA model explains errors, omissions and infelicities caused by low language and production availability; such EOI occurrences arise from a breach of interpreter’s saturation level because of language-specific, informational and memory problem triggers; lack of readily retrievable alternatives of the English prepositional genitive form during Arabic- into-English SI processing is a case of relevance subjected to investigation. Gile ascribes the saturation level to an excess of processing capacity requirements in the short term memory effort at cases of syntactic asymmetry between the source and target languages, for which the interpreter is forced to store as much information before being able to reformulate them (Gile, 2009, p.193).

Secondly, according to the psycholinguistic effects of frequency, escort and interference, as elaborated in cognitive psychology, the Gravitational Model explains the cognitive reasons why language constituents (LC’s) are migrating away or are easily stimulated during the SI processes of processing and production. The present output sample transcript analysis shows a high frequency of the output English prepositional genitives (easily stimulated/ primed LC’s), compared to much lower frequencies of the possessive genitives and compounds (migrating LC’s). The Model also provides reasons for linguistic interference, caused by interpreters’ L1; this applies particularly to retour interpreting in the present experiment. Thirdly, the Disturbance of Sequential Segments Hypothesis shows how a lag lengthens the ear voice span (EVS), causing omission or erroneous formulation of an incoming segment (Abdel Maqsoud, 2019,
Finally, in view of the three major components of SI Quality, namely informational fidelity, intonation, and language quality (Defranq & Pleveots, 2018, p. 45), the study recommends priming of the compound nouns and English possessive genitives as alternatives to the promptly stimulated prepositional genitives; this is sought so as to provide a language enhancement and a “preventive tactic” that might help prevent recurrence of low availability manifestations escorting the primed prepositional-of-genitives in Arabic-into-English retour interpreting.

5.1 Cognitive Explanation of Language Availability: Gravitational orbits of LC’s

High language availability in comprehension and production as well as language separation, are essential cognitive skills for the operational processing of SI. Based on the non-architectural processing of the EMSI Model (Gile, 1997, 1999; 2009; 2016), the Language Availability Model (2009; 2016) presumes a high language availability to avoid an excess of processing capacity requirements; hence, an attempted sparing of the risk of an imminent saturation is sought. Added to and/or synchronizing with high input rates, informational density, mode of delivery and the limited time allowed for comprehension compared to production, lack of the required output language constituents (LC’s) during listening, comprehension, coordination and production is prone to cause a lag of production and an expected disturbance of sequential segments. In consequence, “working memory is saturated and either incoming speech segments cannot be attended to, or previously heard speech segments cannot be processed fully” Un/filled pauses, errors and omissions, i.e., manifestations of low availability are more likely to occur” (Gile, 2016, p. 66; 2009, p.226).

Therefore, Language Availability (LA) is defined as “the ability of simultaneous interpreters to retrieve lexical items and grammatical and other associational rules from long-term memory and produce speech assemblies rapidly and efficiently in terms of attention resources” (Gile, 2016, p. 69). LA Model, accordingly, assumes the availability of linguistic skills as a means to alleviate SI cognitive pressure and to generate high production availability (2016, p. 27). LA comprises three types: Listening and Comprehension Availability (LCA), General Production Availability (GPA) and Equivalence-based Production Availability (EPA). Language constituents comprise three types: lexical units as words and commonly set phrases; compositional rules of general(non-specialized) language that govern the composition and formulation of words into acceptable statements in written or spoken
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discourse; rules of language for special purposes (LSP’s), including technical terms and specialized phraseologies typical of a given genre (Gile, 2009, 226-227). GPA is applicable to the density of prepositional genitive (i.e. of-genitive) construction as monitored in the present output sample transcripts. Readily retrievable compositional rules are an LC type directly applicable to the of-genitives frequently produced at the expense of possessive genitives and compound nouns.

The Gravitational Model (GM) helps explain the interpreter’s language availability during input processing and output generation tasks. Language Constituents are analogized to atoms on a Bohr-like gravitational structure; the closer the orbit carrying an LC to the nucleus, the stronger the effect of frequency; the reverse is perfectly true (Gile, 2009, pp.226-237). Frequency is recognized to be a predictor of lexical access both in comprehension and production (Defranq et al., 2018, p.48). Five major rules are further set within the GM further to explain the dynamics of the orbiting LC’s when primed, i.e., stimulated, or when migrating away in remote orbits. According to the Centrifugal Migration Principle (Rule 1), LC’s are less available when they are not in use; they are progressively migrating in orbits remote from the nucleus till eventually forgotten. The Centripetal Stimulation Principle (Rule 2) perfectly presents the opposite; this is “when stimulated LC’s tend to move inward” in orbits much closer to the nucleus (Gile, 2009, p. 229). Rules 3 and 4 further establish the workings of Rule 1&2. The Centripetal Effect in Rule 3 is rendered stronger when LC’s are more frequently used. Henceforth, “LC’s used frequently tend to become more available than LC’s used less frequently” (230). The stronger centripetal effect of active stimulation than passive stimulation is ascertained By Rule 4, known as The Centripetal Effect of Active versus Passive Stimulation. As per Rule 5, the Escort Effect, LC’s similar to or associated with a stimulated LC become more available. Conversely, the Language/ Linguistic Interference, defined as the downside of the Escort Effect, accounts for what may cause the interpreter/translator to use an LC incorrectly due mainly to the interference of the interpreter’s Language A. “The disturbing presence of both languages in working memory” (237) is why interpreters face the risk of interference during input processing under high cognitive pressure. In Setton’s view, keeping language codes apart during speaking and hearing is an effortful task because linguistic resources are not naturally organized in the human brain (2016, 126-128). Therefore, interference of language A into Language B during production processing reflects low separation skills. Subject to observation in the present study is the correspondence between the frequency of
prepositional genitive forms and Arabic mudaaf forms.

5.2 Language Separation & Low Availability: Suggesting of-genitive alternative forms as a language enhancement

Learning relevant language enhancements and SI strategies/tactics supports interpreters’ capacity of language separation during processing and production. Enhanced language separation capacity, in turn, contributes to strengthen higher language availability, particularly the General Production Availability (GPA), and to reduce the cognitive load during the operational processing of the four efforts; saturation level is then expected to be pushed farther; occurrences of errors, omissions, and infelicities are by default expected to be less frequently produced. This is based on two major assumptions of the LA and Gravitational Models: first, the use of the translinguistic equivalences, which is most likely prone to keep languages separate in the booth and reduce cognitive effort; second, the frequency effect as a strong psycholinguistic contribution to language enhancements (Gile, 2016, p.76). The Language enhancement which the present study attempts to provide an evidenced clue for is, as above mentioned, priming of alternatives of the prepositional of-genitives in A/E retour interpreting; i.e., to set -'s genitives and compounds to be more readily retrievable and frequently used LC’s. This is meant as well to be incorporated as an easily stimulated tactic within the inventory of interpreters’ knowledge-based processing, the so-called Cloze technique (Pöchhacker, 2004, p.119). It relies on background knowledge about the topic subject to SI as well as language compositional rules and specialized terms, i.e., the three types of LC’s. Henceforth, the study presents a preventive tactic by means of suggesting language-specific alternative LC’s as substitutes to the more frequently produced of-genitives with the aim “to prevent predictable processing overload” (Gile, 2018, p.13), caused by SL/TL asymmetrical syntax, speed of delivery and informational density. Thus, as per the dynamics of the Gravitational Model (Gile, 2009, pp.227-241), the study seeks to assist ‘the centripetal stimulation’ of the of-genitive alternative forms, making them more readily retrievable.

Separation between languages is defined as the ability to clearly identify and attribute lexical, grammatical and other rules as belonging to one language and the ability as well to use them without interference from other languages, whether this is represented in the form of errors, omissions, infelicities, marked hesitations or repairs (Gile, 2016,p.68). As above explained, low language separation takes place when interpreters use LC’s incorrectly due mainly to the interference of the
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interpreter’s Language A. The “disturbing presence” and “conflicting codes” of both languages in working memory cause interpreters to face the risk of interference during input processing under high cognitive pressure; the number of output English of-genitives produced in this experiment in correspondence to Arabic mudaaf forms is a good case in point (Out of the total 321 output of-genitives, 36.76% (118 hits) correspond to Arabic mudaaf form). The Interference Effect is the strong motivator of low language separation; itself is an indication of low language availability whether, LCA, GPA and/or EPA. As far as the micro corpus of the total output sample transcripts shows, trainee A/E interpreters’ conscious/unconscious tendency to prime English of-genitives, i.e., to produce frequencies of the prepositional of-genitives higher than the frequencies of compounds and ‘s genitives reflects a low availability of interpreters linguistic skills (Table 2); of-genitive escort erroneous formulations, omissions, additions and filled/unfilled pauses in the present output sample transcripts provide good evidence (Table 1).

5.3 Input Cultured Cairene Colloquial
In this experiment, Cultured Cairene Colloquial Arabic language variety is the input speaker’s variety as adlibbed in the interview and the subject trainees’ spoken variety. The adlibbed mode of delivery is no less complicated in terms of clause complexity than scripted well written speeches. Truly, adlibbed talks might be less complicated in view of expected speech failures, voiced hesitations, unfilled pauses, shorter speech segments accidental and/or deliberate redundancies (Dejean Le Feal 1982 as cited in Pöchhacker, 2004, p.130; Balzani, 1990). But, the impromptu talks, interview responses, presentations and daily conversations prove as a high input problem trigger as reading scripted speeches for interpreters. This is particularly ascertained when these talks are delivered in longer chunks and in an 120+ w/m input rate and observed technicity, stressing further the informational density incorporated. The intricacy of the clause complex in spoken varieties has long been recognized in sociolinguistic theorizing. In Halliday’s view (1989), spoken language is more intricate than the written: “sequences of conversational discourse are intricate constructions of clauses, varying not only in the kind of interdependency (parataxis and hypotaxis), but also in the logical semantic relationships involved” (p.86). Almost a similar view is held of the spoken cultured Cairene colloquial when set as the third main level on a continuum of the Arabic five language levels: Badawi (1973, p.171) describes the Cultured Cairene Arabic Colloquial variety, ‘Aamiyyat al-muθaqqafiin, as rich, variable, intricate as modern Arabic.
or modern written Arabic, *fuṣḥaa al-ʿaṣr*, which is the second level of Arabic varieties, widely known for modern standard Arabic.

The Cultured Cairene Arabic Colloquial variety is used by the cultured people to speak about issues of science, politics, arts, and social sciences (Badawi, 1973, p.90; Badawi, Carter & Gully, 2016, pp.2-5). A set of linguistic and phonological properties distinguishes each of the set five levels; however, no strict demarcation lines stand between the levels; rather, a continuum of preferences, realized by linguistic features, holds them together. The intricacy of the clause complex in cultured Cairene colloquial, is traced, among others, in the linguistic feature of embedded structures, which necessitates higher processing capacity requirements and a higher general production availability. In other words, it requires readily stimulated equivalent LC’s of lexical items and syntactic structures to relieve the production effort. Both standard and colloquial forms of Arabic mudaaf structure, to which the English of-genitives are the frequently stimulated equivalent LC, are contained in the present input adlibbed interview, including mudaaf constructions embedded within or blended with Arabic prepositional phrases. مسار النظم البيئية, literally, the course of ecosystems, is a standard Arabic mudaaf form; الاتفاقية بتاعة التنوع البيولوجي, agreement which belongs to biodiversity, with the embedded colloquial lexical item of بتاعة, literally, which belongs to, is a common colloquial Arabic mudaaf form. الرئاسة لمؤتمر التنوع البيولوجي, literally, chairmanship for the conference of biodiversity is a mudaaf form embedded into a prepositional phrase.

Clause/ phrase complexity when combined with information density and low redundancy strain the cognitive load needed for input processing and output production. Some cognitive theorists seem to reject the effect of clause complexity on the SI output quality; Setton dismisses syntactic structures as an obstacle to SI (1999). However, others do assert it; Tommola and Helena (1998) ascertain according to an experimental study on English-Finnish interpreters the significant effect of syntactic complexity on output accuracy. Gile (2009), on the other hand asserts, following the common view among psycholinguists, that comprehension is facilitated or made more difficult due to some syntactic structures as embedded structures which pressure on the comprehender’s; the processing capacity requirements are increased in consequence (p. 195). Input sequences of input Arabic mudaaf forms in this experiment with multiple post modifiers or as embedded within prepositional phrases, form some short information carrying signals with particular stress on the memory effort. The quan-qual analysis shows the escort errors and omissions at cases where prepositional genitive is readily retrieved and
produced in correspondence to Arabic mudaaf conjoins and sequences, due to Arabic interference.

5.4 Semantic similarity between prepositional genitive, possessive genitive and compound noun constructions

Close similarity of meaning between the possessive and prepositional genitives on the one hand, and the prepositional genitive and compound nouns on the other has been recognized by earlier and more recent traditional English grammarians (Quirk & Greenbaum 1983, pp. 95-98; Alexander, 2003; Kay & Karl Zimmer 1976, 2016). The degree of functional similarity between the prepositional of and -’s genitive constructions has led grammarians to regard both as variant forms of the genitive (Quirk et al, 1983, p.94).

A distinction is made between the of- and -’s genitive constructions as per the upper and lower parts of the gender scale; “-’s genitives are favored by classes that are highest on the gender scale, i.e., animate nouns, in particular, persons and animals with personal general characteristics”, so it is not common to say the door’s knob, the table’s leg or the hat of John (p. 96). Thus, the-’s construction is in a way excluded with inanimate or nonliving things (Alexander, 2003, p.64). Conversely, the of-genitive constructions are chiefly used with nouns that belong to the bottom part on the gender scale, i.e., especially with inanimate names, the title of the book, the interior of the room. Thus, though an’-s genitive is possible in each of the previous two examples, it is excluded in other instances as the windows of the houses (Quirk et al, 1983, p.97).

Lack of a commonly used compound noun is a condition set by Longman English Grammar for the use of of-construction with Things, i.e., inanimate, e.g., the book of the film, the shade of a tree. Inanimate part-whole relations as the bottom of the box, and abstract relations as the cost of living also regulate the use of of-construction (Alexander, 2003, p.64).

Both of- and -’s genitive constructions are established to be interchangeably used with geographical names and institutional reference: respectively, America’s policy or the policy of America; The European Community’s Exports or the exports of the European Community. Thus, in dense segments carrying long institutional reference relevant to conference titles, names of organizations, etc., a binary choice or a blend of both genitive constructions during SI processing is possible grammatically. An indication of ownership also makes an -’s genitive interchangeable with the of-genitive, but the reverse is not true: “a man’s
voice can be expressed as the voice of the man”, but the leg of the table cannot be turned into the table’s leg; however, it is readily interchangeable for the compound noun, a table leg (Alexander, 2003, p.64).

The recognized semantic similarity between compound noun and of-genitive construction is asserted: “noun pre-modifiers are often so closely associated with the head as to be regarded as compounded with it in many cases, they appear to be in a reduced explicitness relation with prepositional post modifiers.”(Quirk et al, 1983, p.399). The largest category of compounds is defined as: a combination of two nouns which forms a compound, the first noun, known as the noun modifier usually functions like an adjective and is nearly always in singular (Alexander, 2003, p.47). Ten different headings are listed for the study of this largest category; e.g., compound which refer to streets, Oxford Street, to purpose, a book case, to types, horror films, and others (p. 47-49).

It follows that grammatically, except for set cases, both the prepositional of- and the possessive -'s genitive construction are alternatively used, the same is also true of the interchangeability of of-construction and compound noun.

5.5 Cognitive reasons for low frequencies of compounds compared to of-genitive constructions

What makes a compound a less retrievable LC during SI processing is that it strains the production effort because: plural nouns must usually be converted into singular in compound nouns; also, the reversed order a compound noun necessitates in A/E SI; الرعب، أفلام الرعب has to be reversed in terms of word order into, horror films. Moreover, compounds must indicate permanency, but not a relative impermanence: the girl in the corner can NOT be turned into the corner girl, but a table in the corner CAN readily be turned into the corner table (Quirk et al, 1983, p.400). Therefore, compound noun production in SI means a threefold effort needed to: 1. recognize a compound and analyze it in the source language; 2. suppress the transcoding reflex of starting off translating the first item and to store instead that item in memory (Lederer, 1978), 3. render both items in the target word order (Defrancq et al, 2018, p.48).

Research studies have provided evidence that a compound can be an easily stimulated LC depending on the frequency of a compound as a whole and/or the frequency of its constituent parts, depending still on the length of the compound itself (Bertram & Hyona, 2013; Shoolman & Andrews, 2003). The more frequent the component parts are, the faster the compound is stimulated and processed and the smoother lexico-semantic access is achieved (Defrancq etal, 2018, p.48). This partly explains the
reason why the ratio of output compounds to output of-genitive constructions in the present sample transcript is 1:5.2 with a total of 61 hits for compounds and 321 for the of-genitive. Corresponding to the Arabic mudaaf form تغيير المناخ, the standard compound noun, Climate Change, is correctly stimulated, accessed and produced; not a single occurrence of Change of Climate occurs in the 9 sample transcripts; certainly due to the knowledge based processing of the high frequency of the compound noun itself alongside its constituents; 16 hits (26.2%) of the 61 are Climate Change, 11 hits are formed with climate change as modifier and head noun or as modifier to other nouns as in Climate Change Agreement (Unit 5); 5 other hits of climate change are traced in Unit 6.

Part of the cognitive reason why of-genitives are more promptly stimulated than compounds and possessive genitives is the parallel formation of Arabic mudaaf structure and English of-genitive form in terms of word order, as in دور مصر, ووزير البيئة respectively, the role of Egypt, minister of environment; it hence loads less on the storing capacity of the memory effort. This is unlike the switched word order necessitated by the compound or possessive genitive form, as in, environment minister, or Egypt’s role.

6. Quan-qual Analysis:
6.1 Of-genitive escort manifestations of low availability: errors, omissions and filled/unfilled pauses

Though more easily retrieved than other alternative forms of compounds and possessive genitives, the 321 occurrences of prepositional of-genitives are monitored in 208 hits (64.7%) in the present output micro-corpus of sample transcripts with escort (preceding or following) erroneous formulations caused by lexical mischoices of genitive head noun or post-modifier, filled/unfilled pauses, omissions and additions as the following table shows
<table>
<thead>
<tr>
<th>Unit</th>
<th>Input rate/unit</th>
<th>Output of genitive occurrences/unit</th>
<th>Hits preceded/followed by filled/unfilled pauses</th>
<th>Hits with mistaken/non-standard lexical errors of HN or PM</th>
<th>Erroneous formulations</th>
<th>Omissions</th>
<th>Additions - generalizations</th>
<th>EOI- free of genitive formulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit 1 m.1:06 - 2:07</td>
<td>124w/m</td>
<td>39</td>
<td>1</td>
<td>4</td>
<td></td>
<td>6</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Unit 2 m. 2:08- 3:12</td>
<td>151w/m</td>
<td>24</td>
<td>2</td>
<td>1</td>
<td></td>
<td>4</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Unit 3 m. 3:13- 4:09</td>
<td>130w/m.</td>
<td>25</td>
<td>--</td>
<td>1</td>
<td></td>
<td>2</td>
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<tr>
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<tr>
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<tr>
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<td>152w/m</td>
<td>33</td>
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<td>Unit 11m. 11:09- 2:09</td>
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<td>24</td>
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<td>158w/m</td>
<td>27</td>
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Dr Amal Abdel Maqsoud Abu Nima
### Table 1. Escort of-genitive errors, omissions, infelicities

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<td>6</td>
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### Table 2. Frequencies of prepositional genitives, '-s genitives and compounds in the output sample transcripts

#### 6.2 Produced compounds, '-s genitive constructions and escort EOI’s

Few as they are, the 61 hits of compounds in the output transcripts, whether or not corresponding to the Arabic mudaaf form, are less escorted with EOI’s; only 11 hits (18 %) either involve or are preceded/ followed by unfilled pauses, voiced hesitations and errors, as Table 3 shows below. Rare UP’s, VH’s, and errors are monitored with ‘-s genitive formulations in the output sample transcripts. Out of the total 12 hits, only one single hit is preceded by an omission (Unit 4, S2).

<table>
<thead>
<tr>
<th>Units</th>
<th>U1</th>
<th>U2</th>
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<th>U4</th>
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<th>U6</th>
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<th>U10</th>
<th>U11</th>
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<td>2</td>
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<td>1</td>
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<td>1</td>
<td>O</td>
<td>O</td>
<td>11</td>
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<td>S6</td>
<td>S2</td>
<td>S3</td>
<td>S6</td>
<td>S5</td>
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<td>--</td>
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<td>S3</td>
<td>--</td>
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<td>--</td>
<td>UP</td>
<td>VH- ERROR</td>
<td>--</td>
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### Table 3: Output Compound nouns and escort EOI’s
6.3 Short information carrying signals: Arabic Mudaaf conjoins and sequences

Occurrences of prepositional of-genitives corresponding to conjoins of and/or adjacent segments comprising standard/colloquial Arabic mudaaf forms are monitored in units 4, 5, 8, 9, 10, 11, where the input mudaaf sequences carrying the high informational density items stress the memory effort. These are short information-carrying signals with little redundancy such as digit sequences, proper nouns, titles, names of organizations, institutions and conventions, e.g., إدارة المؤتمرات, Protocol Department, رئاسة الاتحاد الإفريقي, Chairmanship of the African union. As far as the present input talk shows, Arabic mudaaf constructions, prepositional phrases, and a blend of both are the recurrent Arabic forms used for posts, names and titles of organizations and institutions. In unit 4, four Arabic mudaaf occurrences are monitored within the last 15 seconds (m. 4:53 – 5:08), carrying titles of conferences in three of them; the fourth is a colloquial Arabic mudaaf. Sequences of errors, omissions, voiced hesitations and unfilled pauses are detected in output formulation by Subjects 1, 2, 9 as they maintain frequent stimulation of prepositional of-genitives ( Appendix17, Unit 4, min. 4:53- 5:08, Example 1): Consistent use of of-genitives corresponding to the three informational dense Arabic mudaaf forms is observed in Subject 1 and 2’s formulation; omission/ erroneous formulation of prepositional genitive head noun and/or post modifier, or the whole short information signal is monitored, e.g., Subject 1produces the following EOI’s within the same segment: they are not the president of the nature of the natural of Africa. eheheh.. the conference of. unfilled pause... Fragment; Subject 2 has an erroneous formulation, too: this shows that Egypt is even if they are not the president of the nature of Afric natural conference of Africa, they have a role. On the margin of the meeting... Fragment, corresponding to, فدا أسلوب بيوري إن مصر يعتبر ها حاطة أفريقيا بعين الاعتبار. Sequences of Arabic multiple mudaaf forms with two or three post-modifiers particularly in the form of adjacent short segments cause excessive load on the memory and henceforth production effort. A Non-standard formulation of the conference title is formulated by Subject 9, the president of the ministers of environment in Africa; Africans, ‘in Africa’ is formulated to maintain the parallel order of input output unit formulation and to relieve the memory load.

Unit 5, last segment (Appendix 17, Unit 5, min5: 54 -6:05, Example 2 ), shows five short information carrying signals with three successive conjoins of Arabic mudaaf conjoins (underlined in Example 2), two blends
of Arabic prepositional phrases embedding mudaaf forms occur (highlighted in green, Example 2). Output formulation of prepositional genitives in Subjects 3, 6, 7, 8’s rendition marks obvious omissions, errors, unfilled pauses, voiced hesitations and mispronunciation. Recurrent omissions of head nouns in adjacent sequences of of-genitives mark memory failure and are prone to accelerate interpreting failures, which in turn mark excessive memory load affecting the flowing formulation of adjacent sequences. This is observed for example, in a strained memory effort traced in an omission and escort voiced hesitations of three informational dense mudaaf conjoins.

In Unit 8 (m.8:50–9:08) against an input rate of 133w/m and chunk length of 25w/c, three conjoins of Arabic mudaaf construction occur carrying titles of ministries and departments: وزارة الخارجية، إدارة المراسم، إدارة المؤتمرات, respectively, foreign ministry, protocol department, conference department. Unfilled pause-omission pair occurrences and complete omissions are traced in output formulation by Subjects 1,2,7,8,9; two input mudaaf conjoins are omitted; one single mudaaf conjoin is caught against a memory failure and formulated in an output of-genitive, the minister of foreign affairs, by Subject 3; however the other two conjoins are generalized. A mistaken lexical item is produced by Subject 4, ministry of the interior; the subsequent two input mudaaf conjoins are generalized, too. The latter two conjoins are utterly omitted by Subject 5. The same is true of Subject 9 who produces two synonymous of-genitives corresponding to وزارة الخارجية: namely, department of state and the ministry of state; none is the correct standard lexical equivalent to the said ministry in Egypt. Conversely, by means of a blend of compounds and of-genitive constructions, Subject 6 manages to meet the processing capacity requirements and resists a memory failure, producing: on top of them, the protocol and conference department in the eehhh.. ministry of foreign affairs.
6.4 Colloquial Arabic Mudaaf construction

One of the Cultured Cairene colloquial Arabic mudaaf constructions is formed by means of the lexical item, بتاع/ة، literally, *something which belongs to...* (Taymour, 2002, pp.110-111; Gouhary, 2007, p195), it appears in medial position between the head noun and post modifier, e.g., الاتفاقية بتاعة تغير المناخ, literally means, *the agreement which belongs to Climate Change*. It refers also to a possessive relation: الشواغل بتاعتهم means *their concerns*. 26 occurrences of بتاع/ة are monitored in the input interview. Due to the direct correspondence between بتاع/ة and the English prepositions of, for, and possibly on, interpreters tend to stimulate the of-genitive construction in response to the colloquial Arabic mudaaf with the medial بتاع/ة, particularly against high processing capacity requirements imposed by input rate and informational density. Nevertheless, the medial بتاع/ة in short information-carrying signals phrased by the colloquial mudaaf form might still hinder a prompt processing to the direct result of EOI’s. This is typically the case in Units 6, 10, 12, 13. It is observed that, whether or not due to interference from standard/colloquial Arabic mudaaf forms, output genitive formulation consumes a relatively longer duration of production, though easily retrievable and less grammatically restrictive than the –’s genitive (unlike the -’s construction, an of-genitive, under the stress of the moment, applies to both animate and inanimate) and compounds (an of-genitive does not necessitate a switch of A/E word order or an obligatory singularity of the modifier noun as the compound noun does). This longer duration lengthens the ear-voice span to the prompt result of exporting the excessive processing and/or production load to the immediately following segment in the form of memory load and a typical disturbance of sequential segments to the end result of omissions and interpreting failures.

In Unit 6 (m. 6:43 – 7:06 ), some infelicities arise in Subject 7’s production of the frequent of-genitive LC in response to حصله نوع من التقلص التمويل بتاع البيئة بشكل عام والموضوعات البيئية (literally, funds for the environment and environmental issues in general have been reduced) as *financing in the field of environment issues would benefit the world*; the attempted condensation strategy causes an omission and an erroneous formulation; the predicate حصله نوع من التقلص, *has been reduced* is erroneously formulated as *would benefit the world*. A sequence of unfilled pauses and omissions follows subject 8’s of-genitive formulation: *financing of environment field Unfilled pause.. we have to fragment unfilled pause fragment and omission invest unfilled pause there is a loss. Omission unfilled pause ehehe.* (Appendix 6, Subject 8,)

Within sequences of dense standard and colloquial Arabic mudaaf conjoins with 3 hits of بتاع habitual stimulation of the of-genitive LC by
Subject 6 confuses posts for forums, resources and ministries (Appendix 10, Unit 10, min. 10:36-11:6, S6). Output of genitive constructions by Subjects 8 and 9 corresponding to الموضوعات بتاعة الاتفاقية, literally, topics of the agreement, due possibly to a lengthened ear voice span and a resultant memory failure of the passing segment, substitute the postmodifier, الاتفاقية, for conference. An unfilled pause follows Subject 8’s of genitive, whereas an omission of a sequential segment is observed in Subject 9’s (Appendix 13, Unit13, min.13:58-14:13, S’s 8&9).

6.5 Escort of genitive lexical mischoices:
Lexical mischoices arising from a constant stimulation of the prepositional genitive hit many occurrences in the output sample transcripts (Table 1). Corresponding, for example, to an Arabic mudaaf form embedded within a prepositional phrase: الموضوع الرئيسي لمفهوم التنمية, literally a mainstay of sustainable development, a lexical error is produced altering the head noun of the input Arabic prepositional phrase, العمود الرئيسي, mainstay, into founder, causing an utter erroneous formulation (Appendix1, Unit1, Subject1).

Easily retrievable of genitive construction, which smoothly lends itself to chaining, helps drive output formulation of non-standard institutional reference like titles of conferences and organization. The current head African head of delegation, and the president of the ministers of environment in Africa, are the titles formulated by Subjects 6 and 7 (Appendix 4, Unit 4, m.4:50-60) as an equivalent formulation to the triple Arabic mudaaf construction (namely a single head noun and three post modifiers) of رئيس مؤتمر وزراء البيئة الأفارقة, standardly known as, Chairman of the African Ministerial Conference on the Environment. Conference of youth is a lexical error produced as an equivalent for منتدى الشباب, standardly known as, Youth Forum; by the same token, due to a memory failure, headquarters of the conference is a mischoice for the standard Convention headquarters (Appendix 10, Unit 10, S’s 4, 6).

6.6 Interference of Arabic Mudaaf form
36.7% (118 hits) of the total 321 output of genitive occurrences correspond to Arabic mudaaf form. Linguistic interference from standard/colloquial mudaaf forms of high frequency in Arabic are observed to drive a smooth retrievable stimulation of output English prepositional of genitive LC. A low separation skill is observed in Units 2, 5, 7, to mention just the most salient instances. The part of biodiversity is produced in response to the Arabic Colloquial, ربط الموضوع بتقاط التنوع البيولوجي, literally, to relate the issue which has to do with biodiversity to...
The head noun, *part*, is stimulated in a low linguistic separation state as per the direct impact of an implicit commonly used colloquial mudaaf prevalent in the Cultured Cairene colloquial, namely, *الحَتَة بِنَشَاة التنوع البيولوجي، الجزئية بِنَشَاة التنوع البيولوجي*, henceforth *part* is opted for as a cohyponym of أَمْضِيعُ المَوْضُوِع, *issue*. Two output of-genitive occurrences are stimulated in attempted output formulation of مِصْر لرئاْسِ الافريقي. Subject 4, Unit 2, produces: *in the light of its chairmanship of African Union*. The of-genitive LC, *in the light of*, is evoked by interference of the commonly used standard Arabic phrase, خاصة مع تأهِب, to replace, خاصة مع تأهِب, which means *particularly while catering for*.

### 6.7 Genitive additions: *a lot of* & *a number of*

Additions in SI are language constituents added to the produced output and correspond to no direct equivalent in the input source. Interpreters tend to produce additions to ascertain a sense of high lexical availability primarily for themselves as a psychological support for their own sense of availability and to the audience as well to assert a high sense of the interpreter’s fluency in their ears. Additions might also be produced as generalizations when a memory failure is prone to occur due to excessive informational density; attempted retrieval of numbers is a good case in point. They also serve as fillers until other coping strategies are produced. As early as the 1970’s SI experimental studies, Barik (1973, pp. 273, 277, 278) subcategorizes additions as part of SI departures. Schjoldager (1969/2002) enlists additions as a main category of translation and interpreting relationships: such categories are set to “explore the possibility that some norms may be peculiar to simultaneous interpreting and that they occur with capacity saturation.” (p. 306-308). In more recent SI cognitive theorizing, Gile includes additions within infelicities in his famous EOI triangular description of SI failures, resulting from an excess of total processing capacity requirements (2018, p. 5). In a corpus interpreting study, by means of comparing between Spoken and Interpreted English (Italian/English direction) Bendazzoli (2019) details quan-qual observations about additions of the discourse marker, *so*.

Four subtypes of SI additions are specified in Barik’s taxonomy (1973, pp. 276-278): qualifier, elaboration, relationship and closure. Qualifier addition (A1) is produced by an interpreter’s addition of a qualifier or a short phrase. For example, produced phrases of *a lot of* and *a number of* in A/E retour SI, where no indication of numerousness is associated with the genitive post-modifier noun, are instances of the qualifier and.
elaboration addition. Elaboration addition (A2) is similar to A1, but more elaborate and more extraneous to the text. A1 and A2 can be combined into one category (Barik, 1973). Conjunctions and correlators are added in the produced output, as per the Relationship and Closure Additions (A3) by way of paraphrasing; the latter is resorted to so as to cover up an omission or a misinterpretation, it also functions to round off an interpreting unit. Bendazzoli (2019) anatomizes functions of additions as monitored in the use of the so in English interpreting from Italian as: adding information, summarizing or a delaying strategy. Addition of so as autonomously and independently of the corresponding source segment is monitored to signal processing of the ST message or other strategies deployed by the interpreter (pp. 4-5).

Occurrences of a lot of in the present sample output transcripts make 21 hits, accounting for 6.5 % of the of-genitive totals (321 hits). Qualitative analysis shows that hits of a lot of in the entire sample correspond to no direct input equivalent of numerosness. They are either used as qualifier additions corresponding to input mere plural nouns with no adjectival or prepositional modification of explicit numerosness (8 hits); produced as generalizations to cover up a memory failure (3 hits); followed by an erroneous formulation of the genitive post-modifier noun, i.e. a lexical mischoice (6 hits); or preceded/ followed by manifestations of low availability as omissions and un/filled pauses (4 hits). Overlaps are manifestly traced. Units where output a lot of occurrences are monitored are 1, 2, 3, 6, 7, 8, 10 and 11 (Appendix 15, a lot of occurrences). Units 10 and 11 (Appendix 15) show occurrences of qualifier a lot of additions that overlap with lexical mischoices of the genitive post modifier noun: the Arabic plural noun, موضوعات, literally, issues or topics, is formulated as a lot of topics, where the a lot of genitive post modifier is formulated with the mistaken equivalent co-hyponym of challenges, aspects, therewith the indication of numerosness is added. In Subjects 1’s and 2’s output, a lot of is preceded by omissions and followed by lexical mischoices of genitive post modifiers; Subject 2’s output marks two additions of a lot of with no indication of source numerosness عندنا موضوعات في مصر نروج لها, which means, there are topics in Egypt we need to promote for. Subject 9’s produced a lot of things further show a resort to a lot of as a qualifier addition and a generalization particularly reflected in the superordinate hyponym of things in response to موضوعات. Subject 4 produces a second qualifier addition of a lot of by the end of Unit 10 to cover up a possible disturbance of his produced sequential segments caused by a memory failure: we have the conference of youth as well; we make a lot of academic researches in this sector to raise
awareness; the input segment does not indicate numerosness of research articles, rather refers to an academic research forum. When the ex/implicit indication of numerosness is not traced in the input source, it is proved that the produced norm of *a lot of* as a primed LC functions either to cover up a memory failure, in this case the post modifier noun, or to further interpreter's self-sense of a high language availability.

The produced *a lot of* as a generalization to manipulate a memory failure due to a fading number is traced in Subject 8’s formulated *a lot of countries* in response to مشارک من دول العالم (Appendix 15, Unit 2); it is preceded by an unfilled pause. Omission and two VH’s are monitored as well in Subject’1 rendition of *a lot of* by the end of Unit 3(Appendix 15). Occurrences of *a lot of* are escorted, as well with erroneous formulations (Appendix 15, Unit 7).

Similarly, qualifier/ elaboration additions are traced with occurrences of *a number of*. A total of 9 hits is monitored: 3 hits indicate numerosness corresponding to input mere plurality (Appendix 16, Units 3, 4, 5) 3 hits show lexical mischoices of the post-modifier and erroneously formulated segments (Appendix 16, Units 3, 11, 13); 2 hits are generalizations to manage a memory failure (Appendix 16, Unit 2; S’s 3 & 5); 1 single hit of correct formulation (Appendix 16, Unit 1).

Manifestations of low availability as omissions and unfilled pauses are shown through the quan-qual analysis to escort the use of *a lot of* as a generalization; when no actual input explicit/ implicit numerosness is traced, *a lot of* and *a number of* are evidenced through the output sample transcripts to be used as a delaying strategy or a cover-up of a memory failure. Promptly primed additions of *a lot of* are shown to produce an erroneous reversed meaning.

### 7. Conclusion

The quan-qual analysis of the output sample transcripts reaches out through scrutinized observation to the following findings:

1. Produced of-genitive, -*’s* genitive and compounds hit a ratio of **5.2: 1: 0.26**, with respective totals of **321, 61 and 12**. Primed of-genitive construction against a lower frequency of the -*’s* genitive and compounds is evidenced in the horizontal output sample transcripts.

2. Twelve hits, **19.6%**, of the total output compounds are escorted with EOI’s and 1 single hit of the total 12 output -*’s* genitive is preceded by an omission. Of-genitive LC’s show higher rates of escort manifestations of low availability as omissions, unfilled pauses, lexical mischoices,
erroneous formulation and additions in 208 hits, 64.79%, of the total 321 hits. Thus, though primed by habitual centripetal stimulation, of-genitive high frequency contribute to manifestations of low production availability.

3. This finding is further ascertained by the qualitative analysis of prepositional genitive hits showing linguistic interference caused by low language separation skills. Out of the total 321 output of-genitives, 36.7% (118 hits) correspond to Arabic mudaaf constructions.

4. Manifestations of low production availability are monitored to escort of-genitive occurrences at cases of: 1. Arabic mudaaf conjoins/sequences of short information carrying signals (Units 4, 5, 8, 9, 10, 11), 2. language-specific complexity caused by Cairene Colloquial Arabic mudaaf forms with medial بناع/ة (outstanding examples are traced in Units 6,10,12,13), 3. linguistic interference of Standard/Colloquial Arabic mudaaf forms, 4. frequency of prepositional genitive as addition and generalization.

5.1 Entire omission/ erroneous formulation of prepositional genitive head noun and/or post modifier, or the whole segment and non-standard formulation of titles and posts are observed with constant of-genitive formulations corresponding to mudaaf conjoins and sequences of short information carrying signals.

5.2 A strong habitual centripetal stimulation of prepositional genitive is observed to be produced in response to the Cairene Colloquial mudaaf form with the medial بناع/ة, particularly against high processing capacity requirements imposed by input rate and informational density. Whether produced in response to standard or colloquial Arabic mudaaf forms, of-genitive construction is observed to consume a longer duration during production; EVS is lengthened; sequential segments are disturbed in consequence, resulting in imminent omissions and failures.

5.3 The output qualifier/ elaboration additions of a lot of and a number of corresponding to input numerousness hit one single occurrence. Both additions are monitored qualitatively to be used as an assist to further interpreter’s self-sense of a high language availability and /or as a delaying strategy or a generalization to manipulate memory failures of of-genitive post modifier nouns.

The study thus recommends an SI language availability enhancement of using alternative constructions semantically similar to of-genitives and to get the Arabic speaking SI students alerted to the spontaneously produced EOI’s when of-genitives are frequently stimulated.
Dr Amal Abdel Maqsoud Abu Nima

References


Appendices: Uploaded via the author’s share point: https://alsunasuedu-my.sharepoint.com/:f:/g/personal/amalabelmaqsood_alsun_asu_edu_eg/EqheZ6_1apdPTcSU035YoBn1x2JvPze6nAmXJQYCn_QQ?e=Cba68o

Appendix 1.Unit 1 Appendix 2.Unit 2 Appendix 3.Unit 3
Appendix 4.Unit 4 Appendix 5.Unit 5 Appendix 6.Unit 6
Appendix 7.Unit 7 Appendix 8.Unit 8 Appendix 9.Unit 9
Appendix 10.Unit 10 Appendix 11.Unit 11 Appendix 12.Unit 12
Appendix 13.Unit 13 Appendix 14.Unit 14 Appendix 15.a lot of Occurrences
Appendix 16.a number of Occurrences
Appendix 17.Examples 1&2

In view of the mistaken instances of transcription produced by the commonly used speech-to-text systems as Cielo 24, Veranda, SpeechTexter, Speechnotes… etc., Automated Speech Recognition (ASR) transcription of sample audios is not resorted to. Mistaken transcription of digit sequences and dialect-based pronunciation of words, auto corrections of output grammatical erroneous formulations, e.g., the digital automated insertion of /s/ in the 3rd person verb form to realize a subject-verb agreement not really produced, are clear limitations of digital audio transcription for SI empirical purposes.

Following a reverse order of searching by relying on the Arabic Mudaaf Forms as a departure point of study could have lead the entire experiment astray; this is because first, not all Arabic standard/ colloquial mudaaf forms are formulated as of-genitives, second, considerable omissions, bridging, shift reformulation of mudaaf forms are well expected to occur due to the high input rate of the present interview (138 w/m), chunk length and dense information carrying signals.

The units mentioned contain the most salient examples on the referred to EOI’s; there are other instances spread all over the output transcripts.