

### *Facets of imagery in academic and professional achievements: A study of three doctoral students*

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#### Abstract

Since the inception of the L2 motivational self system (Dörnyei, 2005), which operationalises motivation as a function of learners' future identities, the field of L2 motivation has seen a growing interest in mental imagery. Numerous studies have examined the role of a future self-guide, that is, the ideal L2 self, and have confirmed it to be powerful for explaining learner motivation (e.g., Csizér & Lukács, 2010; Dörnyei & Ushioda, 2009); however, few studies have explored how mental imagery, a key dimension of the ideal L2 self (Dörnyei & Chan, 2013), can manifest itself in actual motivated behaviour. Using in-depth interviews, the present study aims to explore the motivational capacity of the natural use of mental imagery in three doctoral candidates studying at a British university. The main research focuses on examining how imagery was employed to stimulate the participants' L2 learning and their doctoral research as well as career choice. This paper proposes a conceptual framework of types, functions, and conditions of imagery in academic and professional achievements based on the data obtained. It reveals an intriguing array of imagery types, functions, and conditions, which shape the achievement of the individuals' desired goals. Recommendations and implications for future research on imagery use in SLA are also discussed.

*Keywords:* imagery, motivation, identity, ideal L2 self

## Definition of Imagery

The ability to use imagination and mental images is a ubiquitous human phenomenon. On the one hand, the concept of mental imagery is familiar to us at a common sense level, for example, when we use parlance including *seeing with the mind's eye*, *hearing in the head*, or *visualising*. Nevertheless, there are different aspects to the concept and its definition may vary according to the emphasis of the researcher (Murphy & Martin, 2002). Investigators have drawn attention to various characteristics of mental imagery, such as the role of sensory modalities, agency, and memory. Particularly useful to the present study is the emphasis on agency, which is highlighted in Morris, Spittle, and Watt's (2005) definition:

Imagery . . . may be considered as the creation or re-creation of an experience generated from memorial information, involving quasi-sensorial, quasi-perceptual, and quasi-affective characteristics, that is under the volitional control of the imager and which may occur in the absence of the real stimulus antecedents normally associated with the actual experience. (p. 19)

For the purpose of this study, I would like to define mental imagery as the conscious or sub-conscious creation of images in the mind, which are transformational in nature. These mental pictures can be created either in the presence of relevant stimuli or in the absence of sensory input. They involve the use of multiple sensory modalities including visual, auditory, olfactory, and tactile modes.

## Imagery in Sport Psychology

It has been well established in sport psychology that imagery has motivational capacity (e.g., Martin & Hall, 1995; Martin, Moritz, & Hall, 1999; Morris et al., 2005), particularly when the stakes are high in the sports market (e.g., the U.S. sports market generates \$400 billion in revenue in a typical year; Voelker, 2013). Therefore, a whole industry of visualisation training has been developed to investigate the impact of various aspects of imagery, aiming to help athletes to achieve and maintain peak performance. Indeed, visualisation is a popular strategy among athletes, coaches, and sport psychologists (Cumming & Ramsey, 2009). For example, it has been found that 99% of Canadian Olympic athletes surveyed reported using imagery in their training (Orlick & Partington, 1988) and more experienced athletes are said to use visualisation to a greater extent than their less experienced counterparts (Ungerleider & Golding, 1991).

To fully utilise mental imagery in sports training, a number of models have been proposed in sport psychology to conceptualise the role of imagery in a systematic way (Morris et al., 2005). One of the best-established frameworks is

Allen Paivio's (1985) applied model of imagery use in sport, which provides motivational and cognitive explanations of various types of imagery. Centring on motivational functions (e.g., when an athlete visualises a positive outcome of a game) and cognitive functions (e.g., when a gymnast forms an image of the way to perform a specific move), Paivio maintains that these two functions can be categorised into general and specific levels. Since then, the concept and functions of imagery use have been further operationalised by Hall and his colleagues (Hall, 1998, 2001; Hall, Mack, Paivio, & Hausenblas, 1998; Martin et al., 1999), using the Sport Imagery Questionnaire (SIQ). In this questionnaire, five types of imagery used by athletes were identified: cognitive specific (CS), cognitive general (CF), motivational specific (MS), motivational general-arousal (MG-A), and motivational general-mastery (MG-M). These various types of imagery are used by athletes in mental rehearsal to perform different functions including imagining particular skills and movements in sports (i.e., in CS imagery), and visualising winning strategies in games (i.e., in CF imagery). Examples of motivation-related imagery included picturing goal attainment, such as winning a gold medal (i.e., in MS imagery); visualising states of being stressed, anxious or aroused (i.e., in MG-A imagery); and imagining being confident, mentally tough, focused and positive (i.e., in MG-M imagery).

The relevance of Hall and colleagues' extended framework to the present study is that it is possible to adopt several of its classifications of imagery types and functions. Its description of some motivational and cognitive imagery may be applicable to language learners and teachers (e.g., imagining goal attainments in "motivational specific imagery" and picturing being confident and focused on "motivational general-mastery imagery"). However, the applied model of imagery use in sport is only partially relevant to second language acquisition (SLA) for an obvious reason: Sport imagery training focuses on the enhancement of strategies and responses involved in motor skills and performance, which is not a concern of L2 learners and teachers. Nonetheless, it does provide a conceptual representation of what could potentially be incorporated into a framework of imagery use in SLA.

### Imagery in Second Language Acquisition

In the field of SLA, the concept of imagery/vision has been foregrounded by means of a theoretical framework: *the L2 motivational self system* (Dörnyei, 2005). This construct draws on a theory known as *possible selves* in personality psychology (Markus & Nurius, 1986), which proposes possible selves as mental representations of one's aspirations and fears (Markus & Ruvolo, 1989): People will think of what they *would like* to become, what they *could* become, and what

they are *afraid of* becoming. What is important here is that these self-guides are future-oriented and imaginative with a heavy element of fantasy (Segal, 2006).

Drawing on the theory of possible selves, Dörnyei (2005) highlights both L2 learners' future self-guides as well as their social context in L2 learning in the L2 motivational self system. The tripartite framework consists of the following components:

- *ideal L2 self*, that is, the L2-specific facet of a person's ideal self: If the person we would like to become can speak an L2, then the ideal L2 self is a powerful motivator because we would like to reduce the discrepancy between our actual and ideal selves.
- *ought-to L2 self*, that is, the attributes that we believe we ought to possess in order to avoid possible negative outcomes; this is therefore someone else's vision for a person and may bear little resemblance to the person's own desires or wishes.
- *L2 learning experience*, that is, situation-specific motives related to the immediate learning environment and experience (e.g., the positive impact of success or the enjoyable quality of a language course).

A number of validation studies have confirmed the motivational impact of this new approach, confirming the validity of these constructs (e.g., Csizér & Kormos, 2009; Csizér & Lukács, 2010; Henry, 2009, 2010, 2011; Hiver, 2013; Kormos, Kiddle, & Csizér, 2011; Magid, 2012; Papi, 2010; Ryan, 2009; Taguchi, Magid, & Papi, 2009). These findings have confirmed the ideal L2 self as a strong predictor of various criterion measures related to language learning.

Apart from the impact on learners' effort in L2 learning, the ideal L2 self is also closely intertwined with imagery. A link between these two constructs has been established through a line of research originated by Al-Shehri (2009), who conducted a survey with the rationale that learners who exhibit a visual learning style preference are more likely to possess stronger capacity for visual imagery and imagination, and can therefore be expected to develop a stronger ideal L2 self. Confirming this hypothesis, the results showed significant correlations between students' visual learning style, imagination, ideal L2 self, and motivated L2 behaviour (Al-Shehri, 2009). Follow-up studies have also revealed the multi-sensory dimension of future self-guides, suggesting that both visual and auditory sensory modalities are incorporated in the development of learners' future identities (Dörnyei & Chan, 2013; Kim 2009; Kim & Kim, 2011). Research has also established significant correlations between learners' L2 selves and their actual academic achievements (i.e., grades), and such links can be extended to learners' third language (Dörnyei & Chan, 2013). These results imply that if learners have developed an image of themselves as an effective L2 user, this identity can become a powerful driving force in their L2 learning.

In addition to these surveys, a handful of intervention studies have investigated the impact of visualisation and possible selves on L2 motivation (e.g., Fukada, Fukuda, Falout, & Murphey, 2011; Magid, 2011; Magid & Chan, 2012; Sampson, 2012). For example, Fukada et al. (2011) employed possible selves activities (e.g., sharing each other's ideal future careers with peers, discussing their future goals and using drama) in order to enact Japanese students' future selves. As a result of these interventions, there was a significant increase in the correlations between students' possible selves and their investments in L2 learning both in and outside the classroom. Similarly, Sampson (2012) used various possible tasks to develop and inform task development in the three phases of his action research. The study showed that Japanese university students found the activities that provided steps towards their ideal self, the tasks that focused on their feared L2 selves, and the ones with a social component particularly motivating. Finally, Magid and Chan (2012) and Chan (in press) have conducted motivational programmes in which both possible selves activities and visualisations were employed to enhance Chinese learners' vision of their ideal L2 self. It was found that Chinese learners welcomed the opportunity to visualise in class on the whole (Chan, in press), that learners were more motivated to learn English, their linguistic self-confidence increased, and their goals became more specific (Magid & Chan, 2012).

As seen from above, and this special issue of *Studies in Second Language Learning and Teaching*, research in L2 imagery has seen a growing interest. A range of significant conceptual foundations exploring the mechanisms of vision in language learners and teachers have also been laid with a recent book *Motivating Learners, Motivating Teachers: Building Vision in the Language Classroom* by Dörnyei and Kubanyiova (2014), who have presented the mechanisms of vision in learning a foreign/second language and the ways it can be created and maintained by the teacher. As their book is essentially theoretical in nature, the present study complements their work by further exploring what takes place exactly in the realm of imagination and precisely how mental imagery works in L2 learning and teaching. It aims to take an initial step in mapping the territory of imagery use in SLA by proposing a conceptual framework of *types, functions, and conditions of imagery in academic and professional achievements*, for the purpose of analysing the qualitative aspects of imagery exploited by three natural imagers. At this point, it is perhaps pertinent to define the meaning of academic and professional achievements in this study: Academic achievements are linked to the participants' experience of L2 learning and doctoral studies, whereas professional achievements are associated with their experience in English teaching and their vision as aspiring academics. Doctoral candidates are employed in this study because they are seen to have personal insights into

what it means to be L2 learners as well as aspiring teachers. These participants do not only have ample imaging experiences, but they also have the maturity and sensitivity to reflect upon and report the experiences of their inner world. To this end, the main research questions (RQ) are as follows:

- RQ 1: What types of imagery did the participants exploit in their academic and professional lives?
- RQ 2: What functions did imagery serve in these participants?
- RQ 3: How did these participants use visualisations in their academic and professional lives?

## Methodology

### Participants

Three doctoral students, Ivan, Chloe and Leila (pseudonyms) studying at the School of English at a British university, were recruited through personal contacts. They were invited to participate in the study, as they were known to use mental imagery spontaneously.

Ivan is a Taiwanese student in his early thirties and taught English in a junior high school in Taiwan for two years prior to the start of his doctoral degree. His first degree was in computer science, but he had changed his career trajectory by partaking in ELT training in Taiwan after graduation. The second interviewee is Chloe, who is an experienced English educator in her thirties and has taught in both senior high schools and universities in China. Having completed an undergraduate degree in English, Chloe went on to become a senior high school English teacher and later on completed a Masters degree at a British university. She then became an associate professor teaching academic English at a university in China for a number of years before starting her PhD. The third interviewee, Leila, is a young Iranian student in her mid twenties. She majored in English literature at a university in Iran and continued with her Masters and doctoral degrees in English literature at a British university.

Ivan and Chloe learnt English as a foreign language whereas Leila acquired English as a young child in England and is therefore a bilingual speaker of Farsi and English. In terms of their research focus, Ivan's research interests lie in intercultural communications, Chloe's are in SLA, and Leila's in twentieth century theatre.

### Data Collection

Individual, in-depth interviews were conducted with all participants, and these took place between June 2012 and April 2013. All three participants were in

the second year of their doctoral studies at the time of their interview. The interviews took an emic approach, which means they aimed to develop an insiders' perspective on the inner world of natural imagers (Patton, 2002). The interviews were semi-structured in nature, which allowed the interviewees to "respond to a certain set of questions" and have "the freedom to talk about what is of interest or importance to them" (Hesse-Biber & Leavy, 2010, p. 102). An interview guide was presented to the informants a few days prior to the actual interview to allow sufficient time for preparation. All interviews were conducted in English, were audio-recorded, and took approximately 30 to 60 minutes.

## Data Analyses

The interview recordings were transcribed into a nearly 15,000-word corpus. Pseudonyms were employed for the three participants throughout this paper. In addition, to ensure the validity of the analyses and for the purpose of familiarisation with the data, the transcripts were read and re-read thoroughly before the actual analysis (Harding, 2013). In the first stage of the analysis, brief notes, main ideas and a summary of different parts of the transcripts were written, which reduced the data to key points. Then, having obtained a general idea of the data; a thematic analysis was employed to examine the commonalities and differences among the data provided by the three participants (Gibson & Brown, 2009). Key phrases in the transcripts were underlined and coded into different categories. Finally, the codes were reviewed, then adjusted to decide which should be kept and abandoned. To gain communicative validity and to verify whether the findings were in agreement with the participants' actual experiences and viewpoints (Hesse-Biber & Leavy, 2011), a report of the study was sent to the participants for their comments and confirmation.

## Results

### Imagery Types

Imagery types are different groups of mental images that share particular qualities or features as identified in the participants' data. The results indicated that the informants created five imagery types, as follows: goal achievement imagery, process-based imagery, mental rehearsal, negative imagery, and the imagery of bridging cultural barriers.

**Goal achievement imagery.** Goal achievement imagery can be defined as "the perception-like mental representation of the pursuit and attainment of

a goal" (Schultheiss & Brunstein, 1999, p. 1). The results pointed to three channels for imagining goal achievements: *the imagery of passing the finishing line, the imagery of functioning as a professional, and the imagery of how a significant other would react.*

The imagery of passing the finishing line can be exemplified by one of Leila's mental images, "sometimes, I would go through what might happen potentially when I pass my viva or the day I graduate, how I would be feeling emotionally." The informants also created the imagery of functioning as a professional, of themselves taking up a particular role or profession, such as being a university teacher in the future. The following was what Chloe commented:

*If I go back to China, I plan to work as a professor at a university and then I can give a lecture in front of hundreds of students at my lecture or at a conference. I just imagined that it would happen as a routine in China.*

In addition to imagining the attainment of a final goal or already functioning as a professional, informants also pictured how their significant others might react to their success. This was mentioned by Leila who imagined telling her family the moment she got a scholarship; she had images of how she would tell them the news and what their reactions might be.

Process-based imagery. Process-based imagery involves simulating the process required to reach a goal, which could include reviewing steps that lead to appropriate changes. It also entails forming necessary action plans and remembering intentions to carry out future actions, which, in turn, will affect a person's motivation.

Process-based imagery was used by Leila, who not only imagined the outcome, but also the process of moving towards a goal. She mentioned that she would sometimes start thinking about "*how many steps [I] would have to go through before actually getting there*" and it was similar to having "*little snapshots of what [I] would be doing instead of detailed images.*" Leila gave an interesting illustration:

*If I say in my mind I need to come into the office to study or to work on Saturday, I need to get into the office through the security. That's the image I get, going through the security. I get an image of myself sitting at the desk in the office.*

Mental rehearsal. Mental rehearsal refers to times when individuals practise, rehearse and visualise a performance in their mind for a specific event. This was mentioned by all three informants, whose mental rehearsal revolved around teaching demonstrations, conference presentations, and lan-



guage practice. As a novice teacher, Ivan used mental rehearsal in practising teaching demonstrations as well as giving talks. It was found to be an effective strategy when Ivan prepared for the national selection of teacher trainees in Taiwan, as he said: *"I imagined myself giving a very good teaching demonstration in front of [the examiners]. So, I keep thinking how I can present perfectly. Actually, it's not just imagery. It's rehearsal!"* Leila also used mental rehearsal when she prepared for her presentation at an academic conference. Describing the imagery, she explained:

*In my head, there're lots of chairs in front of me and I know who's going to be attending, but I have never seen their faces. I have only read their books, but I have an image of what they look like. Sitting there, I have an image of myself there in front . . . presenting.*

Negative imagery. Most of the imagery created by the participants was positive, but some were negative. This was the case for Leila and Chloe, especially with issues about which they felt apprehensive. Leila gave an example of imagining a potential PhD supervision which she had anxieties about:

*If I have not worked enough for a potential supervision I have, it becomes a worry and anxiety for me. Then, I can have negative images of what might happen, the negative things they would say, and how the meeting would go.*

Chloe also had fears of not completing her doctoral degree:

*If I fail my PhD study, then I'll have to go back to my old university. My colleagues will gossip about me, "so what happened to her when she was in the U.K.? She didn't even get a PhD degree!"*

Negative imagery had both preventive and motivational functions for these two participants, which means that it can help people to avoid a particular scenario by consciously steering them in a different direction.

Imagery of bridging cultural barriers. Imagining conversing with foreigners can also be a common experience for language learners. This was the case for Chloe when she was a senior high school and undergraduate student. As she did not have much exposure to the outside world or any contact with native English speakers, she would imagine different situations and various topics to discuss with them. She commented, *"my images I can say were quite vague, but I know that I had imagery of speaking skilfully, fluently and proficiently to foreigners or to speak at a conference."*

It is worth noting that the imagery of bridging cultural barriers was as-

signed as a separate, independent imagery type because achievement in L2 learning is in itself slightly different from other achievements. For example, to imagine having a conversation with a native English speaker can be categorised as goal achievement imagery or process-based imagery depending on the construal of the imager. In other words, in L2 learning, such a scenario can be viewed as an interim process towards a higher goal or a goal in itself.

### Imagery Functions

The results revealed four imagery functions: motivational, preventive, cognitive, and affective functions.

**Motivational functions.** All three participants mentioned the motivational impact of using imagery, including the effect it had on their behaviour. For example, Ivan commented about envisioning himself as a great teacher, which motivated him to prepare for his exams to the point that he often forgot his meals. As he was deeply immersed in his readings, he would always think to himself, "*this [material] will help my teaching and this will help my students.*" In addition, as a doctoral candidate, Ivan imagined himself finishing a first draft of his thesis by the end of his second year and he said, "*this whole year, I just keep thinking about it, envisioning the life now.*" Ivan had a specific goal of writing a certain number of words every day in order to complete his first draft on schedule; something which he managed to achieve.

**Preventive functions.** Leila and Chloe sometimes imagined negative scenarios and suggested that this type of imagery could have a preventive function. Leila mentioned, "*it makes me try to avoid that situation because, in my mind, I create how horrible it might be and then I try to avoid it!*"

**Cognitive functions.** Imagery was used for two cognitive functions: as a mental rehearsal for a particular event, or as a writing strategy. Mental rehearsal was used for practising presentations and teaching demonstrations and such examples were mentioned earlier on. As well as for mental rehearsal, imagery was also employed as a strategy during a person's writing process, which can be demonstrated in the case of Leila:

*When I write my actual article, my image would get more detailed of exactly how I would present. Perhaps like particular bits of images I might worry about or I think are particularly good. I would think about what people's reaction might be to that.*

Affective functions. Creating imagery in a person's mind was found to have an impact on his or her affect. For example, Leila would usually feel quite excited after envisioning positive imagery as she mentioned, "*it makes me feel quite happy. It makes me feel like that it'll be great. It makes me feel excited almost.*" This was also the case for Chloe, who would feel happy and slightly exhilarated after visualisation.

### Conditions of Functional Imagery Use

The results of this study indicated various conditions that need to be fulfilled for imagery to attain a powerful motivating capacity. The first was the need to create imagery that is linked with a strong desire; specific; grounded in reality; and accompanied with a concrete plan. In addition, the imager should have imagery that is not competing; they should stay focused while working on a task; keep the imagery alive; be aware of the discrepancy between imagination and reality; not give up when the reality is different from their imagination; and create mostly positive imagery rather than negative. These conditions are discussed in more detail below.

Linking it with a strong desire. It is very clear that all three informants were not just experiencing positive imagery but had strong desires that accompanied their visualisations. For example, Leila mentioned that her imagery usually involved scenarios that she aspired to or she wished to happen. This was the same for Chloe who said, "*imagery emerges quite naturally especially when I am longing for something!*"

Using imagery that is specific. It is important for imagery to be specific and this can be epitomised by Ivan, who said that

*if the vision is strong, it has to be very specific. For example, wanting to become a teacher is quite general, but if I put it in more specific terms, it will be I want to pass this specific exam. Because if I pass the exam, that's a stepping stone and I can go further.*

Having a concrete plan. Added to the previous point is the requirement of accompanying imagery with a concrete plan. All three informants knew the goals they would like to attain and they had very clear plans or roadmaps so that they knew exactly what to do next. This was the case for Leila who said:

*I am a big planner, so I would say usually when I daydream about something, afterwards because I so want it to happen, I start thinking about how many steps I would have to go through before I actually get there.*

Creating imagery that is grounded in reality. In order for the imagery to achieve its function, the individual has to believe that the images are actually possible and are grounded in reality. This point was emphasised by Leila:

*For me, my imagination needs some grounding in truth. If it's something I construct out of the blue or based on my own imagination, then I don't think it's possible and it's not something I want to do.*

Having visualisations that are in harmony. It is also vital that people's visualisations are in harmony with each other so that neither one nor the other becomes improbable or even impossible to achieve. When individuals have desires that are incompatible in reality, they may start visualising imagery that is in competition with other visualisations. This was the case for Ivan, who imagined being a national committee member in the Ministry of Education and also a county committee member for English language teaching; however, it was impossible to be in both committees in reality: *"For example, if I want to be in a national committee, that means I can't do things for my school. So, it's a dilemma because sometimes I envision this and sometimes I envision that."*

Staying focused. For those who are natural imagers or those who would like to use imagery for motivational purposes, visualisations could become a distraction especially when a person should actually be working or staying on task. This was mentioned by the informants such as Chloe who said, *"I have imagery when I am not studying, but when I am studying, I don't think I have much imagery. Even when I am distracted for a while, I will tell myself, 'OK, go back to the right track!'"*

Keeping the imagery alive. A key to keep imagery alive is to create visualisations frequently and regularly. In other words, if a goal was tied in with a strong desire, the informants visualised such a scenario regularly and frequently. This was the case for Ivan, who was regularly visualising himself achieving different goals, such as passing an entrance exam or completing the first draft of his PhD thesis. He commented, *"I have done this vision thing for so long, for so many years. Sometimes, [I do it] every couple of days, every three days, every other day, or every day."* This suggests that the frequency of imagery could be a strengthening factor.

Being aware of the discrepancy between one's imagination and reality. As future-oriented imagery has an element of fantasy, individuals should be aware of the discrepancy between where they would like to be and where they actually

are. Its importance can be illustrated by what Chloe said, *"I am quite aware of the discrepancy between the present, the reality and the outcome. So, that's why I can be quite driven to work harder. Otherwise, it's only a daydream."*

Not giving up when the reality is divergently different from one's imagination. This condition is especially significant for teaching or academic achievements, which depend not only on diligence but also on various environmental factors. Sometimes, the resulting outcome could be disheartening for the informants; therefore, it is essential *not to allow oneself to be defeated*. As Ivan spoke about the disparity between his imagery and the real teaching situations, he commented, *"I was disappointed for two seconds, but I keep envisioning being [a great teacher]!"*

Creating mainly positive visualisations with a modicum of negative ones. All three participants stayed confident and tried to create positive visualisations instead of negative ones. This is likely to create good energy and emotions for imagers, as Leila remarked: *"As long as I am not feeling anxious, I try to create positive imagery."*

## Discussion

The results showed an interesting array of imagery types and functions, as well as the conditions of functional capacity for imagery use. Regarding RQ 1, which examined the types of imagery the participants exploited in their academic and professional lives, five imagery types were revealed: goal achievement imagery, process-based imagery, mental rehearsal, negative imagery, and imagery of bridging cultural barriers. In fact, the classifications of imagery types have been conceptualised differently in various models in sport psychology, for instance, the applied model of imagery use in sport (Paivio, 1985), its extended model (e.g., Martin et al., 1999), and the model of the content of imagery (Munroe, Giacobbi, Hall, & Weinberg, 2000). For example, in the extended version of the applied model of imagery use in sport, imagery type is an amalgam of both type of the imagery used by the athletes and the functions it served (Martin et al., 1999), whereas in the model of the content of imagery type, it refers to the visual, kin-aesthetic, auditory, and olfactory sensory modalities. In this study, the categorisation of imagery types was based on the informants' data concerning their natural use of mental imagery in their L2 learning, academic, and professional achievements. These were grouped according to the themes that emerged from the data, representing the content and the nature of imagery use.

As expected, individual variability was observed in the participants' use

of imagery types. For example, although all participants described their goal achievement imagery in great detail, only Leila mentioned the use of process-based imagery (i.e., imagining coming into the office to study or to work on Saturday). In fact, it was rather surprising that the participants, who were highly motivated and successful, employed mainly goal achievement imagery, since research in psychology points to the superior motivational effects of process-based over outcome-based imagery<sup>1</sup> (Pham & Taylor, 1997; Taylor, Pham, Rivkin, & Armor, 1998). Nevertheless, as was seen in this study, goal achievement imagery can also generate motivational power, if it is specific and accompanied by concrete plans, regardless of whether these plans were visualised or were merely thoughts. This could be supported by Conway, Meares, and Standart's (2004) conception that mental imagery is "a type of mental representation, which is specialised for representing information about goals" and is a "language of goals" (p. 525). Moreover, goal achievement imagery (e.g., to imagine winning and receiving awards) may serve a motivational function during a "long period when objective incentives and reinforcements are likely to be rare or improbable" (Paivio, 1985, p. 245), which could be the case whilst learning a second language or studying for a doctoral degree.

Apart from the pattern found, related to goal achievement imagery, the data revealed that most of the mental images created by all three participants were positive. Indeed, all the participants indicated that positive imagery came more naturally to them, and Leila would even deliberately create positive visualisations whenever possible. As for the use of negative imagery, two participants, Leila and Chloe, mentioned generating small amounts of negative imagery, which had both preventive and motivational functions. That is, this type of imagery flagged up alerts so that they could change their course of action in order to avoid undesirable situations.

Regarding the possible impact of negative imagery, experts in sport research are divided as to whether it is beneficial or detrimental to human performance (Dörnyei & Kubanyiova, 2014). Indeed, sport psychology literature suggests that creating negative imagery can have an adverse effect on performance in competitive golf putting, causing greater errors (Taylor & Shaw, 2002); on the other hand, it can also prepare professional skiers for worst-case scenarios (Hale, 2005).

Using the same reasoning, it seems that whether negative imagery has

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<sup>1</sup> *Outcome-based imagery* essentially carries the same meaning as *goal achievement imagery* in that both emphasise the outcome of an event or a desired goal. *Goal achievement imagery*, a term that is also used in sport psychology, is employed in the framework of this study to highlight the importance of personal goals in an outcome.

advantageous or adversary effects depends on which particular imagery type is employed and what it is used for. For example, for the purpose of mental rehearsal in which a person is preparing for an individual academic presentation or teaching demonstration, having negative imagery may create unnecessary negative emotions that are associated with the performance. In this case, there may be detrimental effects, as can be seen in Taylor and Shaw's (2002) study, which do not allow individuals to perform at their best. However, for situations that are somewhat unpredictable and highly dependent on others, such as teaching a disruptive class or answering questions in a viva examination, negative imagery may have the function of helping to create cognitive strategies. This function is similar to the imagery of *cognitive general* in the applied model of imagery use in sport, which refers to the planning of winning strategies in games (Hall et al., 1999). This could be particularly useful for novice teachers who are apprehensive about dealing with a difficult language class. Negative imagery may help them to imagine cognitive plans or strategies to manage different situations. It may also act as a desensitisation procedure (used in clinical psychology) as individuals handle fearful situations or stimuli (Dörnyei & Kubanyiova, 2014).

It is worth reiterating that the imagery of bridging cultural barriers was assigned as an independent imagery type, because imagery in L2 learning could involve both goal achievement imagery or process-based imagery depending on the understanding of the imager. However, regardless of whether it is connected to goal achievement imagery or process-based imagery, the imagery of bridging cultural barriers does have the effect of motivating contact with people from another culture. This is demonstrated by a recent study which showed that an elaborated imagery of social contact with another ethnic group may enhance the intention of such contact (Husnu & Crisp, 2010).

Regarding RQ 2, which investigated the functions imagery served in the participants, this study indicated that imagery may serve multiple functions subconsciously, namely motivational, preventive, cognitive, and affective functions. As the participants were natural imagers, imagery was either conjured up spontaneously or was created consciously. In both cases, the functions of their imagery may depend on what the images meant to the individual personally (Murphy & Martin, 2002).

As suggested by the interviewees, most imagery was reported to be geared towards a motivational or rehearsing function. In contrast, preventive, strategic, and affective functions were mentioned with less frequency and emphasis. The asymmetrical prominence of motivational and rehearsing functions may be related to the high levels of motivation demonstrated by these participants, who had a strong desire to succeed in their studies and in their

career development. As with other features, the motivational capacity of mental imagery has also been verified in various studies within sport and health psychology. Its effects include significantly increasing the time to practise golf-putting on a self-initiated basis (Martin & Hall, 1995), reducing alcohol consumption in undergraduate students (Hagger, Lonsdale, & Chatzisarantis, 2012), and increasing fruit consumption among low fruit consumers (Knäuper, McCollam, Rosen-Brown, Lacaille, Kelso, & Roseman, 2010).

With regard to the function of mental rehearsal, the data in this study suggests that the participants used it as an effective strategy in enhancing their motivation and performance in academic presentations, teaching demonstrations as well as whilst conversing with native English speakers. Past research has also confirmed its effectiveness in situations such as job interviews (Knudstrup, Segrest, & Hurley, 2003), teacher training (Fletcher, 2000), and L2 learning (De Guerrero, 1999). For example, Knudstrup et al. (2003) conducted a study in which participants were instructed to use mental imagery techniques to simulate a job interview scenario. It was found the subjects who used mental imagery performed better in the interview and were more relaxed than those who did not use the technique. In another example, Fletcher (2000) gave an account of how imagery techniques were used to “sensitise some novice teachers to the potential of classroom teaching” (p. 235). These student teachers enhanced their ability to assess pupils’ progress and to stimulate their imagination. Imagery is a way to help student teachers to explore the various choices in the educational setting and to understand the complexities of their new roles. In terms of L2 learning, a questionnaire survey conducted by De Guerrero (1999) showed that L2 learners used inner speech, which served cognitive functions such as texts planning, mnemonic, and self- and other-evaluation. These studies confirmed that imagery can be effectively used for the function of mental rehearsal.

The last research question, RQ 3, which examined the conditions of motivating functional imagery use, emerged naturally through the course of the interviews as I was struck by the fact that some of the points raised by the participants (without prompting) were highly compatible with the “conditions for the motivating capacity of future self-guides” proposed by Dörnyei and Ushioda (2011). Images and senses are said to be integral components of the ideal L2 self, as Dörnyei (2009) maintains that it is the “experiential element that makes possible selves larger than any combinations of goal-related constructs” (p. 15). From the data, it was noticeable that the participants were aware of the difference between daydreams and motivational imagery and were able to delineate what it meant for the imagery to have a real motivating impact on their behaviour. Some of the conditions that were raised as a con-



conscious approach by the participants included that imagery should be specific and vivid; that imagery should be perceived as possible; that imagery should be accompanied by concrete roadmaps; that there should be awareness of the discrepancy between one's imagination and the reality; and that the participants should be keeping the imagery alive.

Despite the similarities in some of the conditions, the condition of *staying focused* was more specific to imagery use in the current context. In sport psychology, maintaining concentration on various environmental cues as well as internal strategies is important for an athlete (Hale, 2005). Similarly, the ability to maintain concentration and pay attention to important tasks at hand is an important criterion for aspiring L2 learners and teachers, especially when the use of mental imagery could become a distraction at times.

Finally, it is important to discuss the distinction between the conditions *creating imagery that is grounded in reality* and *being aware of the discrepancy between one's imagination and reality*. At first glance, these conditions seem contradictory, because, on the one hand, imagery must be highly probable and constitute a likely possibility in order to be motivating, but, on the other hand, there should be a discrepancy between a person's imagination and the reality. This notion has been discussed by Dörnyei and Ushioda (2011), who suggest that if the future self is not sufficiently different from the current self, the individual may feel it unnecessary to exert extra effort. Research has also suggested that comparison of the current self against the possible self is a mechanism for the latter to induce actions (Van Dellen & Hoyle, 2008). At the same time, it is also vital for the future self to be perceived as plausible because "a sense of controllability – that is the belief that one's action can make a difference – is an essential prerequisite" (Dörnyei & Ushioda, 2011, pp. 83-84). Therefore, imagery of the future, if pitched at the right level, may elucidate the opportunities individuals perceive to be available, as well as the expectations they have for themselves.

## Conclusion

The present study essentially draws upon research in sport psychology to inform understanding of and to investigate imagery use in the field of SLA. Its strength lies in taking an initial step in mapping the territory of how individuals exploit imagery spontaneously in their academic and professional arenas. This paper aims to offer categories of essential components which could be keys to the functional use of imagery, which is a new and relatively uncharted area, providing an in-depth description of how exactly imagery was used by three doctoral students.

In the future, researchers may explore the relationships between different imagery types, functions and conditions. Although not a key focus of the present study, some initial signs here suggested that each imagery type may serve one or more functions. For example, imagery of mental rehearsal may serve the functions of motivating oneself and rehearsal simultaneously; it may also have the effects of influencing affects as a result of repeated mental practice (Nordin & Cumming, 2008). Understanding the exact relationships between these variables may help practitioners and researchers to devise interventions and training more effectively and systematically.

The framework proposed in this paper is by no means comprehensive and the classifications are not exhaustive, as it is based on the data obtained from few participants. It has also taken a macro perspective to investigate imagery used in different fields including individuals' L2 learning experiences, their academic achievements as well as professional arena. Future research could investigate the subject with larger scale, quantitative methods and pay attention to a specific area to gain in-depth insights into how learners and educators may use imagery for the purpose of L2 learning, teaching, and professional development respectively.

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