The Complexity of Learner Agency

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Successful language learning depends crucially on the activity and initiative of the learner (van Lier 2008: 163). However, before a learner engages their agentic resources and chooses to exercise their agency in a particular learning context, they have to hold a personal sense of agency – a belief that their behaviour can make a difference to their learning in that setting. In this article, I examine the construct of learner agency through the lens of complexity theory. I attempt to show how a learner's sense of agency emerges from the complex dynamic interaction of a range of components in multiple levels of context. Considering longitudinal data from a single case study of a tertiary-level EFL learner, the first stage of analysis shows how learner agency needs to be understand as being situated contextually, interpersonally, temporally and intrapersonally. The findings highlight the importance of considering agency from a holistic perspective. The second stage of analysis focuses on one fragment of the agentic system, namely learners' belief systems. It examines the complex and dynamic interaction of a learner's self-beliefs, beliefs about language learning including their 'mindsets', and beliefs about contexts. Together both sets of findings suggest the potential merits of viewing agency as a complex dynamic system and raise important questions about its nature and development. The article concludes by discussing the challenges facing research employing a complexity perspective and the need to consider the practical benefits of such a view for pedagogy.

Keywords: agency, beliefs, complex dynamic system, case study

1 Introduction

Successful language learning depends crucially on the activity and initiative of the learner (van Lier 2008: 163). However, before a learner engages their agentic resources and chooses to exercise their agency in a particular learning context, they have to hold a personal sense of agency – a belief that their behaviour can make a difference to their learning in that setting.

In this article, I wish to explore dimensions of learner agency as a complex dynamic system. Considering longitudinal case study data, I will firstly examine the multiple ways in which agency can be conceived of as being situated, beyond contextual situation. In doing so, I intend to add more detail to the picture of agency as a complex dynamic system that I developed in an earlier

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article (Mercer 2011a). Secondly, this paper will focus in particular on one especially salient dimension of a learner's agentic system, namely their belief systems. I will conclude by reflecting on the challenges posed by taking a complexity view of agency for researchers and in respect to the potential implications for pedagogy.

2 Defining agency

Agency is a hypothetical construct like motivation and intelligence. It is an indication of its inherent complexity that conclusive, widely-accepted definitions are so difficult to find. Indeed, how agency is conceptualised, defined and what significance it is assigned has been the subject of numerous theoretical and philosophical debates. Typically, differing definitions tend to reflect varied theoretical perspectives, e.g., a frequently cited definition is agency as "the socioculturally mediated capacity to act" (Ahearn 2001: 112), which emphasises the situated nature of agency in sociocultural terms and the role of mediation. However, the simplicity of the expression *capacity to act* also belies the complexity of what such latent capacity could involve. Whilst an individual's capacity to act is widely accepted as being socioculturally, contextually and interpersonally mediated, it also needs to be understood in terms of a person's physical, cognitive, affective, and motivational capacities to act. Along the lines of such thinking, Gao's (2010) definition conceives of agency as involving an individual's will to act as well their capacity to act in sociocultural terms. Essentially, definitions need to highlight the multicomponential, intrapersonal nature of agency as well as the role of socioculturally-mediated processes.

For researchers, it is important to be able to recognise or define agency when examining data. In my own work (Mercer 2011a), I have defined it as being composed of two main dimensions that cannot meaningfully be separated but which it is useful for coding and analytical purposes to distinguish between. Firstly, there is a learner's sense of agency, which concerns how agentic an individual feels both generally and in respect to particular contexts. Secondly, there is a learner's agentic behaviour in which an individual chooses to exercise their agency through participation and action, or indeed through deliberate non-participation or non-action. Agency is therefore not only concerned with what is observable but it also involves non-visible behaviours, beliefs, thoughts and feelings; all of which must be understood in relation to the various contexts and affordances from which they cannot be abstracted.

3 Agency: Contexts and affordances

At this point, it is important to clarify understandings of context and affordances. Although there is a tendency to refer to contexts as if each were a single unified concept, they are themselves neither static nor monolithic (Funder 2001). Instead, they need to be understood as representing dynamic systems composed of a multitude of components which can combine and interact in complex, unique ways. In referring to the important role played by contextual

factors, care must to be taken not to oversimplify their character. Research should consider more closely which aspects of contexts, possibly in combination, and to what degree may be affecting and being affected by learner agency.

A particular contextual concept that is crucial to understandings of agency is affordances. These represent the interaction between contextual factors (micro- and macro-level structures, artefacts) and learners' perceptions of them and the potential for learning inherent in this interaction. The learner makes personal sense out of what they encounter and uses affordances in ways that are personally meaningful and relevant. Essentially, contexts represent 'latent potential' until learners interact with them, which van Lier (2004: 95) refers to as "relations of possibility". Agency thus emerges from the interaction between resources and contexts and the learners' perceptions and use of them.

Whilst much research and especially sociocultural perspectives have emphasised the important role of contexts, it is important to note the processes of mediation inherent in constructs such as affordances. Bandura (1989: 1175) explains that "the capacity to exercise control over one's thought processes, motivation, and action is a distinctly human characteristic". In other words, learners are not just reactive to context but as complex human beings they make sense of and engage with contexts and can also change and influence contexts. The relationship between an individual and their surroundings is one of co-evolution as both mediate, affect and are affected by the interaction. Bandura's (1989, 2008) social cognitive theory, for example, proposes a triadic model of human behaviour in which (1) intrapersonal (biological, cognitive, affective and motivational), (2) behavioural, and (3) environmental factors interact within a system of triadic reciprocal causation. From this perspective, primacy is not assigned to context or the individual but rather a person's agency should be viewed as emerging from the interaction between the learner as a physical, psychological being and multiple contextual systems. As such, research needs not only to appreciate the nature of the contexts in which the learner finds themselves (on both macro and micro-levels and in terms of their own multidimensionality), but there is also a commensurate need to understand intra-learner processes which mediate and are interrelated with the contextual affordances from which an individual's agency emerges.

4 Agency as a complex dynamic system

Although there are different types of approaches to complexity perspectives, some more mathematically-based than others (Manson 2001; Richardson & Cilliers 2001), all complexity perspectives essentially embrace organic, holistic models composed of complex dynamic systems as opposed to more traditional linear models (cf. Morrison 2008: 16). Fundamentally, a complex system is composed of several interrelated components, each of which may itself be a complex system. Contexts and the environments are seen as integral parts of a complex system, rather than as external variables impacting on the system in a linear unidirectional manner from outside. Another of the main characteristics of a complex system is its dynamic nature. Everything within the system is in a constant state of flux. This can lead to either sudden or gradual changes in the system as a whole and to the ways in which the components of the system

interact or it can lead to the system adapting and generating a form of 'dynamic stability' (Larsen-Freeman & Cameron 2008: 43).

Central to this understanding of dynamism is the concept of emergence. This refers to changes in a system's state whereby the emergent state of the system is different to its prior state and cannot be reduced to or explained by its individual components or the sum of the separate effects of interactions between individual components. Emergence means that all of the factors in the system interact and combine to generate a new state of the system. Therefore, how the interrelated parts function together collectively as one organic whole cannot be assumed from an understanding of the individual components of a system. As components are interdependent with each other, changes in one part of the system will lead to changes in other parts of the system and hence complex systems are typically described as being non-linear. As Dörnyei and Ushioda (2011: 37) explain, "because of the multiple interactions of the system constituents – which also involve environmental factors – the system is constantly in flux, but the direction of change cannot be ascribed to any single variable in isolation as it is a function of the overall state of the system". There is no one single cause of change but causality becomes decentralised as it emerges from interactions in ways which may be difficult to predict, although through processes of self-organisation, patterns in a system's behaviour are potentially discernable.

Considering these characteristics of complex dynamic systems, I found many were reminiscent of the nature of agency that I observed in my daily interactions with my learners. Therefore, in an earlier study (Mercer 2011a), I considered longitudinal case study data to examine whether it would be justified to view agency as a complex dynamic system and what features such a system might comprise. The study found that learner agency appears to emerge from the interaction of several factors such as self-concept, beliefs, motivation, affect and self-regulation. It also showed that agency is interrelated with contexts at different levels ranging from broader contexts such as the sociocultural and educational contexts through family and classroom contexts down to the level of immediate interactional contexts. The article suggests that there is not one single component which causes the learner to exercise her agency in a certain way, but rather it appears to emerge from a series of multiple, interconnected causes which can interact in unpredictable ways and can vary in their relative significance. It concludes by suggesting that reframing agency as a complex dynamic system appears to perhaps be the most appropriate way to understand the findings.

Thus, based on my previous research and consideration of the literature, in this article I conceive of agency as a complex dynamic system. In order to add more detail to the picture emerging from my earlier study and to better understand the nature and complexity of learner agency, this study re-examined the case study data in light of two new research questions; one more general and one more tightly focused on one particular aspect of the system.

5 Research context

When researching a complex dynamic system there is a need to strategically simplify the complexity in order to research the system (van Geert 2008: 185). Thus, the system under investigation needs to be bounded in some way for research purposes, whilst consciously acknowledging its interconnectedness with a wider range of systems and further subsystems beyond the scope of the particular study (Larsen-Freeman & Cameron 2008: 35). In this study, the focus is on a single case study of a female tertiary-level language learner. Although the analysis concentrates on her sense of agency in respect to her language learning, it must be kept in mind that as a holistic being her agency also is interconnected with other aspects of her life, a range of domains, and multiple contexts (see Mercer 2011a).

5.1 The participant

The case study participant was a 20 year old female student at an Austrian university studying two languages, English as her major and Italian as her minor, in order to become a teacher. At the outset of the study, Joana's (her chosen pseudonym) English was high B2, low C1 according to the European Common Framework of Reference[1]. Her Italian was reported to be A2 which is the admission level at university for her course of studies. Prior to commencing her studies, she spent several weeks as an au-pair in the USA. During the research period, she spent a semester (6 months) studying at an Italian university and began to learn Latin, which is a compulsory subject for language students in Austria.[2]

5.2 Method

This study is based on case study data generated through a series of 21 in-depth, informal interviews conducted in English over a two-year period and supplemented by three written texts. In line with calls for more 'person-in-context-relation' perspectives on the learner (Ushioda 2009), a case study enables a researcher to gain a detailed, situated and holistic understanding of an individual which can thus facilitate insights into complex aspects of a learner's experiences and psychology. Given the definitions of agency provided earlier in the article and the recognised need for situated studies, a case study would seem to offer an ideal approach to generating data suitable for consideration from a complexity perspective. Whilst this case study only examines one individual's experiences and psychology, it is hoped that its findings can offer rich insights which can be used to formulate ideas and hypothetical theories that can be explored, confirmed or refuted elsewhere.

5.2.1 Analysis

Initially the data were analysed in line with a grounded theory approach which allows for an analysis that respects and preserves the holistic, situated nature of the data and avoids imposing pre-formed hypotheses on the data (Charmaz 2006). In the aspects of the data reported on in this paper, the data and initial

codings (Mercer 2011a) were re-visited to provide more detail to the emergent picture of the complexity surrounding learner agency. Specifically, this study focused on two new main research questions:

1.   In what ways can this learner's agency be thought of as being situated?
2.   What role do beliefs appear to play in the learner's agentic system?

In respect to the first research question, the data were examined to explore the possible ways in which learner agency could be conceived of as being situated, as inspired by work on the situated self (Mercer 2012), and to extend understandings of 'context' in the agentic system. Building on the initial broader grounded theory coding and analysis, the analytical focus for this question concentrated on a content and relational analysis of codes and supercodes seeking insights indicative of the situated nature of agency.

In respect to the second research question, the analysis again began with the initial grounded theory codes, which revealed various learner beliefs to be one of the most common codes and thus most salient elements in the data. Categories of beliefs were then established in the data through a series of further coding and re-coding. The analysis then focused on considering the possible ways in which these beliefs seemed to interrelate with the learner's sense of agency and reported agentic behaviours as well as each other.

In terms of units of analysis, I initially employed one code for agency but soon separated this into two codes. The first was for 'sense of agency', in which she indicates a sense of feeling in control and an ability to influence her learning, and the second was for 'agentic behaviour', in which I examined reported incidents where she appears to make decisions, take control, take actions, play an active role in guiding and directing her learning processes, language contact and behaviour (Mercer 2011a). I came to view these as two dimensions of the same system. In reporting the findings, it is sometimes appropriate to report on both collectively as agency or the agentic system; however, depending on the focus of the analysis and its findings, sometimes only one dimension is discussed explicitly.

6 Findings

6.1 RQ1: Agency as situated

The first stage of data analysis sought to describe the 'situated' nature of learner agency. The data suggest that it can be conceived of as being situated in four main ways: contextually, interpersonally, temporally and intrapersonally (including embodied).

6.1.1 Agency as contextually situated

As expected from the definitions above, the data show how Joana's agency is interrelated with and cannot be abstracted from multiple layers of contexts. Firstly, its contextually situated nature is reflected in the concept of affordances which play a crucial role in the emergence of agency. Joana believes strongly in

the importance of speaking and the need to have social contact with a native speaker. It thus becomes apparent how the absence of such a person in respect to Italian leads her to feel that her agency is subsequently hindered by this:

> I think if I would find, or if I found if I found an Italian friend it would be the best thing for me because you can, you know, I mean through talking you really learn a lot I think I learn, probably, I mean for reading too and everything, but if you have something which motivates you then you will more likely go up to, you know a library or to a teacher and ask for books or whatever …

However, in addition to the perhaps more usual sociocultural and educational contexts and their artefacts and affordances, the data show that contextually situated also involves other, perhaps less typical dimensions of contexts such as, the weather or time of year. In the extract below, it is possible to see how these affect Joana's sense of agency and willingness to engage in certain behaviours. For example, she reports being more active work-wise in winter than summer because she does not go skiing (a popular pastime in Austria) and prefers running and so tends to stay indoors and do university-related work when it is cold:

> I'm not very, very motivated when it's really hot outside so I'd say in winter really I am more motivated because I have to be inside and what should you do inside when it's really, you know, when it's cold, freezing cold and you can't go running and you can't do really anything else and I am not that much of a skier so …

This data extract draws attention to the importance of holistic perspectives in understanding learner agency. Here it is clear how Joana's agentic behaviour reflects not only contextual characteristics but also aspects of her entire life such as her hobbies and interests, as well as the need to set personal priorities and balance commitments and interests (cf. van Geert 2008: 187).

Similarly, Joana's agency needs to be understood as contextually situated in respect to a range of domains beyond just EFL. As the data extract below illustrates, her agency also emerges from cross-domain comparisons and suggests her agency in respect to different languages may be interconnected:

> I find it hard to make progress in Italian because I really love English and I'm into English and I love talking in English and I feel like, ahm, I find it hard to talk in Italian because I've nobody to talk to and there is no Italian Stammtisch (regular's table at a pub) and so all the sort of social part, it's lacking the social part so … I have no sort of friends, Italian friends I could talk to.

The situatedness of agency in contextual terms also extends down to more micro levels of interactional contexts. For example, Joana explains often how her willingness to use and comfort in speaking the language depending on her interactional partner:

> … the Canadian student I met, he is always talking to me, ahm, and he's using more expressions and I think I feel more confident talking to him because he has a kind of American accent. He used to live in America before, so, ahm, he pronounces words differently to British people, obviously, right? And when I start talking with him I just really get into it and I can talk really quickly and I have no problems.

Indeed, this interactional level of contextualisation highlights the important role of other people generally in facilitating, inhibiting, affecting and co-constructing learner agency. As a result, the next level of analysis considered in more detail how learner agency may be interpersonally situated beyond interactional partners.

6.1.2 Agency as interpersonally situated

In respect to specific significant individuals, Joana highlights teachers in particular as being able to facilitate or inhibit her language learning related agency through their behaviours and the affective climate they engender in their classrooms. However, Joana's response to her teacher's behaviour is not straight-forwardly predictable. As can be seen below, Joana talks about a teacher who she perceives as being intimidating. She is convinced that this teacher does not like her and so defiantly decides to prove to her that she will succeed in spite of this. As a result, Joana makes a conscious decision to speak up more in class and actually her perceived confidence appears to improve as a result:

> About my Italian, I feel a little more confident now because I'm really taking part actively in that oral course and although I know she doesn't like me, I don't care, I just take part in it and I just feel like, I don't care … I'm not going to let myself be intimidated.

Another aspect of the interpersonally situated nature of agency concerns how an individual uses others as a frame of reference in forming their own sense of personal agency through the use of social comparisons:

> I know that we have one native speaker or a girl who was brought up in Canada and I think it was not fair to use that letter as an example because we are all not native speakers, I think it's a difference if you're a native speaker then you have these phrases (…) Yeah, there were a few you know nice turns of phrases and things so I thought it's a really good letter but I'd never put it that way, not at that stage (…) I'd be able to aim for it, I'd be able to improve but I won't be able to write it like that because you need the feeling.

This data extract is particular interesting in highlighting the potential effect of native-speaker models on learners' self-confidence, motivation and goals and ultimate sense of agency. It is possible that models of language or learning behaviours that are perceived as unrealistic or unattainable may be disempowering for learners and demotivating, thereby impacting negatively on their agentic sense of self to achieve such goals (Mercer 2011b).

The final interpersonal dimension of agency evident in these data concerns collaboration and working with partners and raises important questions about the relations between individual and collective agency:

> J   I know with Ines, for example, we studied for grammar, for the grammar exam and for phonetics and phonology and we did a very, very good job and we could, you know, help each other a lot.

> S   Excellent.

> J   I knew things she didn't know and the other way round so we could really help… It was like peer work a bit, something like that, and we had both all our papers and all our things and we compare it.

Whilst significant others can be influential in hindering, enhancing or mediating a learner's sense of agency, it remains unclear how individual learner agency may co-evolve when individuals cooperate and work together and how it may combine and generate a collective sense of agency. Questions therefore remain about the points at which agency is best viewed as more of an individual person construct and when potentially as a collective construct (cf. Bandura 2000).

6.1.3 Agency as temporally situated

It is clear that one's sense of agency and beliefs about appropriate agentic behaviour stem from how one interprets past experiences. As such, Joana's agency also needs to be understood in relation to the temporal dynamics of her ongoing life history and can be thought of in this sense as temporally situated:

> I learned a lot through listening to the radio and I am going to carry on listening to the radio now.

In a prospective sense, agency can also be viewed as temporally situated in relation to her goals and future self images (cf. Dörnyei 2009) as well as her expectations of events:

> And I was, you know, thinking of just reading one book a week, I'm going to make this to my aim and no matter if it's just for the literature Fachprüfung (exam) or if it's just for my pleasure, I'm going to read one book a week and I'm going to stick to that right now because I have to really force myself to read...

However, agency is not only temporal in terms of its position in the ongoing time thread of this learner's life history, but it can also be seen as temporally dynamic as it varies across time. Firstly, her agency appears to be dynamic across time depending on contextual factors. For example, in the extract below, it becomes apparent how Joana's willingness to engage in any action is hampered by her tiredness:

J   Yeah, I think there was one class where I didn't feel like talking so much and I felt like I did something wrong, I didn't really join the class conversation that much than I used to do but before I had …

S   And do you know why you felt like that on that day?

J   I can't remember, I was probably really stressed out or not in a good mood or something like that.

Secondly, the data indicate that her agency changes across time according to changes in other parts of the system such as changes in motivation, affect and beliefs. In other words, Joana does not have one constant static degree of agency but rather, it is continually fluctuating, changing and adapting to variations in other aspects of the system and according to changes in contextual parameters:

I have all my homework done in advance, like, you know, lots more, a lot earlier than normally actually, so I don't do anything in the last minute really anymore at the moment. So I'm so hyper that I get much more done.

Nevertheless, there are also indications in the data that Joana holds a fundamental underlying sense of agency that emerges from various aspects of her system over time: beliefs, past experiences, future-oriented goals and expectations. Whilst her agency clearly is dynamic, there also appears to be simultaneously an underlying dimension to her sense of agency that is more stable and settled across time:

Like usually with Italian or English I always achieve my goals and it's no problem, and I know how much I have to work for it. Ahm, I don't know it's just different, it's just easier. I can handle it, I know when to start, I know how much I will have to learn and it's just a lot easier than this and I'm more familiar with it too, it's just my thing.

In complexity terms, her agentic system could be thought of as having two interconnected levels of dynamism, one more immediately changeable and sensitive to contextual parameters and the other formed gradually over time and more settled (cf. Mercer 2011c).

6.1.4 Agency as intrapersonally situated

Finally, agency can also be understood as situated in respect to the learner as a holistic being. This means viewing agency as interconnected with Joana's whole life, psychology and range of personal 'capacities to act', for example, physically (embodied agency), cognitively, affectively and motivationally.

Given the interconnectedness of the intrapersonal components of her agentic system, it is likely to be their cumulative and combined effects on her agency that are important rather than the influence of individual factors in isolation. As can be seen from the extract below, Joana's agency is seen to be contextually situated and interlinked with a range of intrapersonal factors such as her emotions, beliefs about language learning, self-beliefs, personality, and motivation:

> … if I'm in a class I do enjoy, like videos and I do enjoy like discussions a lot. I mean, I'm more the discussion type, I'm not the passive type of person, I don't like listening so, I mean sometimes if there is a person in front like a teacher telling you really, really interesting things then I do enjoy being passive but otherwise I rather tend to, I don't know, I tend to, I want to be active and if there is a group I always catch, take the initiative if I see, okay, nobody is really doing anything then I want to, you know, just start, I don't know, with the task or whatever, so yeah …

To clarify components involved in this intrapersonal dimension of her agency, the analysis has also focused on identifying familiar individual factors. For example, one dimension of her psychology that seems closely linked with her agency is her feelings and emotions:

> I just feel so, I don't know self-conscious when it comes to talking Italian because I don't ever talk Italian, I can, I just have no chance to do it and I just need to find somebody.

In affective terms, Joana can also be seen to engage in emotional self-regulation in making decisions to work on her Italian even against her own wishes and preferences:

> J   I have to sort of leave English aside a little bit more and concentrate on Italian, I have to really realise or make, make myself realise that every day.
>
> S   But inside you'd rather do English?
>
> J   Yeah, always, always. I just absolutely, it's passion. I just absolutely love it.

Indeed, another intrapersonal component that strongly influences her 'capacities to act' and is closely linked to her agency is her self-regulatory skills and competencies (see also Mercer 2011a; Zimmerman et al. 1992). Self-regulation is composed of a multitude of dimensions, such as a person's metacognitive knowledge about themselves, often gained through self-monitoring and self-evaluation, as well as metacognitive knowledge about the subject and task, goal setting, strategic knowledge and time management skills (Zimmerman & Kitsantas 2005: 510). Together these self-regulatory processes are seen to play a central role in Joana's decisions about how to allocate her agentic resources:

> I should do more for Written English because I know that's my weak point too. But at the moment I just feel like, okay, ahm, I should do more for Italian and I do more for Italian and you have to set priorities at the moment and even if I if I'm not good at written English at the moment or I'm not doing that good or I just feel like I have to do more then I'm doing it in my Christmas holidays and I'm just sitting down and doing it really intensively.

In line with findings by Gao (2010), these data also indicate that Joana's agency is related to her motivation, particularly in terms of what appears to trigger her agentic behaviour:

> J   … in Latin and I really lacked the motivation, I just postponed it up until the last minute and then I was so pressured that I actually sat down and for I think two months every day and I studied and studied and studied. Everything else I'd done before was just, yeah, a bit there, a bit there but it never really …

> S   Sunk in …

> J   No. And that was the problem, so I need proper motivation and that was the same with Italian and I think I've got now this boost of motivation.

Finally, it is important to note that her agency is also dependent on how physically capable she feels of acting at any point in time and can therefore be considered as an embodied construct:

> I didn't do anything because I was so tired because I didn't sleep, I hadn't slept all night the night before …

However, one of the most salient psychological dimensions of her agentic system is her sets of beliefs which appear extensively throughout the data in respect to her sense of agency and decisions concerning her agentic behaviour.

6.2 Focus on one fragment of the system: Beliefs and agency

In respect to the second research question, the analysis now 'zooms in' (Davis & Sumara 2006) to focus on one aspect of the whole agentic system in more detail, whilst retaining an awareness of the position of this fragment within the larger holistic system and its situated nature as outlined above.

The analysis reveals that one of the most salient factors found to be closely intertwined with this learner's agency were her beliefs. Although there is considerable overlap and close interrelations between the beliefs she expresses, which themselves could perhaps be considered as a complex dynamic system (Mercer 2011c), it is possible to organise these according to four main categories of beliefs for comprehensibility and in order to connect with existent studies. Whilst this approach is helpful in making sense of complex data, the categories should not be viewed as neat and distinct nor the list exhaustive. I will now consider each set of beliefs in turn, focusing on how these appear to interact with each other and her agency: self-beliefs, mindsets, beliefs about language learning and beliefs about contexts.

6.2.1 Self-beliefs

Social cognitive theory proposes that human self-beliefs of personal efficacy form the foundations of human agency (Bandura 1989). Therefore, it is

unsurprising that Joana's sense of agency appears so closely intertwined with her cognitive and affective self-related beliefs in respect to various domains. As these self-beliefs can be differently dynamic and vary across time and in terms of their relative sensitivity to context (Mercer 2011c), it is unlikely that their relationship to learner agency will be straightforward given their own inherent complexity; however, their saliency in respect to agency seems to support their centrality in the agentic system.

As was seen in the section above on self-regulation, Joana's self-evaluation of her abilities in cognitive and affective terms are essential in guiding how she chooses to invest her agentic resources:

> I concentrated more on Italian because that was the obvious need.

Importantly, her self-beliefs are also in turn influenced by the experiences she has when exercising her agency in using the language and working on the language:

> I mean my English is still, I don't know, it's not bad because I, you know, I meet people, I speak English, I practise it, I use it and so it's no problem really and I write emails …

However, her interpretation of her experiences in using the language and their relationship to her self-beliefs also appear to be mediated by her beliefs about how she feels she should be using and practising the language:

> No, I am looking forward to having more English courses again because I can see that the less I speak, the less I practise, the less it, you know, the less progress I make, you know, you really need, you really need to practise it. I think language is only about practising and I do realise for example that when I go to the pub and I have like two nights of speaking again and then I get into it again.

As such, the data suggest that whilst self-beliefs seem especially important for learner agency, they are also interdependent on the learner's actual experiences and their other beliefs about the nature of domains and contexts.

6.2.2 Mindset beliefs

A fundamental core set of beliefs that underpin a framework of related beliefs, motivations, goals and self-regulatory behaviours are mindset beliefs (Dweck 1999; Robins & Pals 2002). These refer to the beliefs an individual has about the relative malleability of a certain characteristic or ability. In respect to language learning, mindsets refer to learners' beliefs about the degree to which language learning ability and achievement depends on some kind of fixed, innate talent or can be cultivated and developed through purposeful effort (Mercer & Ryan 2010). The relationship between a growth mindset, which sees learners as active agents in the development of their abilities, and learner agency is self-evident. A learner with such a mindset would seek opportunities for learning and growth and believes in the efficacy of purposeful, strategic behaviours. In contrast, a learner with a fixed mindset tends to see any strategic efforts as fruitless and,

consequently, such learners often suffer from a sense of helplessness concerning their own abilities, especially when faced with failures or difficulties.

As can be seen below, Joana essentially believes that her success in learning the language is within her own control and that hard work and practice will help her to improve:

> I am, the things, you know, I am struggling with are probably grammar in Italian. That's one of the main things because you're just, you know, you're just not, you don't have that feeling for grammar or you know, you need to get into it and that comes with time and practice …

As mindset beliefs also connect together a learner's goals, strategic behaviours, attributions, self-concept and essentially sense of agency, it is interesting to note how Joana has less anxiety given that she feels in control and believes in the effectiveness of her strategic approach:

> I'm really relaxed, I have no exam fear at all, well, I'm preparing and I do the work. I do it on a leisurely pace and I do what I can get done and I have my aims, every day I set my aims for what I want to get done and it all works out and I'm completely, like, really I have complete control of everything …

Whilst the data reveal indirect evidence of mindset beliefs, Joana rarely expresses these beliefs explicitly. This may in part stem from the key characteristic of mindset beliefs as deeply-held and not easy to articulate, as indicated by their other term, 'implicit theories' (Dweck 1999). This can make researching and accessing such beliefs difficult and it is therefore possible that more innovative, indirect research methods may be needed rather than direct self-report techniques.

6.2.3 Beliefs about language learning strategies

Joana also frequently expresses other beliefs in very domain-specific terms, most notably in respect to what she believes are effective ways to approach language learning. These types of beliefs tend to reflect her beliefs about appropriate strategy use and other self-regulatory behaviours and clearly guide her agentic behaviours:

> …when I'm sort of switching on the TV and I've got English news on, I'm really listening actively because I know I can profit from that.

Clearly, such beliefs about strategies are especially relevant if the individual fundamentally believes that strategic behaviour and efforts can impact positively on their language learning achievements; in other words, if they hold a growth mindset and thus believe that their skills and abilities can be enhanced through such purposeful behaviours.

6.2.4 Beliefs about contextual parameters

Finally, given the acknowledged context-sensitivity of agency, it is unsurprising that her beliefs about the nature of contexts, individuals and affordances appears to be closely connected with her agency, as well as with her beliefs about how best to learn a language:

> You know, she repeats a lot, she does a lot of repetition, you know, she corrects homework and she comes back to you about it and talks to you about mistakes. It's just very, ahm, you know, she is very aware of what your student levels are like and… She is a great teacher and we do get a lot of homework sometimes, sometimes more but in general there is a lot to do but it doesn't bring you forward otherwise.

However, context can be more broadly understood beyond physical places, agents and artefacts. In complexity terms, system parameters are aspects of the system that define its parameters, such as the particular languages and perceived levels of proficiency etc. For example, Joana's beliefs about the nature of the languages she is studying can also be seen to be linked to her agentic system:

> I knew I'm behind in Italian, I knew I had to do more for Italian and so I thought I just leave English aside a little bit and I won't, you know, I won't have any troubles with English and I can catch up easily, there's no problem. I felt like it's easier to catch up in English than in Italian because Italian, it's just a complex, a very complex language and there are much more tenses, much more grammatical exceptions, much more things to really pay attention to when you're writing something or even when you're speaking, you can make such a lot of mistakes, you can say a sentence where you can have ten mistakes in it, and in English it just doesn't feel like that to me …

Thus, beliefs about contextual parameters can also be extended in complexity terms to include beliefs about various aspects of the system parameters such as the nature of the language itself and potentially other defining aspects of the system.

7 Discussion

7.1 Considerations for research

As a construct, agency has an inherent complexity which poses challenges for researchers and which further research needs to better understand. Firstly, defining and recognising agency as an organic whole in data is problematic given its multicomponentiality and potentially non-visible dimensions. In addition, the boundaries of units of analysis are difficult to set given the questions raised by this study about the nature of the relationship between individual, collective and co-evolving agency across contexts. Agency is also not

readily quantifiable and is perhaps best discussed in terms of degrees of agency on a continuum from highly agentic to moderately or weakly agentic. However, it is important to also remember that learners may vary in the degree of agency they wish to aim for both as individuals and in respect to different contexts and purposes. Although there is an assumption that learners will wish to be as agentic as possible, this may not be the case in every context and for every purpose, and as a result, research needs to be aware of the potential for different forms of inter- and intra-learner variation in agency.

Whilst conceptualising agency as a complex dynamic system may well be justified in terms of its ability to most closely represent the phenomenological reality as represented in these data, such a theoretical approach poses some additional challenges for research. Firstly, it suggests the necessity of a genuinely holistic perspective; however, the boundaries of the system are potentially limitless and the number of dimensions to be considered is vastly expansive. Therefore, for research purposes, there is an accepted need to delineate the system and focus of research in some way, whilst maintaining an awareness of the partiality of such a view on the system as a whole. However, this partiality will be invoked by a host of other decisions that researchers also need to make, such as defining units of analysis, selecting a focus in terms of components in the system and/or their interrelations as well as considering how to capture the dynamics of the system as an organic whole as well as the dynamics, stabilities, quality and significance of the relationships of key components in the system. Another specific consideration facing researchers of complex dynamic systems concerns the potentially self-organising nature of such systems. There needs to be a balance which enables an exploration of both the degree to which there may be recognisable patterns inherent in agentic systems as well as the degree to which its behaviour may be thought of as emergent, truly unpredictable and absolutely unique.

7.2 Implications for pedagogy

A final issue raised by this article is how findings about agency as a complex dynamic system benefit pedagogy. One possible useful, liberating insight may stem from the concept of decentralised control. In other words, understanding that not one single intervention may affect learner agency, but rather teachers can work at creating momentum by attending to a range of dimensions and components in the agentic system such as creating a range of conditions and learning environments (in and out of class) designed to enhance and facilitate learner agency. In particular, for maximum effect, educators can concentrate on key components of the system which, in respect to agency, seem to include learner beliefs about themselves and their contexts of language learning.

However, the pedagogical benefits gained from complexity studies remain an aspect of this theoretical perspective that needs to be consciously attended to in order to critically evaluate the actual benefits for teachers and learners in practical terms. Whilst some teachers, perhaps especially those in initial teaching posts, may benefit from the insights from complexity studies in terms of enhanced of complexity-awareness (Dörnyei & Ushioda 2011), I am concerned that many experienced teachers will already be aware at least intuitively of the complexity they face daily and such educators may thus fail to draw any direct

benefits from findings. Whilst complexity studies in their comprehensive, real-world description allow us to better understand the actual complex reality of working with learners, such studies must also evaluate their additional contribution to enhancing pedagogy in practical terms.

8 Conclusions

The findings reported on in this study appear to further support interpretations of learner agency as a complex dynamic system. In respect to the first research question, understandings of situatedness have been expanded beyond simple unidimensional views of context. Instead it is suggested that situations and sociocultural or educational contexts need to be examined themselves in more depth beyond superficial monolithic conceptualisations. Agency can also be understood as contextually situated in an interpersonal sense in relation to other individuals, not only as interactional partners but also in respect to co-evolving and collective notions of agency.

The data also highlighted the need to take a more holistic view of agency which appreciates its intrapersonally situated nature. From this perspective, agency is seen in relation to the person as a whole encompassing other dimensions of their psychology, especially in terms of their beliefs, as well as their embodied cognitions and multiple capacities to act. Viewing agency holistically also implies considering it as temporally situated connecting together the dynamics of a person's ongoing life history including their past and present experiences as well as their future goals, expectations and imaginations. It also means appreciating the dynamics of agency across time and space as well as considering the potential degree of stability in a learner's underlying sense of agency.

In respect to the second focus of this study, it was suggested that beliefs are likely to play a significant role in the learner's agentic system, given their saliency in respect to agency throughout the data. It was shown that, although the beliefs were organised into categories for ease of overview, her beliefs were tightly interrelated and interdependent on each other suggesting perhaps the ultimate futility of insisting on discrete belief categories; a finding which also raises questions about the potential offered by taking a complexity approach to the researching of belief systems (see also Mercer 2011c).

This article hopes to have shown that conceptualisations of learner agency need to be expanded to recognise its variedly situated, differently dynamic and multi-dimensional nature. It has concluded that at present the most helpful and phenomenologically appropriate way to conceive of agency may be as a complex dynamic system. However, many questions remain and further research will be need to add more detail to the picture emerging from this and previous examinations of the data. There remains a need for "a more complex view of second language learners as agents" (Lantolf & Pavlenko 2001: 155), and given the importance of learner agency in enabling learners to engage fully and effectively in their learning communities and to make the most of their affordances, it is essential that we make understanding learner agency, its emergence and ongoing development a priority.

Endnotes

[1]   See: http://www.coe.int/t/dg4/linguistic/Source/Framework_EN.pdf (p. 24) (Access date: 20.09.11)

[2]   It should be noted that other aspects of Joana's data in respect to her self-concept and agency have also been reported elsewhere (see, e.g., Mercer 2011a, b).

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