Part IV

Creativity in language teaching and learning
Creativity in second-language learning

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Introduction: Stepping differently on creativity

Creativity is highly valued and widely researched in various disciplines such as science, arts, business, literature, education, and psychology. Despite the copious literature on creativity, there are few studies focusing on the role of creativity in second-language learning. This chapter attempts to fill that void, examining the concept of creativity with reference to second-language learning. Views of language in complex/dynamic theories show that creativity drives human desire to develop and learn complex language (for example Ellis, 2008; Steels, 2005). Language and meaning grow in complexity concurrently as children deal with complex tasks and explore new meaning about the world (Tomasello, 2000). This also applies to the evolution of human language more generally, which undergoes the same trajectory of change as we use it to create new meaning and knowledge (Slobin, 2005).

Designing ‘communicative’ tasks and creating a ‘communicative’ desire have been the focus of much second-language education, often with an emphasis on using language to talk about known meaning. This chapter challenges this utilitarian, ‘communicative’ view of language and proposes a ‘creative’ view of language as a tool for making new meaning. The chapter contends that language learning tasks should be set up to instigate a creative desire in language learners, creating a need to say something new so as to help them to explore and transform their second-language knowledge and their knowledge about the world. These proposals are discussed with reference to several key theories, such as complex/dynamic theory, the cognitive psychological view of creativity as process, and the Vygotskian view of creativity and learning.

Research on creativity and second-language learning

Studies on creativity can be divided into four approaches: person, product, process, and environmental (Rhodes, 1961). The focus of each approach is summarised in Table 27.1.

Creativity research also differs according to disciplinary emphasis, such as cognitive, biological, social, and (applied) linguistic. Researchers in various disciplines have used the term ‘creativity’ in various ways. In the field of linguistics, creativity is often viewed as a form of language ‘play’ (Carter, 2004), which can occur at three levels: form, meaning, and use.
Table 27.1 Research on creativity

<table>
<thead>
<tr>
<th>Main focus</th>
<th>Some key findings from general creativity research</th>
<th>Studies related to second-language learning</th>
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<tbody>
<tr>
<td><strong>Person approach</strong></td>
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<tr>
<td>Focus on characteristics of creative individuals</td>
<td>Characteristics of creative individuals include broad interests, attraction to complexity, curiosity, risk-taking, tolerance of ambiguity, imagination, high energy, independence of judgement, autonomy, and intuition (e.g. Barron &amp; Harrington, 1981)</td>
<td>Studies investigating relationships between individual creativity and second-language learning (e.g. Albert, 2006; Ottó, 1998)</td>
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<tr>
<td><strong>Product approach</strong></td>
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<tr>
<td>Focus on characteristics of creative products</td>
<td>Characteristics of creative products include novelty, appropriateness, usefulness, social acceptance, transformation, surprise, and problem solving (e.g. Amabile, 1996)</td>
<td>Studies analysing the formal and functional features of creative texts, and promoting the use of creative texts and notions of creative competence in the second-language curriculum (e.g. Carter, 2004; Cook, 2000)</td>
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<tr>
<td><strong>Process approach</strong></td>
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<tr>
<td>Focus on the process people go through in creative tasks</td>
<td>Some processes involved in creative thinking include: chaotic and ordered thinking (Finke, 1996); combinational, exploratory, and transformational thinking (Boden, 2001); and idea generation and idea exploration phases (Finke, Ward, &amp; Smith, 1992)</td>
<td>Studies identifying the processes that students undergo in creative tasks and their contribution to second-language learning (e.g. Tin, 2011b)</td>
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<tr>
<td><strong>Environmental approach</strong></td>
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<tr>
<td>Focus on situational features that contribute to or hinder creativity</td>
<td>Positive external features contributing to creativity include freedom, autonomy, good role models and resources, encouragement for originality and innovation, freedom from criticism, and tolerance of failure (e.g. Amabile &amp; Gryskiewicz, 1989)</td>
<td>Studies investigating different language learning opportunities in different creative language learning task types, including of: constraints internal to creative tasks vs free tasks (Tin, 2011b, 2012, 2013) rule-based games vs role play (Kim &amp; Kellogg, 2007) play episodes vs non-play episodes (Pomerantz &amp; Bell, 2007)</td>
</tr>
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Positive internal task-related features contributing to creativity include disciplined and imaginative use of task constraints (e.g. Stokes, 2008)

Negative external features hindering creativity include time pressure, competition, unrealistic expectations, constraint, lack of recognition for originality, and lack of autonomy and resources (e.g. Runco, 2004)

Source: Adapted from Tin (2011a)
Creativity in second-language learning

(Cook, 2000; Maybin & Swann, 2007). The focus of many language creativity studies has been on describing the finished product rather than identifying the process involved in producing creative texts. Numerous studies have described formal and functional properties of creative texts produced in various contexts ranging from literary to everyday contexts, from classroom to workplace communication. Although some studies have examined the cognitive processes, their focus is often on the ‘reader’, exploring the processes through which the reader goes in interpreting creative texts (finished products) (see, for example, Maybin & Pearce, 2006) rather than investigating the processes that the social actor undergoes in producing such texts.

The findings of product-oriented language play studies have made contributions to second-language curricula in terms of language learning objectives and the nature of language to be reflected in language teaching materials. However, less attention has been given to the design of tasks, the cognitive processes involved in creative thinking, and the conditions in which creativity can prosper. As Tosey (2006: 30) suggests, as language educators, ‘we may not need to create “creativity” so much as generate conditions in which it can flourish’. To understand the conditions in which creativity can thrive, we need to consider the processes involved in creative thinking.

Vygotsky (1971), taking a process approach to creativity, calls for studies that focus on the creative process in motion. A researcher cannot trace the creative process back from the finished product because ‘the product has crystallized the process in such a way that obscures the process’ (Vygotsky, 1971, cited in Moran & John-Steiner, undated: 7). Both product and person approaches to creativity seem to deal with the fossilised outcome (either in the form of a creative person or a creative product) of a creative process that has already been completed and do not provide answers to how that particular creative outcome happened.

Many language play studies in second-language contexts leave several key questions unanswered, specifically questions regarding why and how play tasks contribute to the production of rich, complex language. Apart from describing learners’ performance in play tasks, those studies do not fully clarify the processes by which learners arrive at more complex language in some play tasks as compared to other tasks. They do not fully detail the conditions and task features that might have led to the qualitative difference in learner language. For example, Pomerantz and Bell’s (2007) study shows a qualitative difference in language produced between the language play episodes and non-play episodes/transactional talk. In play episodes, learners exhibit richer use of language at both syntactic and lexical levels. Kim and Kellogg’s (2007) study, on the other hand, compares the language quality produced in two different play tasks: role plays and rule-based games. Their study shows that rule-based games produce more complex linguistic products – more complex discourse structures, more negotiation and co-construction of messages, and more complex language patterns. However, they still do not answer the question of why some play task types, such as rule-based games, lead to more complex language patterns as compared to other non-play, transactional episodes or role-play activities.

In this chapter, following the cognitive approach, I use the term ‘creativity’ to refer to the processes involved in creative thinking – that is, the process involved in generating new and valuable ideas. Three critical questions are explored, as follows.

1. How does creativity, as the process of producing new ideas, contribute to second-language learning – in particular, the emergence of rich, complex language?
2. What are the processes involved in creative thinking and producing new valuable ideas? How do new ideas emerge?
3. What are some conditions that can promote creative processes that, in turn, can contribute to the development and transformation of learner language? Why do some language learning tasks lead to the emergence of complex language patterns and new ideas, whereas others do not?

These questions are explored with reference to various key theories such as the cognitive approach to creativity as process, emergentism or the complex/dynamic theory of creativity, and Vygotsky’s view of creativity and development. The various issues discussed are also illustrated with a sample analysis of pairwork discussions during two different language learning tasks.

**Creativity as co-emergence of language and meaning**

One central issue that needs to be addressed is how creativity, as the process of producing new ideas, contributes to the emergence of rich, complex second-language patterns in learners. The answer to this question lies in our views of language and its relationship with knowledge and meaning.

Language is often treated as a tool for expressing ideas and experience – a medium to communicate private thoughts and known ideas to the interlocutor. This communicative view has dominated language learning tasks such as information gap tasks, in which learners use language as a tool to talk about pre-given messages, to bridge the information gap, or to communicate about known ideas and meaning to their interlocutor.

However, recent work in complex/dynamic theory and emergentism has transformed our view of language from a ‘representational’ to a ‘dynamic’ view – that is, from a ‘communicative’ to a ‘creative’ view. As Roth and Duit (2003: 870) contend, language and meaning/knowledge, ‘mutually constitute each other and therefore cannot be considered in isolation… Changes in language are related to changes in the articulated world’. Similarly, Gartner (1993: 238) argues that the possibilities for new behaviours or the ability to generate new ideas are ‘dependent on generating new words [and new language patterns] to talk about what we see and experience’. Language is not only a tool for communicating or transferring existing knowledge, but also a tool for creativity – a means by which new ideas are constructed, and past and existing ideas are transformed. In other words, new language patterns co-emerge along with our need to construct new knowledge. When this is applied to second-language learning, promoting a creative desire or creating a need for learners to say something new is important if we want learners’ language to be pulled out of their familiar comfort zone and to grow in complexity.

However, our search for new language patterns to talk about new experiences is not an easy task because:

> one has only learnt to get the better of words
> For the thing one no longer has to say, or the way in which
> One is no longer disposed to say it. And so each venture
> Is a new beginning, a raid on the inarticulate


So how might we create conditions for the co-emergence of complex language and new knowledge? To help us to answer this question, the next section takes a closer look at the nature of emergence and creativity as process. How new ideas emerge has been the focus
of creativity researchers taking the cognitive psychological approach and the complex/dynamic systems approach.

Creativity as emergence of new knowledge: The cognitive approach

Several cognitive processes activated when engaging in a creative task have been identified. Finke (1996) proposes two thinking types: chaotic and ordered. Chaotic thinking is generally impulsive, spontaneous, reactive, and divergent, focusing mainly on occurrences of the moment and exploring novel alternatives without specific plans or goals. It involves the natural emergence of structure from complexities. Ordered thinking, on the other hand, generates new ideas through purposefully analyzing and extending existing ideas. It is often highly structured and directly connected to previous ideas and concepts. The structure is imposed and complexity is reduced.

Boden (2001), meanwhile, proposes three types of creative thinking: combinational, exploratory, and transformational. Combinational thinking produces new ideas by associating old ideas in unfamiliar, yet intelligible and valuable ways. Exploratory thinking explores all possibilities inherent in a current conceptual space using existing rules. Transformational thinking significantly alters one or more rules of the current conceptual space, enabling the generation of certain ideas that ‘simply could not have been generated before the rule change’ (Boden, 2001: 97).

Finke, Ward, and Smith (1992) propose two phases involved in creative thinking: idea generation and idea exploration. The idea generation phase involves generating ideas or ‘pre-inventive forms’ without knowing what they will be used for. The idea exploration phase involves re-interrupting those previously generated pre-inventive forms, constructing new meaning and functions in retrospect (see Tin, 2012, 2013, for examples). The novel outcome produced could not have arisen without the ideas generated in the previous phase, but neither could they be predicted either at the idea generation phase.

Although the emergence of new ideas is unpredictable, they can be seeded by some situational features, one of which, according to cognitive creativity researchers, is the disciplined and imaginative use of constraints (for example Stokes, 2008). Constraints, desirable for creativity, are two-sided: one side encourages search among the unknown, while the other prevents search among the known (see Tin, 2012, for examples).

In recent years, ‘systems’, ‘dynamics’, and ‘complex’ have become key terms in creativity research in the cognitive approach (for example Kerne et al., 2008). Many ideas from complex dynamic systems theory, which deals with the emergence of new ideas, provide opportunities to expand and clarify cognitive creativity research.

Creativity as emergence of new knowledge: The complex/dynamic system theory

The emergence of novel and coherent structures and properties, in the complex/dynamic theory, can be defined as ‘the process by which new, more complex order arises from that which is, in some sense, simpler or more predictable’ (Cariani, 1997: 2). There are several features that a complex system must display if emergence of radical novelty is to take place: the system must be self-organising (that is, display ‘adaptability-seeking behaviour’); it must be non-linear; it must involve the amplification of random events (also known as the ‘beyond equilibrium condition’); and there must be attractors (see, for example, de Bot, Lowie, & Verspoor, 2007; Kim, 2006; Larsen-Freeman & Cameron, 2008; Snowden, 2002).
Emergence takes place during the process of self-organisation in complex systems. This arising or emergence of new properties is neither predictable in advance of, nor deducible from what came before or from, lower or micro-level components. Thus an emergent new phenomenon can be described only after it has manifested. A complex system requires multiple interacting agents, components, or basal elements. The repeated interaction between these multiple agents over time within a (usually simple) set of rules (often known as the system’s ‘sensitivity to initial conditions’) gives rise to the emergence of new complex patterns. These new patterns, once emerged, become part of the complex system, giving rise to further emergence at the higher level.

The relationship between lower level and higher level properties in a complex system is non-linear: a small change can have a big impact on the system as a whole, whereas a big change may have little impact. The relationship is also dialectical or dynamic – through repeated interaction, lower level components affect the system as a whole and are in turn transformed.

Emergence is also associated with the arising of attractors that are not pre-given. New attractors show themselves when a dynamic system bifurcates, giving rise to both a quantitative and qualitative change. These new attractors dominate the system, allowing for the emergence of something radically novel in comparison with what came before.

This arising of radical novelty, which characterises emergence, involves taking advantage of accidental occurrences or random events, which are required for the system to bifurcate and for new attractors to appear.

However, not all knowledge systems are complex. Researchers make a distinction between ordered (simple or complicated) systems and complex, unordered systems. Snowden (2002) notes that, in an ordered system, various components that make up the system have a fixed, linear, cause-and-effect relationship. Both the system’s components and all of their relationships are known, knowable, and definable. Cause and effect can be separated, and we can predict and control outcomes in such ordered systems. However, a complex system has many interacting components. Both the components and their relationships are not fixed, but are changing: ‘Cause and effect cannot be separated because they are intimately intertwined’ (Snowden, 2002: 14).

Although emergence of new knowledge in complex systems is unpredictable, it can be identified, influenced, and reinforced. For emergence of new complex ideas and language patterns to take place, language learning tasks need to create a complex system that comprises multiple interacting components and a set of rules (initial conditions), which can seed the emergence of patterns, affecting the patterns of interaction, allowing the interaction to create coherence and meaning. Designing tasks plays an important role, and it is important to consider what sets of rules or task features are likely to disrupt, reinforce, and seed the emergence of new, complex patterns. Do students come up with less complex language in some language tasks with looser formal constraints (such as role plays, transactional, information-gap tasks) because the set of rules desirable for complex systems are missing, and because such language tasks create an ordered system made up of known, knowable components and predictable outcomes? Do some tasks create order and predictability, whereas others enable complex dynamic interactions and radical change? To understand this, we need empirical studies that investigate the process of creativity-in-the-making in different language learning task types with different levels of constraints and rules. We need studies that examine the effect that constraints, rules, and initial task conditions have on creativity and emergence.
Researching the process of creativity-in-the-making through collaborative tasks

Studying creative processes or the emergence of new ideas at the individual level is a challenging task, because it is difficult to get participants to verbalise their inner thinking when engaging in a creative task. Although think-aloud protocol (TAP) is possible, it can affect and interfere with the pattern of thinking. Retrospective interviews also have limitations, because creative products, while they may be based on past experiences, are so transformed that their sources and the trajectory of their emergence cannot be identified or recalled.

Following Vygotsky’s work on creativity and play, researchers have proposed collaborative tasks, rather than individual tasks, to investigate creative processes. Researchers adopting a sociocultural view of creativity have proposed collaborations as important sites for creativity, and have characterised creative processes as primarily social, collective, and collaborative (Littleton, Rojas-Drummond, & Miell, 2008). Collaborative tasks create a natural environment for thinking processes to be expressed and verbalised, and thus help in discovering the micro-genetic developmental processes. However, it is important to set up a natural environment, paying particular attention to the social relationships between the participants. Several studies, as Moran and John-Steiner (undated: 36) note, ‘often throw strangers together to perform a short-term task’, and this does not allow time for the emergence of trust and complementarity, which are important for creative development and production.

Creativity-in-the-making: A study

Background

The study reported here is a replication of a study that I conducted (Tin, 2011b). The data were collected and transcribed by Tzu Ning Huang (2013). The tasks used in the study were jointly designed. The findings reported in Tzu Ning Huang (2013) are similar to my earlier study, showing that, in tasks with high formal constraints, students engage in more negotiation, exploration, and transformation of not only ideas and meaning, but also language. Here, the data are reanalysed, paying particular attention to the emergence of new meaning and language patterns. The process that the pair undergo is detailed with reference to various issues discussed so far in this chapter to illustrate how creativity takes place (or does not take place) in two language learning tasks with different sets of initial rules, constraints, and conditions.

Participants

The participants, N and S, were non-native English-speaking Taiwanese students in their final year at a university in New Zealand. At the time of data collection, they had been in New Zealand for about five years. They were both aged in their early 20s and had been good friends for several years. They were used to speaking Chinese when they met. The study was conducted at N’s home in one evening. N and S had not yet had dinner when they performed the tasks and the feeling of hunger often popped up during their discussions. The main data used here were the final written products and the transcripts of their discussions during pair writing tasks.
Task design

The pair engaged in two types of task: acrostics and similes. For acrostics, they were shown some examples of acrostics and a brief explanation was given in Chinese concerning the rules of acrostics:

- the formal constraints – that is, the requirement to start each line with the letter of the key word provided; and
- the semantic constraints – that is, that the poem produced must be related to the key word.

In the simile task, they were also shown some examples of similes and were given a brief explanation in Chinese – that is, they needed to provide two reasons for a given simile (‘Hope is like parking spaces’). The given simile was randomly generated before the data collection.

The two tasks differed in their initial conditions and rules: while the acrostic task had higher formal constraints in addition to semantic constraints, the simile task had looser formal constraints. In the simile task, the pair needed to expand the pre-given relationships between the two concepts: hope and parking spaces. In the acrostic task, they were merely provided with the key word time, and no other concepts and relations were given. The simile task was similar to many language learning tasks in which learners were required to talk or write about a pre-given topic freely, providing specific details or reasons in support of the topic (in this case, in what way ‘hope is like parking spaces’). However, in the acrostic, they could not freely write about time because their thinking was constrained by the formal requirement (the need to start lines with letters from the key word).

Data analysis

Table 27.2 illustrates the two poems produced by the pair.

The finished products by themselves do not give clues about the way in which the ideas and language are formulated. To understand the process through which the pair went, the transcripts of their discussion need to be examined in detail (see Appendices A and B). In both tasks, N and S spoke mostly in Chinese, and the translation of their discussion is typed in italics, while the English words that they used appear in roman font.

Extract 1: Acrostic (‘Time’)

Introduction

The pair took about 17 minutes to write the acrostic (see Appendix A). The process through which they went can be divided into two phases: idea generation (lines 1–61) and idea exploration (lines 62–166).

Table 27.2 Poems produced by the pair

<table>
<thead>
<tr>
<th>Acrostic</th>
<th>Simile</th>
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<tbody>
<tr>
<td>The one thing that Inhibits Marriage to last Eternally</td>
<td>Hope is like parking spaces Because it is hard to get and People steal each other’s parking spaces Like destroying their hope.</td>
</tr>
</tbody>
</table>
In the first phase, they generated words randomly and engaged in exploration at the lexical level. They also generated new self-invented rules and constraints, such as ‘changing an angle from thinking about words to time-related behaviours’ (line 50), ‘categorising words into categories’ (line 62), and ‘starting with the biggest group’ (line 97). These self-imposed constraints/rules emerged as they carried out the task and were not planned in advance. Words (pre-inventive forms) were randomly generated without knowing what they would be used for. The pair also freely generated words not necessarily starting with the letters of the key word, thus slightly transforming the formal requirement of the task. A complex system requires many interacting agents/components and it seems that, by engaging in random exploration of words, the pair’s performance demonstrates one of the features of the working of a complex system.

In the second, idea exploration, phase (lines 62–166), the pair engaged in exploring and transforming the ideas generated both at the lexical and syntactic levels within the formal and semantic constraints of the task. Along with the meaning, the syntactic structure emerges.

**Idea generation phase (lines 1–61)**

After coming up with ‘gold’, ‘money’, and a common phrase related to **time** (‘time is money’), in line 12 N suggests ‘marriage’, a sudden deviation from the concept of ‘time,’ but which seems connected to ‘money’ in terms of form because both words start with ‘M’, the third letter in the given key word **time**. This diversion to ‘marriage’ serves as a form of bifurcation, taking the pair’s language — in particular N’s — to new attractors, generating a different set of words (for example ‘food, patience, life, pressure, age, study’) in the subsequent lines (lines 16–30). In line 31, S also bifurcates, providing a word ‘universe’, which is recognised by N as ‘different’ (line 32). This seems to help N to bifurcate to more new attractors, such as ‘belief’ (line 34).

S then goes back to generating some basic words directly related to ‘time’, such as ‘watch’ (line 39), leading N to generate ‘jewellery’ (line 40), which usually co-occurs in the same category as ‘watch’, although unrelated to **time**. In line 44, N offers ‘forever’, a word that is perhaps related to ‘universe’, suggested by S in line 31. In the subsequent line, S suggests a different word, ‘speed’, drawing upon her past experience about a book that she has been reading. N, in turn, continues ‘speed’ with a related word ‘distance’ in line 49 (‘Then, how about “distance”?’).

In lines 50–52, N proposes to bifurcate their language further by suggesting that they ‘change an angle’ and think about ‘something time-related behaviours’ in addition to ‘words’ (nouns) generated so far. This leads to the emergence of new attractors in subsequent lines, such as verbs and sentences. In line 53, N reshapes the meaning of ‘marriage’ that she proposed in line 12 by saying ‘marriage is a behaviour, right?’ Then N says the word ‘cooking’ (line 54), probably prompted by a feeling of hunger and related to her earlier word ‘food’ (line 16); S elaborates the word into a short sentence by relating it with **time** (‘cooking takes time’) (line 55). S then generates more words related to **time** such as ‘minute, second, month, year’ in line 57. After a long pause, N says ‘self-awareness’ (line 59), a different word from those that have gone before, perhaps a further attempt to bifurcate their language.

The process of generating words in these lines illustrates a form of chaotic thinking, focusing mainly on **occurrences of the moment** and exploring novel alternatives without specific plans or goals. The pair’s thinking is generally impulsive, spontaneous, reactive, and divergent. They generate a series of words without worrying about what they will be used for. Some are related to the concept of **time**, while others, although unrelated, arise...
from words generated in the earlier lines or from the pair’s experience. The words generated seem to serve as ‘pre-inventive forms’ (forms generated without knowing what they will be used for), which in turn serve as the ‘multiple interacting agents’ that a complex system requires if emergence of new knowledge is to take place.

Idea exploration phase (lines 62–100): Imposing self-generated rules

Starting from line 62, the pair engage in the idea-exploration phase, using a set of self-generated rules (organising words into categories and starting with the biggest group) and the constraints imposed by the task.

In line 62, S introduces a new self-generated rule (‘Okay, should we categorise what we write?’). Following this new rule, the pair organise the words generated into five groups (lines 62–95) (see Table 27.3). They then explore the semantic connection between words:

- S: ‘age is more like the life’ (line 69);
- N: ‘patience is more like belief’ (line 72);
- N: ‘love is more like forever’ (line 74);
- S: ‘it (universe) is more like speed’ (line 77);
- N: ‘studying and cooking is more random’ (line 80); and
- S: ‘pressure and self-awareness are similar’ (line 83).

In lines 96–99, N notices that they have more words in group 2 and proposes a new rule that they start with the biggest group. She also notices that ‘they are all time-related’ (line 99).

In this way, the pair start exercising ordered thinking, and attempt to generate new ideas through purposefully analysing and extending existing ideas. Their thinking is highly structured and directly connected to previous ideas and concepts. The structure (that is, self-generated rules – categorisation and starting with the biggest group) is imposed.

Idea exploration within task constraints (lines 102–17): Seeding the emergence of syntax

After a long pause, in line 102, S suggests ‘my energy’, fulfilling the requirement to start lines with the letters of the key word TIME. Although the words that she uses here come from neither group 2 nor the other groups, her diversion seems to lead their language to a new attractor: from ‘words’ to the beginning of ‘syntax’.

After a pause, N also agrees, saying ‘I want to write “my something” here’, looking at the third letter ‘M’ in the acrostic. S suggests another alternative ‘yeah, or a verb’ (line 105),

<table>
<thead>
<tr>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Group 4</th>
<th>Group 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universe</td>
<td>Self-awareness</td>
<td>Life</td>
<td>Clock/watch</td>
<td>Cooking</td>
</tr>
<tr>
<td>Distance</td>
<td>Pressure</td>
<td>Age</td>
<td>Jewellery</td>
<td>Working</td>
</tr>
<tr>
<td>Minute, second, hour</td>
<td>Patience</td>
<td></td>
<td>Money</td>
<td>Studying</td>
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<tr>
<td></td>
<td>Marriage</td>
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<td>Love</td>
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<td>Belief</td>
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<td></td>
<td>Forever</td>
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further seeding the emergence of syntax. N acknowledges that it is hard to think of a word for ‘T’ (the first line in the acrostic) (line 106), and later she chooses a simple word ‘the’ and suggests ‘how about “the one”’ (line 108). S agrees, saying that ‘we can add many words after the letter’, further reinforcing the emergence of syntax. N realises that although they need two more words (for ‘I’ and ‘E’), she is constrained by the semantic requirement of the task (line 114: ‘but it can only be time-related’). After a pause, N suggests ‘eternal’ for ‘E’ in line 116, and this word seems to be probed by an earlier word in group 2 (‘belief’) (N: ‘I just thought of “eternal” . . . because many beliefs are about . . . you know’). The word ‘eternal’ also seems to be related to ‘forever’ in group 2, a word that N proposed earlier in the idea generation phase.

Idea exploration (lines 118–43): Finding new relations between existing words and transforming the form

This accidental emergence of ‘eternal’ (which arises through interaction between the person, the task, and previous words) is taken advantage of by S, who suddenly sees a new connection between the word ‘eternal’, the previous word ‘marriage’ in group 2 and the key word time (S: ‘time may cause marriage to . . . prevent marriage from going . . . eternally’) (line 118).

Along with the emergence of this new meaning, the pair engage in transforming the form further in lines 122–35. S expands it by connecting the last two lines (‘M’, ‘E’) with the first line ‘the one thing’ (‘So if we can start with T . . . like . . . the one thing . . . or the one . . . something’: line 122). They also think about how to use ‘eternally’ in a sentence, for example, S: ‘Do we need a noun?’ (line 128), N: ‘Is eternally adjective?’ (line 129), N: ‘So, give me a sentence’ (line 131), and N: ‘When do you use eternally?’ (line 135). Finally, in line 136, S proposes the sentence ‘the one thing that prevents marriage going eternally’, using a relative pronoun ‘that’ to combine all of the previous words into a noun phrase. N accepts S’s proposal and explanation (S: ‘because time has limits’).

Task constraints (lines 144–66): Further transformation and exploration

After a pause, S comes up with an alternative ‘inhibit’ (‘inhibit is like prevent, right?’), fulfilling the formal requirement of the task (the need to start with ‘I’, the second letter in the key word time). She then checks it in the dictionary to see whether it is correct. S then further suggests that they transform the word ‘go’ (‘Is there a better word than “go”?’: line 158). The pair then propose alternatives (‘hold’, ‘sustain’) and finally N comes up with ‘last’ (line 163), which is changed slightly into ‘to last’ by S, who accepts it as a good alternative. They then write the final poem down.

The final poem written (the product) is not produced in a linear order. Instead, it emerges as the various components of the complex system (various words generated, the pair, their experience) interact with each other within a set of task constraints (formal and semantic requirements) and a set of self-generated rules (changing an angle from words to behaviours, organising words into groups, and starting with the biggest group). During the task, the pair often fall into ‘attractors’ (for example generating similar words), but they also manage to pull themselves out of the attractors and their lexical trajectory bifurcates into ‘new attractors’. They engage in the transformation and exploration of both ideas and form. The sentence structure emerges and is transformed along with the emergence of new connections.
between words. What has emerged (the final product) is just one of the possible outcomes, and cannot be predicted or knowable in advance from the lower level order (the letters of the given key word *time* and words generated in the idea generation phase). However, it can be explained in retrospect. We can identify and trace the co-emergence of meaning and form: how the various words lead to one another, and how the syntax and the new meaning (that is, the new relation between ‘time’ and ‘marriage’) emerge. When the word ‘marriage’ is first generated in line 12, there is no apparent connection between ‘marriage’ and ‘time’ yet. However, as the discussion continues, the new meaning emerges, along with the transformation of their language.

**Extract 2: Simile (‘Hope is like parking spaces’)**

**Introduction**

It takes the pair only about 7 minutes to write the simile (see Appendix B). There is little transformation of their language and meaning. The poem that they write reflects more about the common ideas associated with ‘parking spaces’ (‘hard to get’, ‘people steal from each other’). The meaning of parking spaces is not transformed in the process of comparing it with ‘hope’. The idea that they write seems to be a knowable, predictable idea, or a ‘resultant property’, rather than an ‘emergent property’. Resultant properties are additive and subtractive properties, and are predictable from information at the lower level, whereas emergent properties are ‘neither additive nor subtractive, and not predictable, on the basis of the lower-level properties from which they arise’ (Kim, 2006: 550). The pair – in particular, N – get the idea right from the beginning based on N’s own negative experience with parking spaces. Because the idea that they want to convey is already known, there seems to be a lack of desire to transform their language. Their discussion lacks complex negotiation, transformation, and exploration of meaning and form. They simply apply what they know about ‘parking spaces’ to ‘hope’, with little transformation of the sentences generated. Lack of constraints (although randomness generates an interesting outcome) leads to this. No new self-generated rules and constraints emerge either. The final product is written in a rather straightforward linear manner.

**Retrieving known and knowable ideas (lines 508–51): Working within an order system**

Right from the beginning, N gets the idea for the simile: ‘people tend to steal parking spaces’ (lines 511–15), drawing on her own negative experience with parking spots. When S asks ‘why is it like hope?’, N explains ‘it’s like people taking your hope away’ (line 517). Although the meaning may shed a new light on the meaning of ‘hope’, it does not really transform N’s known meaning and past experience with ‘parking spaces’. N then continues the idea in a linear manner with the second reason for the poem: ‘parking spaces are hard to get.’ Although they engage in some discussion concerning the form, the discussion lacks negotiation, exploration, and transformation. N suggests ‘I think we need “and”’ when watching S write and proposes ‘Can we change it a bit?’ (lines 535–7). N then adds ‘each other’s’ in front of ‘parking spaces’ (line 541) and replaces ‘like taking your hope away’ with ‘like destroying their hope’ (line 543). When S asks ‘Should we split the sentence?’ (line 544), N simply suggests ‘we can add the thing in the middle . . . the . . . slash’ (line 547) and they agree to add ‘and’ to connect the two reasons (line 551). Their editing and
production is more like adding and subtracting words (a feature of an order system), rather than transforming the sentence.

Unlike the acrostic, the pair’s language and ideas in the simile are not explored and transformed, and the final product is written in a linear manner, mainly proposed by N. While in the acrostic N tends to dominate (by proposing most of the words, such as ‘marriage’, ‘eternally’, ‘the one’, which are finally used in the poem), S plays an important role in transforming their meaning and form by exploring new relationships between words generated. However, in the simile task with looser formal constraints, S lacks an opportunity to contribute to the writing task. N is also unable to transform what she knows about ‘parking spaces’. Along with this static known meaning, they fall into known forms, using sentences and words that readily arise and which they already know. The task seems to create an order system in which the pair impose ‘structure’ and ‘order’ on what could have been a complex meaning.

In the acrostic, the connection between ‘time’ and ‘marriage’ is an unusual, novel emergent property that arises through the process of various components – the various randomly generated words, the pair’s experiences, and the task constraints – interacting with each other in a complex manner. However, in the simile task, the connection or the imaginary situation (‘hope is like parking spaces’) is pre-given at the beginning of the task, requiring the pair to elaborate it freely. This different initial condition somehow leads to a different trajectory in their thinking: they seem to simply apply the known features of one concept to another instead of trying to transform their current conceptual space (that is, what they know about ‘parking spaces’). The process that they undergo is somewhat linear: because the meaning is known, there is a lack of desire to further transform their language and meaning. However, in the acrostic, their meaning is shaped and reshaped until the end, along with their language. The language changes as they use it to explore and construct the unknown.

**Recommendations for practice: Towards creativity**

Several recommendations can be offered for designing language learning tasks to promote rich, complex learner language. Attention needs to be given to the task conditions in which creativity can prosper. Creative tasks need to facilitate the working of a complex system. Tasks with higher formal and semantic constraints are more likely to engage students in creative processes, helping them to form their self-propelled zone of proximal development, and to actualise the ‘possibilities’ inherent and latent in themselves and the environment.

It is important to create opportunities for students to engage in the idea generation and exploration phases. In the idea generation phase, students should be involved in generating multiple pre-inventive forms without knowing in advance what functions they will serve. In the idea exploration phase, conditions also need to be set up to give students the opportunity to explore pre-inventive forms within constraints, making meaning in retrospect. Initiating and taking advantage of random events, working within the task constraints (both self-discovered rules and other-imposed rules), is important in the exploration and transformation of learner language and knowledge. The final meaning to be constructed should not be predictable *a priori*. In order to facilitate this, tasks need to be ill-defined rather than well defined (Tin, 2012). In a well-defined task, students are given clear instructions concerning the final outcome to be achieved. This often results in the use of familiar language and known utterances to talk about known, knowable, or predictable outcomes and meaning. In ill-defined tasks, the final outcome to be produced is not knowable in advance, and there are opportunities for the amplification of random events, for bifurcation, and for discovery of new constraints and rules as the task proceeds.
Future directions: Broadening ‘possibilities’

Studies on creativity in language learning are fewer than in other disciplines. Given the increasing importance of creativity, more research is required to delineate the role of creativity in language learning. In particular, processes involved in creative thinking and their role in language learning are underexplored, and process-oriented creativity studies are urgently needed. The findings of such studies will contribute to the design of language learning tasks and the promotion of conditions that can actuate the flow of creativity.

Investigating the creative process is a challenging task, because it involves gaining access to students’ thinking. Collaborative creative tasks are more desirable than individual creative tasks. However, creative development occurs over time and the use of short tasks, such as those used in the study reported here, has limitations. We need to study the process of creativity in the making over a longer time span in natural environments. Longitudinal case studies could be conducted, following a small group of students engaging in creative language learning tasks. Comparative studies can also be carried out, comparing two groups of students studying in two different types of course over a longer period (for example students studying following a creative language curriculum vs those following a traditional language curriculum), comparing the gains that they achieve over time.

Students’ success is often measured in terms of how well they perform in tests and examinations in many educational contexts. Thus, in order to persuade practitioners and policymakers to promote creativity in language learning, we also need to prove that students engaging in creative tasks can do well in language tests in addition to improving their creative competence. Such projects would be welcome topics for future postgraduate students and researchers who are willing to step differently on creativity – willing to find ‘new angles to look at the topic’, to broaden not only what we have done so far, but also what we can and may do, and to connect what we know today about creativity with what we could know tomorrow.

Related topics
creativity and dialogue; creativity and discourse analysis; everyday language creativity; language, creativity, and cognition; language, creativity, and remix culture; literature and language teaching; teaching creative writing

Note
1 The word ‘creativity’ has often been used in association with ‘complexity’ in many discussions of creativity in the linguistic discipline. Complex linguistic patterns emerge along with our constant need to construct new meaning (see, e.g., Steels, 2005). In other words, creativity (the human need to construct and communicate about new meaning) gives rise to the emergence of complex linguistic patterns – in particular, complex grammar.

Further reading
The book explores the creativity inherent in everyday spoken language and demonstrates how ordinary language users exercise language creativity in everyday contexts.
This book examines the importance of language play and creative language use for human life, human thought, culture, and language learning.
Creativity in second-language learning


This book contains a lively collection of chapters on the issue of creativity in general educational settings, and the role of creativity in learning and teaching.


Refer to this article for more information about how new ideas and language co-emerge or lag behind one another in different creative writing tasks. It investigates the cognitive processes that students undergo and the role of first language vs second language in two different creative writing tasks.


This article discusses several task features to be considered when promoting creativity for language learning.

References


Key to transcription symbols

... pause
@ laughter
(word) comments added by the transcriber
aaa translation (italics)
aaa original words in English (roman)
Appendix A

Extract 1 ('Time'): Transcript

1 N: What do you think? 'Time'.
2 S: 'Time'…
3 N: Somehow I think of 'gold'...
4 S: Yeah… 'money'
5 N: Why? Oh so 'time is money'…
6 S: Hmm…
7 N: 'Time'…
8 N: Yeah see, 'time is money'. @@
9 S: @@… 'Time is money'
10 N: What else is about 'time'? Uhh…
11 S: Let's write it down.
12 N: So what were we saying? 'Money'…Oh how about 'marriage'?
13 N: How do you spell marriage? @@…
15 N: @…Uhh… What else?
16 N: 'Food'? How does 'food' relate to time? …
17 S: Hmm…
18 N: 'Money, marriage'…What else? 'Patience'?…
19 N: 'How do you spell ‘patience’?'
20 S: Uhh do you want me to write?
21 N: @@ yeah you better do it.
22 N: 'Money, marriage, patience'… Time
23 S: Hm.
24 N: And ‘life’.
25 S: Hm.
26 N: 'Love’. Hm… 'Pressure'…
27 S: Hm. [writing]
28 N: What else?… 'Age'…Hmm…
29 S: Hm.
30 N: ‘Study’!
31 S: … ‘universe’?
32 N: 'Universe'? Good good. That's different. @@… not bad.
33 S: @@…
34 N: ‘Belief’…
35 S: ‘Why’?
36 N: because you said universe… @@
37 S: @@…
38 N: Hmm…
39 S: The most basic… 'watch' and…?
40 N: Oh yeah… ‘jewellery’!
41 S: Uhh why?
42 N: because you said 'watch'.
43 S: Oh…@ okay…
44 N: Hmm… ‘forever’ …
45 S: ‘Speed’…
46 N: Ohh!!!
47 N: Is this physics? @@…
48 S: Yeah @@ because I read a book recently …
49 N: Then how about ‘distance’? @@
50 N: What else? If we change an angle… something time-related …
51 S: Hmm…
52 N: Besides words… some behaviours?
53 N: 'Marriage is a behaviour', right?
54 N: Hmm…what else… ‘cooking’? …
55 S: Hmm…yeah 'cooking takes time'…
56 N: What else?…
57 S: Oh that ‘minute, second, month, year’, and something like that
58 N: Ohh oh…yeah......(long pauses)
84 N: So we have more words in group 2
85 S: Yeah...
86 N: What about money? Which group is money?
87 S: Should be like jewellery... group 4
88 N: Do we have more paper?
89 S: Yeah here...
90 S: 1.2.3.4...(counting)
91 N: What about money?
92 S: Should be like jewellery... group 4
93 S: Yeah sure... (starting drawing table and filling the table with words)
94 N: ...................(long pause)
95 N: Okay can you draw a table...?
96 S: Yeah sure... (starting drawing table and filling the table with words)
97 N: They are all time-related...(looking at group 2)
98 S: Yeah.
99 N: So let's start with group 2...what do you think?
100 S: Yeah...
101 N: They are all time-related... (looking at group 2)
102 S: I want to write something like... 'My energy'...
103 N: Hmm ..............
104 S: I'd like to write 'My' something... Here
105 S: Yeah or a verb...
106 S: So if we write... 'My' ...... But words start with T is hard...
107 S: @ yeah...
108 N: How about 'the one'...?
109 S: The one? Where?
110 N: Just... 'the one', starts with T
111 S: Oh yeah...we can add many words after the letter
112 N: Hmm yes...should be okay if we add only 2 more words...
113 S: But what if....... but it can only be time-related...
114 N: I just thought of 'eternal'... because many beliefs are about......you know...
115 S: I'm thinking... just because 'time may cause marriage to...prevent marriage from going... eternally'...
116 N: Hmm...prevent?
117 S: Yeah...because...... M is marriage and E is... like we said...eternally...
118 S: So if we can start with T...like....the one...or the one...... something...
119 N: Hhm...prevent?
120 S: Yeah...because...... M is marriage and E is... like we said...eternally...
121 N: Hmm....
122 S: So if we can start with T...like....the one...or the one...... something...
123 N: Oh I know what you mean...so it's marriage...eternally...
124 S: Yeah...
125 N: So the exact word is 'eternal'?
126 S: ...eternally.
127 N: Eternally.
128 S: Oh do we need a noun?
129 N: Is eternally adjective?
130 S: Uh...adverb..
131 N: Okay...so give me a sentence...
132 S: Ahhh.....
133 N: Yeah something something eternally...
134 S: Hmmmm... 
135 N: When do you use eternally?.....
136 N: It is 'The one thing that prevents marriage going eternally'... because time has limits...
137 S: Ohhhhh!!! I see I see. (feeling excited)
138 S: @@ .............
Appendix B

Extract 2 (‘Hope is like parking spaces’): Transcript

S: So we have to write a simile poem...
N: Yeah two to three sentence
S: ................what do you think?
N: ........... ‘people tend to’ 'people tend to’
umm...wait, don’t write yet
S: Oh...
N: Hmm...
S: ‘Unpredictable’?
N: ‘Unpredictable’..... I was thinking ‘people tend to steal parking spaces... take... tend to take your space .... take your spot before you get it’...
S: Why is it like hope?
N: because ‘it’s like people taking your hope away’
S: Ohh!!! I see...
N: Yeah
S: So negative @@...
N: @@ yeah negative from beginning to the end @@
S: Umm........ ‘so people take away other’s hope’...

S: ‘Like’...
S: ‘by taking their spots’? @@
N: Yes, ‘like they are all in front of you and you watch them take them away so unpredictably’...
S: Oh......you seem to know it very well
N: Yeah personal experience...very bad feeling...
S: @@...
N: Uhh.........
S: So how many reasons do we have?
N: Hmm...two...one is ‘parking spaces are......
hard to get’, the other is... ‘people steal parking spaces from others’...
S: Hmm.............
N: ‘Stealing others’ parking spots’.....
S: ...................(writing)
N: I think we need ‘and’...(watching S write)
S: Okay............. (writing)
N: Hmm ....... can I change it a bit?
S: Yeah yeah sure, go ahead
N: Okay...........people..........(writing)
S: Umm.........
N: And ‘people steal...... people steal each other’s’ .......
S: You really like ‘each other’ @...
N: .... ‘each other’s......parking spaces......
like ...... hmmm...destroying their hope’...yeah (writing) ....
S: (read the sentence written) Should we split the sentence?
N: What do you mean?
S: Like writing a poem we have to have......
different lines...
N: Oh......we can add the thing in the middle...the...slash?
S: Yeah yeah..... so do we need the ‘and’?
N: These two sentences are already connected by ‘and’. So full stop and then next one?
S: So no ‘and’?
N: Yeah why not ......like this ...............
S: Okay done.
N: Yeah.