
A Complex Adaptive Systems Analysis of the Dogme ELT Approach

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Abstract

This paper analyzes the Dogme English language teaching approach through a complex adaptive systems (CAS) perspective. The name Dogme derives from a filmmaking movement that deprecated technical wizardry but focused on story and audience; Dogme in language teaching deprecated over-reliance on materials and technology but focused on learners and relevant content. The three core precepts of Dogme are: (1) teaching is conversation-driven, (2) teaching should be materials-light, and (3) teaching focuses on emergent language. Were one to create an ELT approach based on CAS theory from a blank slate, the result would likely be very close to Dogme. CAS theory emphasizes emergent phenomena, which would be L2 for the purposes of this research, and the focus Dogme gives to interactions fosters this emergence. Dogme distributes authority for learning among learners as well as teachers, creating a CAS comprised of learners and teachers. Dogme reduces or eliminates the need for coursebooks for they are seen as hindrances to interactions and information flow necessary for adaptive walks.

1 Introduction: Dogme

Meddings and Thornbury (2009) characterize the Dogme approach in English language teaching through ten key principles and three core precepts

as given below. The name Dogme derives from a filmmaking movement that deprecated technical wizardry but focused on story and audience; Dogme in language teaching deprecated over-reliance on materials and technology but focused on learners and relevant content (Meddings & Thornbury, 2009, p. 6). This paper presents a complex adaptive systems analysis of Dogme. The analysis will follow the organization of Meddings and Thornbury (2009): ten key principles of Dogme and three core precepts derived thereof. The three core precepts are further divided into subtopics, again following Meddings and Thornbury.

The ten key principles of Dogme follow; words in bold italics are from the original indicating keywords of the associated principle.

- Materials-mediated teaching is the ‘scenic’ route to learning, but the direct route is located in the *interactivity* between teachers and learners, and between the learners themselves.
- The content most likely to *engage* learners and to trigger learning processes is that which is already there, supplied by the ‘people in the room’.
- Learning is a social and *dialogic* process, where knowledge is co-constructed rather than ‘transmitted’ or ‘imported’ from teacher/coursebook to learner.
- Learning can be mediated through talk, especially talk that is shaped and supported (i.e., *scaffolded*) by the teacher.
- Rather than being acquired, language (including grammar) *emerges*: it is an organic process that occurs given the right conditions.
- The teacher’s primary function, apart from promoting the kind of classroom dynamic which is conducive to a dialogic and emergent pedagogy, is to optimise[sic] language learning *affordances*, by, for example, directing attention to features of the emergent language.
- Providing space for the learner’s *voice* means accepting that the learner’s beliefs, knowledge, experiences, concerns and desires are valid content in the language classroom.
- Freeing the classroom from third-party, imported materials *empowers* both teachers and learners.

- Texts, when used, should have *relevance* for the learner, in both their learning and using contexts. Texts are a resource, not the focus. Teachers can use a different pedagogical sequence than the textbook authors.
- Teachers and learners need to unpack the ideological baggage associated with English Language Teaching materials — to become *critical* users of such texts. (Meddings & Thornbury, 2009, pp. 7–8)

The Three Core Precepts of Dogme:

- Dogme is about teaching that is *conversation-driven*.
- Dogme is about teaching that is *materials-light*.
- Dogme is about teaching that *focuses on emergent language*.
(Meddings & Thornbury, 2009, p. 8, italics in original)

2 Complex Adaptive Systems

This section introduces key concepts from complex adaptive systems (CAS) used in the analysis of Dogme. As their name implies, CAS consist of elements interacting in complex relationships which can adapt to changes or self-organize; what emerges out of the system cannot be predicted by observing only isolated elements, such as a bee colony cannot be predicted from observing a solitary bee. CAS are open systems with information, energy, and elements entering from the surrounding environment; this allows emergent behavior as opposed to closed systems which run down due to increasing entropy. CAS are also feedback sensitive; feedback sensitivity is one of the common features of CAS listed by Larsen-Freeman (1997).

Holland (1995) postulates seven basics for CAS that comprise four properties and three mechanisms. This analysis will use aggregation (property), tags (mechanism), flow (property), internal models (mechanism), and building blocks (mechanism). Aggregation refers to how a system is organized, or in the case of CAS, self-organized, and tags facilitate aggregation by breaking the symmetry of elements or information so that they can be separated and classified. CAS have information and feedback flows among their interconnected elements; the connections are dynamic and help

determine how information flows. Internal models are schema that help the CAS make predictions and building blocks are subsystems that make up internal models.

Fitness landscapes (Kauffman, 1995, p. 26) are important to understand how CAS are able to display emergent behavior and self-organization. Fitness landscapes are multidimensional constructs, where for every configuration of the system an overall fitness value is assigned. For a complex adaptive system comprising students and teacher, one configuration point can include thousands of variables, not only L2 level but also the general health of the students, the time of day, the classroom layout, the lesson they are learning, student-teacher rapport, and so on. Fitness can be measured in many ways, such as L2 fluency or L2 grammaticality. As variables among the complex adaptive system elements change, the position and height on the fitness landscape also change. Continually changing variables in a complex adaptive system will map out a path on the fitness landscape, known as an adaptive walk. As a complex adaptive system approaches a peak on the fitness landscape better L2 performance emerges. Changing variables by a large amount will create a large displacement, or long jump, on the fitness landscape. Fitness landscapes are not static; individual complex adaptive system elements can deform the fitness landscape, for example, by asking a difficult question placing others in a temporary fitness landscape valley. A complex adaptive system can find itself on a peak, but there might be higher peaks available. An adaptive walk off the current peak would be necessary to find a higher peak.

When a complex adaptive system reaches the edge of chaos condition (Kauffman, 1995, p. 26), peak climbing and fitness landscape exploration become efficient. CAS can exhibit chaotic behavior where doing anything productive becomes impossible, as in a class where decorum has been lost. At the other end of the scale, a complex adaptive system can be orderly to the point of being lethargic or unimaginative. In between these poles lies the edge of chaos, where order provides foundation but chaos provides creativity.

Gell-Mann (1994, p. 25) provides a diagram detailing how a complex adaptive system works. Current data entering a complex adaptive system is combined with previous data to make a prediction, based on various competing schema, of how to react. Real world consequences become feedback to decide

the viability of the various schema. The schema represent various paths on the fitness landscape and the real world consequence would determine the fitness of the prediction.

CAS tend to be sensitive to initial conditions (Larsen-Freeman, 1997) where slight changes in the initial configuration can lead to large differences in outcomes. However there are subsets of initial conditions that are attracted to one particular outcome, such as a fitness landscape peak. These outcomes are known as strange attractors (Casti, 1994, p. 29). One point of strange attractors is that although, using adaptive walks as trajectories, paths come close together at the attractor, they don't cross or duplicate each other, making unique paths. Kauffman finds for some fitness landscapes, when looked at upside down with peaks becoming valleys, "the deepest valleys drain the widest basins" (1995, p. 178), a type of inevitability similar to a strange attractor.

Pattern extraction is one feature shared by Dogme and one type of CAS, the parallel distributed processing (PDP) model of cognition (McClelland, Rumelhart, & the PDP Research Group, 1986), otherwise known as neural networks or connectionism. PDP models consist of "a set of processing units" with "a pattern of connectivity among" them (p. 46), similar to how CAS are described.

3 Ten Key Principles

The ten key principles, identified by their respective key words, are analyzed from the CAS perspective.

Interactivity

Interaction is fundamental to CAS; through the interactivity principle two types of CAS are established, that of the student-student and teacher-student systems. Implied in interactivity is feedback sensitivity among system elements; the usual teacher-student system of one-way information transfer incorporates little feedback from student to teacher and the teacher would be resistant to change from said feedback. From the CAS perspective, materials-mediated learning is the indirect route because it tends to isolate students on a fitness peak, defined by the materials themselves, that is, the proficiency in

what the materials are teaching; but this peak is separated from peaks where the learning goal is acquired to the point of being a natural part of the students' L2 system. Thus the scenic metaphor is used, materials being isolated photo stops along some route. Having the learning goal emerge out of some intrinsic need in student-directed interaction connects the learning goal to various contextual schema, locating students on an embedded peak rather than an isolated one. During student-directed interaction the students, as a complex adaptive system, have freedom to explore a fitness landscape searching for peaks whereas having materials-directed interaction restricts the pathways available to CAS.

Engage

The familiarity of the content, being supplied by the students themselves, means the complex adaptive system already is located on a high peak and discovering higher ones, representing the learning process, is easier. Finding different or new interpretations of, or building upon, the content is facilitated by its familiarity. Content from learners is more likely to stir interest than that from textbooks; the content acts as a tagging mechanism for the aggregation of members' attention, that is, engagement.

Dialogic

This principle centers on co-construction of knowledge which necessarily involves a complex adaptive system comprised of either student-teacher or student-student combinations. As clearly stated learning is not a one-way process. All members of the complex adaptive system are expected to learn and contribute, including the teacher; in this manner the complex adaptive system increases in fitness. Each contribution represents a step along an adaptive walk across the fitness landscape. Knowledge is not seen as concentrated, for example, in the teacher, but as distributed among all members. Learning is an emergent phenomena arising from the social interactions of the complex adaptive system members. Finally, in comparison with one-way teacher-student instruction, dialogic learning engages more subsystems, especially those related to social interaction, increasing the connections for a correlated fitness landscape.

Scaffolded

In an interactive teacher-student complex adaptive system, scaffolding provided by the teacher acts as signposts towards higher peaks on the fitness landscape. On the teacher side, the scaffolding is adjusted according to the response of the student. On the student side, a higher fitness state is reached indicated by improved responses. Combined, the teacher-learner complex adaptive system finds a higher peak in terms of an efficient learning experience. Note that it may not be the most efficient, since the peak reached is one of many depending on the myriad factors that can affect a teacher-student interaction. If the complex adaptive system is at the edge of chaos, scaffolding provides the order upon which chaos can build new structure. At the edge of chaos, the teacher and student would most likely be maximally engaged to achieve a learning goal, the adaptation occurring in real time through information flow, i.e., talking.

Emerges

Meddings and Thornbury (2009, pp. 18–19) explicitly rely on complex adaptive systems theory by introducing emergent language learning; more analysis will be provided in the section concerning the third core precept.

Affordances

Feedback sensitivity is one of the keys to this principle. From the teacher's point of view, discovering teaching moments requires constant attention; from the students' side, the teacher's interruptions need to be accepted and expected. Note that not only teachers but students can create affordances through requesting assistance from the teacher; affordances can be initiated by all members of the teacher-learner complex adaptive system.

Another important aspect of affordances is that they raise the fitness of a complex adaptive system in situ wherever it finds itself on the fitness landscape. All the connections and contexts are preserved such as those created and built during a task-based language learning activity. There is less chance of being placed on an isolated peak in the case of pinpoint textbook exercises of a notion or function.

Voice

The principle of voice is indispensable for creating a complex adaptive system for student-student and teacher-student configurations. Attending to students' beliefs, knowledge, experiences, concerns and desires is a clear example of feedback sensitivity. In contrast, language practice activities such as reading aloud a textbook dialog with a partner requires very little sensitivity; knowing that one's partner has finished speaking signals one's turn to speak. Meddings and Thornbury (2009) state "Speakers can interact without necessarily registering what their co-speakers are saying" (p. 9). The content communicated from one's partner may have little or no impact on the progress of the activity.

Having voice as a central part of an activity naturally creates communication channels with every member in the complex adaptive system, creating an environment where adaptive behavior can emerge.

Empowers

Empowerment gives students authority to direct or steer the complex adaptive system along learning paths on the fitness landscape. This embeds the concept of an adaptive walk into a Dogme activity. A self-directed adaptive walk opens the possibility of finding a higher fitness peak than what an instructor may have envisioned. Additionally, some paths taken may end up in dead ends but simultaneously add to a knowledge base of what works.

Empowering students focuses on local needs, a bottom-up approach that naturally incorporates existing internal models; the internal model of L2 in each student is the target of change for language learning activities. However, in bottom-up processing the actual fitness peak is not specified, as would be in a top-down activity; the complex adaptive system will find its own fitness peak which may or may not coincide with the instructor's purpose in assigning the activity.

Relevance

Having texts relevant to learners is equivalent to making paths to fitness peaks easier to find. Relevance implies many internal models and building blocks are already known so the complex adaptive system can start on a

relatively high fitness peak as opposed to a low valley when unfamiliar texts are used.

Critical

Ideological baggage places the complex adaptive system on a different fitness peak, where both L2 fitness and fitness associated with understanding the accompanying ideology are combined. As with relevance, an unfamiliar ideology will locate the complex adaptive system in a valley, which may be alleviated if language and ideology are disentangled. The task of disentangling has the advantage of forcing the complex adaptive system to further explore the fitness landscape.

4 Core Precept: Conversation-Driven

Meddings and Thornbury (2009, p. 8) lists five reasons for having conversation central to language learning.

- Conversation is language at work.
- Conversation is discourse.
- Conversation is interactive, dialogic and communicative.
- Conversation scaffolds learning.
- Conversation promotes socialisation[sic].

These points will be examined in turn through the CAS lens.

Conversation is language at work

Emergent phenomenon from a complex adaptive system arise out of the interactions among its members of which conversation is the chief mode during fluency activities. In fact, when Meddings and Thornbury (2009) are describing task based learning, they are describing a process of emergent phenomena produced by interactions: “the learner’s production forms the raw material for subsequent language-focused work” (p. 9).

The Gell-Mann diagram (1994, p. 25) involves competing schema, which are produced when the participant in a conversation observes “language at work.” Gass and Selinker (2008) describe the process as follows.

... [Intake] is where incoming information is matched up against prior knowledge and where, in general, processing takes place against the backdrop of the existing internalized grammatical rules. ... Some of the major processes that take place in the intake component are hypothesis formation, hypothesis testing, hypothesis rejection, hypothesis modification, and hypothesis confirmation. (pp. 486–487)

The interlocutor should be feedback sensitive to notice differences in how language is being produced and his or her understanding of the language; in other words, this is a type of noticing of the gaps (for example, see Robinson, Mackey, Gass, & Schmidt, 2012). Noticing of gaps also helps the learner know his or her rough location on a fitness peak (how much more work would be necessary to scale the peak).

Conversation is discourse

Language learning is seen from the discourse level as opposed to the reductionist, isolated sentence level. The holistic approach is congruent with CAS theory of not focusing on constituent parts but rather the emergent phenomena, which is discourse in this case. Holland's (1995) building blocks mechanism will consist of discourse level items rather than grammatical units that are the focus of many textbooks.

Conversation is interactive, dialogic and communicative

As to interaction, Meddings and Thornbury (2009) mention “[t]he input-output-feedback loop is basic to cognitivist models of language learning” (p. 9). This is a simplified version of Gell-Mann's diagram (1994, p. 25) of how CAS operate.

Dogme promotes conversing about personal topics (Meddings & Thornbury, 2009, p. 10) rather than artificial ones, such as pretending to be a bank teller and customer. As previously discussed in the section on the *engage* key principle, the complex adaptive system can initially be on a higher peak using familiar building blocks as well as find higher peaks more easily.

Conversation scaffolds learning

Conversations lend themselves to creating zones of proximal development (Vygotsky, 1978) which are referred to as scaffolding by Meddings and Thornbury (2009) whereby “[t]he ‘better’ other provides the interactional support within which learners can feel safe enough to take risks and extend their present competence” (p. 10). A zone of proximal development approximates an edge of chaos condition, where complex adaptive system members are quickly climbing fitness peaks. The ‘better’ other adapts interactional support for learners (knowledgeable/representing the orderly regime) who are trying to adapt to take advantage of the support (unknowing/the chaotic regime).

Conversation promotes socialisation[sic]

Meddings and Thornbury (2009) gave the following example about socialization and language learning (Peirce, 1995, cited in Meddings & Thornbury, 2009):

Bonny Norton Peirce monitored the progress of a number of immigrant women in Canada over an extended period of time. She was able to account for their successes and failures to learn English by the extent that these women were socialised[sic] into particular discourse communities, and, specifically, the extent that these communities granted them the ‘right to speak’. (p. 11)

Socialization is key to making connections among CAS members and facilitating the flow of information. Further, the classroom is itself a discourse community:

An effective way of doing this [incorporating daily experiences and social identities] is simply to make the classroom a discourse community in its own right, where each individual’s identity is validated, and where learners can easily claim the right to speak. (p. 11)

The discourse community is an important concept because it is essentially an

example of a complex adaptive system, although the usual case in the classroom individual outcomes rather than that of the class as a whole are evaluated. From the CAS point of view, one point of evaluation would be how well the lesson facilitated a discourse community for all members.

5 Core Precept: Materials-Light

A core precept of Dogme is to reduce or eliminate dependence on textbooks and other materials, to increase interaction time among the students, or from the CAS perspective, enhance interactivity and information flow. Meddings and Thornbury (2009) make several key observations about the use of materials in the Dogme approach.

Anti-text

About the Dogme approach's reluctance toward using textbooks, Meddings and Thornbury (2009) state:

the sheer amount of published material available threatens to stifle the opportunities for conversation that (as we have argued) are so important for language development. By reducing the amount of material that is imported into the classroom, the teacher frees the learning space for the kind of interactive, talk-mediated learning opportunities that are so crucial for language development. (p. 12)

From the CAS perspective, materials stifle opportunities for adaptive walks that are necessary for emergent phenomena, that is, language development. Materials tend to direct and limit the flow of conversation, for example, in order to highlight a particular grammar pattern.

Pretexts

Meddings and Thornbury (2009) criticize texts in standard textbook because of a lack of prioritizing cognitive and affective engagement, "hence their banality" (p. 12). From the CAS perspective, this means including cognitive and affective engagement in the definition of fitness. When texts

incorporate this type of fitness, they are suitable as pretexts for an activity, to place a complex adaptive system on a higher initial position on a peak: “Of course, materials *could* provide a stimulus for real communication and conversation, and many textbook writers include discussion and personalisation[sic] tasks to this end” (p. 12, italics in original).

Subtexts

Meddings and Thornbury (2009) state textbooks with subtexts “embed cultural and educational values that may have little to do with the needs of the learner, especially the learner of English as an *International Language (EIL)*” (p. 12, italics in original). Irrelevant ideologies and agendas will make fitness peak climbing harder. On the other hand, subtexts may align with the image of fitness held by the learners, heightening feedback sensitivity and increasing the rate of finding peaks: “the consumerist nature of coursebook content also reflects the aspirations of many learners of English, who view the acquisition of English (rightly or wrongly) as a passport to material well-being and international travel” (p. 13).

Contexts

Meddings and Thornbury (2009) argue materials should reflect the local context. One way is adopting a stance of critiquing the subtexts vis-a-vis the learners’ cultural or social values, which encourages the class to take novel adaptive walks searching for fitness peaks that combine language learning and understanding the shortcomings of the subtexts. The second way is to use local materials, which eliminates climbing peaks that incorporate unfamiliar ideas. The third way is to “abandon teaching materials altogether” (p. 13). Materials emerge from the learners themselves or their environment. The context drives the adaptive walks taken by the learners-teacher complex adaptive system.

Own texts

Rather than a depositor (teacher) and bank (learners) model of education, Meddings and Thornbury (2009) agree with Freire’s dialogic model (1970) of teacher-student and student-teachers. The “local needs and concerns of the

participants” (p. 14) form the basis of education; learning is based “on themes that were elicited in consultation with the learners themselves, and replacing the imported texts with the learners’ own texts” (p. 14). In this case the fitness landscape exploration is easier because much is familiar to the participants. The students and teacher are linked together in a complex adaptive system to climb fitness peaks together.

Whole texts

The use of whole texts, as opposed to those based on reductionist grammar, aligns with the philosophy of CAS theory, where the whole is greater than the parts. Whole texts arises out of whole language learning which claims “language is best learned in authentic, meaningful situations, ones in which language is not separated into parts, ones in which language remains whole” (Strickland & Strickland, 1993, as cited in Meddings & Thornbury, 2009, p. 14). The use of whole texts relies on the power of self-organization to create meaning from the input; patterns and meanings are woven together with usage in context. The usual reductionist method gives learners the organization (structure, grammar) first, but this eliminates the possibilities of adaptive walks and discovering nuances along the way.

Other texts

CAS are open systems and therefore information flows in from the surrounding environment. Working from a textbook emulates a closed system where energy levels for study tend to diminish. Other texts refer to those brought in by learners which can help replenish and maintain the class’ penchant for learning; other texts become the information inflow to the CAS classroom.

Learning texts

Inasmuch as learning texts motivate learners, they are essentially tags that facilitate the aggregation, metaphorically, of learners’ attention and enhance communication (information flow) with the teacher. Created out of interactions between teacher and learners, these tags/learning texts are unique to each class; this goes against the idea of having a common coursebook.

6 Core Precept: Focuses on Emergent Language

Dogme explicitly references CAS theory in that language is seen as an emergent phenomena arising from interactions among teacher and learners; this is further elaborated in the section on emergence versus acquisition below. The following sections in Meddings and Thornbury (2009) try to answer concerns about the coursebook-free and relatively unstructured Dogme approach.

Uncovering versus covering

Whether a syllabus can be covered with Dogme is countered by Meddings and Thornbury (2009) with “uncovering the ‘syllabus within’” (p. 16). In essence this is an exploration of the fitness landscape. The “syllabus within” are the peaks of the landscape for the particular context the complex adaptive system is embedded in, such as the language needed to complete a task or the learning goals of the course. Through adaptive walks and peak climbing the “language—rather than being *acquired*—will *emerge*” (p. 16, italics in original).

Communication versus code

Meddings and Thornbury (2009) recommend avoiding teaching code, which they define as vocabulary and grammar (p. 17) but focus on communicative aims. They agree with Allwright that syllabi that control sequence and selection of code to be taught would most likely “interfere with learning, since, given the state of our knowledge in such matters, it could only be appropriate by chance” (Allwright, 1979, cited in Meddings & Thornbury, 2009, p. 17). Even tasks are seen as “artificial and cumbersome” (Meddings & Thornbury, 2009, p. 17) when compared to “naturally occurring talk” (p. 17). In other words, natural exploration of the fitness landscape is preferred over being placed in an artificial fitness landscape where peaks may be isolated and thus not embedded within a context.

Process versus product

For Meddings and Thornbury (2009), process takes precedence over products (such as learning a grammar point). They advocate a process

syllabus: “a syllabus that grows organically out of the needs and interests of the learners: there are no pre-selected goals or specifications of content. It is also a *negotiated* syllabus” (p. 18, italics in original). This statement establishes a classroom complex adaptive system that definitively includes the teacher along with the learners. The direction the complex adaptive system takes on the fitness landscape depends on the outcome of communication among the complex adaptive system members.

Emergence versus acquisition

In this section, Meddings and Thornbury (2009, pp. 18–19), cite CAS theory as a theoretical basis of the Dogme approach, especially for L2 as an emergent phenomenon. They state “language is an emergent phenomenon, driven by massive exposure and use” (p. 19). Self-organization is an important cognitive process: “the capacity to extract patterns from input, the capacity to form and strengthen associations, and the capacity to chunk sets of already formed associations into larger units. By means of these simple operations, acting upon massive input, sound and word sequences are chunked into larger units, out of which emerges the complexity we call grammar” (p. 19). This description corresponds to CAS learning models developed for neural networks or parallel distributed processing (McClelland, Rumelhart, & the PDP Research Group, 1986), especially in pattern extraction and association strengthening.

Second language versus first language

The L1 “intricate associative network” (Meddings & Thornbury, 2009, p. 19) inhibits fitness landscape exploration for L2 because L1 peaks are high; “progress [in L2], if any, will be slow” (p. 19). Often a complex adaptive system (in this case, a single individual) must make a long jump on a fitness landscape to reach the L2 peaks; many variables of the associative network must change simultaneously, the changes being relatively large as in, for example, pronunciation. Being a network means the linked entities must also reflect the changes of the long jumps. Alternatively, learners are on a high peak in terms of communication fitness through the use of L1; they must descend to a valley of communication fitness with respect to L2 before climbing peaks of L2

fitness.

Responsive teaching versus pre-emptive teaching

Responsive teaching is carried out as the need arises (as opposed to pre-emptive teaching trying to anticipate these needs): “if learners are having trouble identifying and abstracting patterns, their attention can be purposefully directed at them” (Meddings & Thornbury, 2009, p. 19). Essentially responsive teaching dynamically alters the fitness landscape during an adaptive walk so the complex adaptive system can find peaks more easily, to create signposts pointing to paths leading to fitness peaks.

7 Conclusion

Were one to create an ELT approach based on CAS theory from a blank slate, the result would likely be very close to Dogme. CAS theory emphasizes emergent phenomena, which would be L2 for the purposes of this research, and the focus Dogme gives to interactions fosters this emergence. Dogme distributes authority for learning among learners as well as teachers, creating a complex adaptive system comprised of learners and teachers. Dogme reduces or eliminates the need for coursebooks for they are seen as hindrances to interactions and information flow necessary for adaptive walks. Meddings and Thornbury give an account of a volunteer language teacher in the rainforests of New Guinea who, though having lost all the teaching materials in an accident, was still able to cover the syllabus despite letting the students dictate the lesson contents. This is indicative of the existence of a strange attractor associated with language learning, that though initial approaches may be unique, the complex adaptive system will end up on an L2 peak even without the guidance of a coursebook.

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