Creativity Syntax: Codifying Physical Space’s Impact on Creativity in the Workplace

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ABSTRACT
The impact of the physical environment on people’s ability to be optimally creative at work is a research area which has only now, in the past decade, started to receive detailed attention. Although creativity in the workplace has been the subject of intensive research for over half a century researchers have stepped away from or minimized the effect that the physical environment may have on people’s creativity and ability to innovate. Building on recent work done in the field, and on earlier theories of pattern language and shape grammar, this paper outlines work that moves towards a grammar of creative spaces identifying and codifying those elements of the physical environment which may optimize creativity in the workplace.

Author Keywords
Creativity, physical press, shape grammar, grammar of creative spaces, creative footprint.

ACM Classification Keywords
A.0 General Literature
General Terms
Design, Human Factors, Theory

INTRODUCTION
Exploring how physical space impacts people’s creativity in the workplace has led me to hypothesize the need for, and endeavor to write, a grammar of creative spaces. In doing this I am seeking to identify and codify the three main elements of such a grammar: lexis, syntax and meaning [4], positioning the work as an explicit grammar rather than a pattern [1]. The content of each of these three elements is derived directly from the research data. Thus identified elements of physical space create the lexis; data categories of creative activities suggest the syntax governing the lexical elements’ ordering; and the stimulus and support for small-c workplace creativity [18] identified by research respondents is the semantic and pragmatic meaning produced by that ordering.

BACKGROUND & RELATED WORK
Creativity research post-Guilford [8] has focused on the four Ps of creativity [16]: the creative person, the creative product or outcome, the creative process, and the press or environment within which creativity occurs [2], seen mainly, until recently, in terms of social rather than physical environment. My work draws on previous research in multiple areas, including McCoy’s work demonstrating the link between physical space and creativity [14, 15], examinations by Lewis & Moultrie among others of creative spaces in organizations [11, 9], work on visual grammars by Stiny and others [19, 12], and work on patterns by Alexander et al in architecture [1] and Qian & Woodbury [17] in digital interpretation. I also draw on Gibson’s theory of affordances [7] and linguistic grammar [4, 10].

In the field of creativity research, novelty and usefulness are, by consensus [13], seen as defining characteristics of creativity. Simonton [18] also posits different types or levels of creativity that can be graded on a continuous scale of creative activity: from big-C creativity which changes and contributes to both culture and history, to small-c creativity used by people in their daily and working life for improved problem-solving. In response to my research data, in which most subjects see their work creativity as novel and useful, and positioned on Simonton’s continuum, I work from these definitions in my thesis.

METHODOLOGY
The grammar of creative spaces is emerging from research undertaken in a variety of office environments through a staged research process of interviews and case studies. I have used constructivist grounded theory [3] for both data collection and analysis. The final grammar version will be tested and refined in one or more work environments.

THEORY
As referenced earlier, the literature of linguistic grammar identifies three common elements: lexis, syntax and meaning (semantic and pragmatic). Chomsky’s theory of a syntax-neutral grammar [4], i.e. one in which syntacticality is not dependent on meaning, enabled the creation of non-linguistic visual grammars such as shape and landscape grammars [19, 12]. Each of these visual grammars adheres to the same three-element structure. Thus Stiny’s shape grammar has bounded shapes as its lexis, Euclidean transformations as its syntax, and good design as its meaning. I adopt the same structure in building a grammar of creative spaces, where the three-part structure has emerged from the data.
Physical Press

Having analyzed my data through the constant comparator method [3], I argue that physical press or environment is made up of three discrete and overlapping categories: specificity (where and what the place is), properties of the place, and its affordances (the possibilities for action that are afforded [7] to the space’s users). In interviews and in case studies these three categories are consistently called forward, and are also present in the literature [15]. I further argue that these three categories form a key part of the basis for an explicit grammar of creative spaces.

Grammar of Creative Spaces

Categories of data pertaining to each of the three aspects of grammars – lexis, syntax and meaning – emerged from the data sets, becoming saturated [3] during analysis.

Lexis: Research subjects consistently identified aspects of physical press supporting their workplace creativity: specificity, properties and affordances. A wide range of elements appeared time and again in each of these three categories, populating the lexis of spaces necessary for people to be creative in the workplace. This quotation sits in the saturated categories of natural light and views: “Here we get direct sunlight. [The office] just got a bright atmosphere about it […] I see the water and it’s nice.”

Syntax: Subjects consistently identified the same categories of activities supporting their creativity. “Take notebooks, take a day [walking], think something, come back.” These are seen as those activities that led, by chance or deliberately, to an engagement between people, ideas and information; and those that led to a disengagement, allowing time for incubation [21]. These activities, I suggest, form the syntax or rule-base of the grammar which order the lexis of elements of physical space.

Meaning: “It is important […] to have meetings [in places] where […] junior staff can feel very safe […] You get some really good ideas.” I am currently working on this aspect of the grammar. Meaning in linguistics is categorized either as semantic: the association of words with their meaning [20] or pragmatic: the relationship of those words to an external context. Translating this to the context of a grammar of creative spaces, semantic meaning may be the association of a specific aspect of physical press with the degree to which it enables creativity in an individual. Pragmatic meaning in this context is, I would suggest, the way in which an individual or group identifies the precise lexicon they need in order to optimize their creativity.

DISCUSSION

My interim research findings indicate that everyone has their own unique creative process for generating and developing ideas. To do so, each person needs a physical environment that actively supports this uniqueness, their creative footprint [22]. These creative footprints are at one and the same time unique to the individual and composed of common elements. The grammar of creative spaces defines these elements and their structure, and simultaneously relates them to the context within which the individual is situated and needing to be creative.

CONCLUSION

The grammar is at a critical point of emergence, and I would welcome the opportunity to talk it through with my peers, including an anticipated technology development.

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REFERENCES