"Trapped under a tonne of rubble": using LEGO® to explore conceptual metaphors of psychological stress

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Abstract

Qualitative research methods have recently gained substantial ground in psychology; however, creative methods of data collection are still underused. Here we share our experiences of using LEGO® as a visual qualitative methodology to elicit metaphors of psychological stress. We highlight the value of this method through showcasing some examples of a research project that used LEGO® in a workshop to enable in-depth exploration about the lay conceptualisation of stress. LEGO® is an excellent tool for externalising and communicating thoughts about abstract concepts such as stress and coping. It is easy to use, attractive to participants and provides opportunities for sharing experiences and having fun. From the researcher's perspective, LEGO® enables collection of enriched data which can shed new light on the research topic. It can be a useful visual methodological tool for enhancing and empowering qualitative researchers in many areas of psychology.

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1. Theoretical background

In recent decades the term 'stress' has become extremely popular in both academic and everyday discourse, even though it is criticised as a vague and misleading concept (Kagan, 2016). Lay conceptualisation of stress may play a vital role in how people appraise and deal with specific experiences of stress, which in turn may influence their well-being (Crum, Salovey, & Achor, 2013; Keller et al., 2012; Lazarus & Folkman, 1984). Although individual beliefs may influence the appraisal, research on public understanding of stress is scarce (see e.g. Kilby, Sherman, & Wuthrich, 2020; Souza-Talarico et al., 2016). Analysing conceptual metaphors can provide clarity about meaning and understanding of stress. In this section, we will introduce Conceptual Metaphor Theory (Lakoff & Johnson, 1980), provide a brief review of conceptual and linguistic metaphors used to think and talk about stress, and explain why analysing metaphors of stress might be important. Then we will address playing with LEGO® as a mean for metaphor elicitation. In the following part, we will explain how we used LEGO® in our project on lay understanding of stress and share some observations and reflections about the method.

1.1. Metaphors and stress

According to Conceptual Metaphor Theory (Lakoff & Johnson, 1980), metaphors enable conceptual links between two different conceptual domains: the target domain, which is more complex, abstract or less familiar, and the source domain, which is more familiar, concrete, or accessible through physical or perceptual experience (Kovecses, 2010). For example, people may refer to a physical fight or war to describe having an argument. This suggests there exists a conceptual metaphor ARGUMENT IS WAR[1] – a systematic set of correspondences between the two domains which is expressed with linguistic metaphors i.e. phrases such as *winning an argument, bombarding someone with arguments, indefensible claims.*

For centuries, metaphors were considered embellishments with no other function than making the utterance more attractive. However, Lakoff and Johnson (1980) claim that "metaphor is pervasive in everyday life, not just in language but in thought and action. Our ordinary conceptual system, in terms of which we both think and act, is fundamentally metaphorical in nature" (p. 3). Today, it is widely accepted that metaphors play a crucial role in discourse, and have different functions such as clarification, explanation, evaluation,

[1] Following the convention, to distinguish between metaphorical linguistic expressions and conceptual metaphors, the latter are usually reported in A is B (target is source) format with the use of small caps

description, and entertainment (Deignan, 2005; Knowles & Moon, 2006; Kovecses, 2010; Lakoff & Johnson, 1980). Recent developments in cognitive science suggest that cognition is embodied; people use physical experiences, bodily sensations and movements to understand the world and build conceptual knowledge (Barsalou, 2008; Fincher-Kiefer, 2019). Conceptual metaphors involve mapping abstract concepts onto more concrete, familiar concepts, such as physical experiences; hence they are not just a tool for talking, but also enable thinking.

As a scientific term, 'stress' began its career in physics (Cox & Griffiths, 2010; Hinkle Jr, 1973) denoting 'a force per unit area within materials that arises from externally applied forces, uneven heating, or permanent deformation' (Stress, n.d.). When introduced to biological and social sciences it acquired a new meaning in the context of state and behaviour in living beings yet retained its focus on metaphorically used engineering-related terms such as stress and strain, resilience, tension, pressure, balance, or support.

Metaphorical expressions are highly prevalent in lay conceptualisations of stress. It is reasonable to expect metaphors to be applied to think and talk about stress and coping as these are abstract, complex, socially constructed concepts (Helman, 2007; Pollock, 1988). Furthermore, experiencing stress involves both negative and positive emotions (Folkman, 2008), and when describing emotions and feelings, people use more metaphorical language than when describing behaviour (Fainsilber & Ortony, 1987). In describing stress experiences, people refer to such conceptual metaphors as STRESS IS A FORCE (PHYSICAL, ANTAGONISTIC, DESTRUCTIVE, CONSTRAINING FORCE), AN ENEMY, IMBALANCE, HEAT/FIRE, INTERNAL CHAOS and others (Brown, 1999; Helman, 2007; Mulhall, 1996).

Understanding what conceptual metaphors people use to think and talk about stress is important because first, it may facilitate improvements in public understanding of stress by creating common ground, and second, conceptual metaphors influence people's judgements and behaviours. Exposure to metaphors can activate alternative ways of thinking about abstract issues. For instance, people prompted through metaphor to think about crime as a virus suggested different ways of reducing crime than those who were exposed to metaphorical framing of crime as a beast (Thibodeau & Boroditsky, 2011). Similarly, framing cancer as an enemy or imbalance was shown to influence intention for specific (self-limiting or self-bolstering) behaviour in non-patient groups (Hauser & Schwarz, 2015), and describing cancer and depression in terms of a battle or journey influences how non-patients think about patients' experiences (Hauser & Schwarz, 2019; Hendricks, Demjén, Semino, & Boroditsky, 2018). If

metaphors influence thinking about and coping with illness, which is a stressful situation, we may expect that they have the potential to affect thinking about and coping with other stressors. This has been acknowledged in cognitive-behavioural therapy (e.g. Killick, Curry, & Myles, 2016).

1.2. LEGO® – a visual conceptual tool

We are interested in people's understanding of stress and how this understanding shapes their experiences and behaviour. Psychology tends to focus mostly on verbal communication as it seems more straightforward than other modalities. However, people's experiences, the natural world and the culture they live in are multi-dimensional and multi-modal (Reavey, 2011). In addition to verbal communication, people naturally gesture, act, make films, take photos, write, draw, paint, knit, sculpt, cook, decorate. They engage in a variety of creative behaviours and refer to various (sometimes completely unexpected and surprising) objects to represent their ideas. Visual aids allow people to externalise their thoughts, work on them, develop, review and refine them, and share them with others (Gauntlett, 2014).

As researchers, we can deepen our understanding of human experiences by considering their multidimensionality and using nonverbal modes of communication (Gauntlett & Holzwarth, 2006; Reavey, 2011). Traditional research methods can be enhanced with other, more creative, methods of data collection to "produce richer and more insightful data than interviews or the associated method(s) would do alone" (Kara, 2015, p. 8). One of the possible 'enhancers' is LEGO® as it provides an alternative mode of expression.

Conceptual metaphors are often expressed in language as conventional metaphorical expressions (collocations, idioms, sayings) such as *a clear head*, *racing thoughts*, *spending time* (Lakoff & Johnson, 1980). However to elicit more creative representations of stress, we may need less conventional modes of expression, whereby certain colours, shapes, sizes or positions in space are linked indirectly to stress. LEGO® bricks provide a tool for eliciting conceptual metaphors as they enable the user to physically represent their thoughts and feelings, the essence of metaphorical thinking.

Aside from the practical reason of wide accessibility to LEGO® sets, there are numerous benefits of using LEGO®. Not everyone feels comfortable with creative arts such as drawing or clay-modelling (Gauntlett, 2014). LEGO® pieces can be linked with each other in a myriad of combinations, both simple and complex structures, sometimes quite unexpected and very creative. Further, building with LEGO® does not require any special skills and almost

everyone can build something meaningful and satisfactory without previous practice. Playing with LEGO® is usually fun and gives free rein to imagination, plus the bricks can adopt a meaning of the user's choice (Ackermann, Gauntlett, & Weckstrom, 2009). As LEGO® evolves, sets increasingly include specific bricks depicting various objects, tools, and features, yet even these specific pieces can be used to represent different meanings. For example, a golden crown might symbolise power over other people or the happiness of the person wearing it.

LEGO® co-founders recognised that their bricks had potential as a tool for thinking and sharing ideas about 20 years ago, and developed LEGO® Serious Play® (LSP) as an alternative to traditional planning meetings in adult business organisations (Frick, Tardini, & Cantoni, 2013; Nolan, 2010). LSP is now an open-source product. Our workshops were inspired by the LSP core process which involves four steps:

1) "The facilitator poses a challenge;
2) Participants build their answers using LEGO® bricks;
3) Participants share their answers with other participants;
4) Participants reflect on what they have seen and heard" (Frick et al., 2013, p. 3).

This process can be applied in different activities, both group and individual tasks (e.g. (Peabody, 2015). Papers presenting the concepts of LSP and its application in contexts such as training and consulting are available (Frick et al., 2013; Hayes & Graham, 2020; James & Brookfield, 2013; Peabody, 2015) but research using LEGO® as a creative method of data collection is surprisingly scarce. One interesting exception are David Gauntlett's (2007) studies on identity. Building LEGO® models enabled his participants to use metaphors to represent their identities and their elements in a more tangible way and allowed the researcher to explore identities in a new, creative way (Gauntlett, 2008). We decided to follow this example, as our study aimed to study lay conceptualisation of another abstract issue i.e. stress.

2. LEGO® building for data collection – observations and reflections

2.1. Participants

Twenty-four (eight male and 16 female) members of the local community (people living in South-West England) took part in six workshops (3-6 people per workshop). Participants were recruited through purposive, snowball sampling, via social media and posters placed at the university campuses and in local cafes. Volunteers who contacted one of the authors (A.W.) by e-mail were informed that the study involved taking part in a workshop where they would

be asked to talk about stress, build LEGO models of stress and present them to the group. All participants provided informed consent and agreed to being audio-recorded, for their models to be photographed and to the quotes and photographs being used in the research outputs. The study was approved by the Bournemouth University Research Ethics Committee (ID 27426).

All participants were native speakers of English, aged 18 to 52 years . Fourteen were students, the remainder worked full-time (8), part-time (1), or were retired (1). Eleven participants had pre-university education (A-levels or equivalent), five had an undergraduate degree, and eight a postgraduate degree. The workshops lasted for 2-2.5 hours and participants were reimbursed with £20 cash.

2.2. The process

Workshops took place in university facilities i.e. a seminar room with a whiteboard and small square tables with chairs arranged in a classroom setting. For workshop purposes, the facilitator set up eight to 12 tables (depending on the number of participants) to create one big square or rectangular table. In the workshops with up to four participants, they were seated one at each side of the big table. In bigger groups (5-6 people), no more than two participants sat at the longer side of the big table with at least one metre apart. Each participant would have space of about 1.5-2 m^2 for themselves and had a similar set of about 220 LEGO bricks at their disposal from a LEGO Serious Play Starter Kit (LEGO set number 2000414). This set included a selection of standard LEGO bricks with several DUPLO bricks, as well as a selection of special pieces such as wheels, tyres, windows, trees, mini figure parts, tubes, globes and small base plates. In the middle of the big table, there was also a large pile of about 320 bricks in total. It comprised two sets of LEGO People Pack (set no 60134), each of which included pieces to build 14 LEGO figurines, and some other special elements e.g. a dog, a wheelchair, a bicycle, food pieces etc. Participants were told that they could use any piece from their own pile, choose whatever they needed from the large pile, and borrow or exchange the bricks with other participants.

Each workshop was run by the same facilitator (A.W.) and was made up of six parts. It began with a short introduction and a LEGO® warm-up, followed by a group task of generating a joint mind map. The main task of creating models of stress reflected the core process of LSP methodology i.e. posing a question, constructing, sharing, and reflecting (Frick et al., 2013) through three parts: model building, presentation, and general discussion. Below we describe each part in detail:

Introduction.

The workshop began with a short presentation to remind participants of the basic rules (anonymity, confidentiality, the right to withdraw, audio-recording and photographs of the models) and overview of the workshop. The facilitator explained that (1) LEGO® was chosen as a visual aid for discussing the concept of stress because it promotes creativity and fun, (2) everything including shapes, sizes, and colours can be used to convey meaning, and (3) participants decide what the bricks in their model mean.

Warm-up.

Participants were given five minutes to build whatever they liked. Then they were asked to describe their model briefly to the group, one person at a time. These models were often quite literal and concrete, and included vehicles, towers or other constructions, animals, and people (LEGO® figurines). This aimed to familiarise all participants with LEGO® building skills, regardless of any prior level of experience with LEGO® or none, as well as make people more at ease when speaking to the group. Although most people were familiar with LEGO® (only one participant had never played with it) all welcomed a short practice, after which they declared themselves to be comfortable with using LEGO® bricks. Part 2 of the warm-up introduced the idea of using LEGO® to represent more abstract ideas. To this end, participants were given another five minutes to re-build their models to depict how they usually feel on a Friday evening. Again, they were asked to present their models to the group in turn. This activity allowed participants to create more metaphorical models and get used to talking about abstract concepts. The whole warm-up lasted 15-20 minutes depending on the group size.

Joint mind-map.

This activity aimed to prompt different ideas and concepts related to stress. Participants were instructed to come to the whiteboard together, think about stress and create a joint mind map with the main node of 'stress'. They wrote their own ideas and linked them to the main node as well as to others' ideas without talking to each other. After 10-15 minutes (when participants deemed the mind map complete), the facilitator summed up these ideas, asking for explanations and further elaboration when needed. Participants discussed their own and others' ideas and were allowed to anything they considered missing to the map. The summary and discussion lasted 10-20 minutes, but one group talked about their mind map for almost one hour.

Building LEGO® models.

Participants were asked to build a model representing their idea of stress. They were advised they could refer to concepts included in the mind map or build something completely different. The facilitator also reminded participants that whatever they built would be perfectly fine, and that their models were good because they were their own models based on their ideas. This stage was planned for 20 minutes, but most participants needed less time. Once a participant decided their model was ready, the facilitator photographed it for further analysis.

Models' presentation.

This stage took 30 to 60 minutes depending on the number of participants, the complexity of the models, and participants' engagement in discussion of others' models. Participants took turns to show their models, describe them and explain the meaning of the bricks they used and the whole composition. To help participants, three questions were displayed on a PowerPoint slide: (1) What does your model show? (2) How does it represent your idea of stress? (3) How (if at all) is stress related to health? The facilitator asked additional questions, if necessary, to elicit more details. Other participants could also ask questions and comment on the presented model to share their interpretation of it.

General discussion.

Finally, participants were asked if they wanted to add anything to what had already been said. The facilitator provided some more specific questions around how stress is related to health, if stress is negative or positive, and what, if anything, can be done about stress. Participants also shared their thoughts on model building and presenting and their general feelings about the workshop. This took 10-30 minutes depending on what had been covered during the previous activities. Once the participants decided there was nothing else they would like to add or comment on, they were thanked for participation, received the debrief sheet, and reimbursement.

2.3. Analysis

LEGO® models were discussed on-the-spot by the facilitator and other participants, who asked questions about different parts of each model when they felt something was interesting or could be interpreted non-literally. This contributed to a richer and collaboratively developed verbal description of the models. Audio-recordings were transcribed verbatim. There is no specific method recommended for analysing LEGO models. As we (the authors of the paper) were looking for recurrent patterns in the descriptions, we applied a combination of Thematic

Analysis (Braun & Clarke, 2006) and Systematic Metaphor Analysis (Pragglejaz, 2007; Schmitt, 2005). The latter involves identifying all metaphorical expressions relevant to a target domain (in this case: stress) and coding them, e.g. as we did, according to the source domain. Then, as in Thematic Analysis, we categorised these 'codes' into subthemes and themes.

While we used the photos of the model to better understand the verbal descriptions in the analytical process, we did not analyse them as a separate source of data. Sometimes participants used the bricks in a purposeful way i.e. deliberately choosing certain pieces to represent their ideas. However, other bricks were originally included with no intention of communicating any particular meaning. In some cases, during the presentation and group discussion, participants agreed that the model, its part, or even a single brick could convey an idea consistent with their understanding of stress. Other LEGO® pieces were used purely as building blocks, ascribing specific meanings to them or their characteristics would be unjustified. We did not want to speculate or conjecture anything that could not have been confirmed by the participants or at least extrapolated from their verbal description of the model.

2.4. LEGO models and conceptual metaphors

The six workshops resulted in 27 unique LEGO® models; most participants created a single model, but some built more than one. Models differed in terms of complexity. They focused on stressors , experiences of stress , effects of stress, or a combination of any of these. Participants applied a variety of conceptual metaphors, the details of which will be published elsewhere (currently in preparation).

LEGO® is an interesting tool for generating data because it allows for building various constructions and scenes. It combines the potential of other visual aids such as photos and video clips because with LEGO® one can build a more static structure or use it in a more dynamic way, moving bricks around to 'replay' processes, changes and actions. Many participants created static models similar to snapshot photography, representing stressors, coping strategies, or a state of stress as it is experienced by a person. However, a few developed models with movable parts or used LEGO® figurines as 'living' protagonists to explain ideas such as how stress can build up or how it may feel. Even the more static structures represented changes and actions e.g. through changing colours or figurines arranged to suggest movement. Participants often applied the concepts of motion and immobility to conceptualise stress and coping. Many models involved restriction or entrapment, e.g. the figurines were chained to something, wrapped in a cord, put in a small space, and surrounded by various objects. Two participants

in different workshops depicted a stressed person as being trapped under a pile of LEGO® blocks (see Figures 1 and 2). These are examples of the conceptual metaphor STRESS IS A TRAP. Interestingly, dealing with stressful tasks was pictured as moving, especially up, toward a place representing a goal or a reward. Going up, reaching a higher position in the LEGO® model was associated with coping well enough to be able to complete a task and/or achieve one's goal.

Figure 1. Visualisation of STRESS IS A TRAP metaphor: *"Well… my little person is, uhm, trapped under a tonne of rubble […] They're just trying to kind of fight their way out of the rubble."* [W2, F, 32]

Figure 2. Visualisation of STRESS IS A TRAP metaphor: *"Uhm… and I'm in the middle of it all with, with my head off [laugh] laid amongst all this chaotic mess that could come tumbling down around me (laugh)".* [W4, F, 49]

2.5. Use of colours and positive symbols

In general, the models depicted stress as unpleasant and detrimental. This was clear in the visual and verbal metaphors and compounded by the use of certain colours and bricks with positive connotations. Participants tended to include in the model things they liked (blocks in favourite colours, animals, plants), or pieces they considered pretty. When presenting, participants were expected to share their idea of stress. Positive symbols were not always mentioned, probably because they were not seen as part of the stress concept. When asked, participants explained that they simply wanted to have something beautiful or positive in their model, which could be seen as a semi-conscious attempt at counterbalancing the negativity of stress. Furthermore, in some cases, positive symbols were meaningful parts of the model representing things and states opposite to stress. For example, flower-like bricks visualised relaxing time and recovery, and pink pieces (a participant's favourite colour) represented the positive feelings when stress is gone, transparent blue ball described by the participant as 'lovely blue colour' and 'very, very pretty' [W1, F, 49] [2] depicted hope, etc.

Colours have particular cultural connotations and can be used to convey meanings (Allan, 2009; Elliot & Maier, 2014). Several participants deliberately decided what colours to use and how. No/low stress was represented with blue and green, which participants related to the natural environment (water, greenery), which is associated with calmness and feeling relaxed. Moderate stress was visualised with yellow and orange blocks, and greater stress with red and similar colours. For example, one model involved a tall structure with mainly blue, grey and green bricks at the bottom, changing into yellow and cream in the middle, orange, pink, and finally red at the top to represent stress building up and becoming unmanageable, which was linked with emotional discomfort. In another model, red denoted physical symptoms of stress and illness. In English, red is often associated with danger and negative emotions, however, colours have often both positive and negative connotations (Allan, 2009). While most participants chose red bricks to reflect unpleasantness, one person used it as a symbol of positivity. Negativity of stress was also depicted with greyness and blackness, colours associated with dullness, bleakness, and lack of happiness, in line with the conceptual metaphor BAD IS DARK (Forceville & Renckens, 2013).

[2] All the quotes are labelled using the following format: [workshop, gender, age]

Colours were also chosen to make the model more harmonious or chaotic. For example, one participant used a mix of jarring colours to represent STRESS IS CHAOS metaphor and the feeling of being overwhelmed:

> *[…] when you get through of like, like during stress… everything is too much. It is sort of like a million different colours and tans, and all this coming at you at once*. [W4, F, 20]

2.6. Participants' reactions

Participants responded very positively to the workshops, particularly using LEGO®. The LEGO® building part took approximately 30 minutes, but LEGO® bricks were on the tables all the time. Several participants played with the bricks throughout the workshop, sometimes quite idly, sometimes building something meaningful.

In general, participants were very engaged and had no problems thinking of what to build and the process of building itself. Some were quite surprised by that as they had expected difficulties. However, in LSP it is often said "*If you start building, it will come*" (Gauntlett, 2014, p. 191), and actually one of our participants confirmed that:

> *Coming to it today, I thought 'I don't know what I'll be making representing stress and… I had no idea. But then, getting the pieces, it just sort of built itself.* [W4, M, 43]

Several participants mentioned that the joint mind map activity made the LEGO® building easier as it gave them some ideas to focus on. One person who had no previous experience with LEGO® admitted it was difficult to build models. Nevertheless, after the warm-up practice, she created a meaningful structure representing her idea of stress. This confirms that playing with LEGO® for research purposes does not require high-level skills or experience.

It is widely acknowledged that creative and art-based activities can have therapeutic effects (Stuckey & Nobel, 2010). Playing with LEGO® is usually considered fun and can be relaxing which is especially relevant to the workshops. Many participants appreciated the opportunity to use LEGO® to talk about stress, "*get it off their chest*" [W2, M, 18] and see that "*I'm not the only one that gets stressed...*" [W1, F, 35]. Some participants even admitted that the session acted as a stress-reliever:

I have to say I'd been a bit stressed before I came cos I worried I wouldn't be able to play with LEGO. But, actually, I'm feeling really stress-free now. It's quite cool [laugh]. [W5, F, 48]

Interestingly, destroying the models at the end of the workshop had a cathartic effect, as participants in workshop 5 discussed:

[F, 48]: *I feel bad breaking them (models).*

Others: Awww… (laugh)

[M, 43]: *Sort of a release, too (laugh)*

[F, 48]: *Yeah.*

[F, 21]: *Goodbye stress.*

Some participants were a bit uneasy about public speaking and presenting their models to the group. However, they only admitted that in the final comments and usually explained that it was easier than they expected. Creating a friendly atmosphere where participants would feel safe enough to share their ideas and experience was of paramount importance to us. In line with ethical guidelines, participants were told they would not have to do anything that could make them feel uncomfortable. Everyone talked about their models with no qualms or reservations. One person felt it was slightly difficult to talk about personal issues such as stress and coping but this was not noticeable during their presentation and they only shared that with other participants in the final discussion.

Furthermore, participants felt ownership of their models – many took photos to share what they had created with friends and family. This often happens in projects where creative methods are used (Buckley, 2015). Participants were also genuinely interested in how their models would be used further in the project.

3. Conclusion

LEGO® proved to be a useful visual aid in research on the lay conceptualisation of stress. It allowed for generating additional data and obtaining insight into conceptual metaphors of stress which might not be so easily gained through traditional interview techniques. Positive participant responses make it even more valuable. Building LEGO® models could be a useful tool to further depth of meaning and understanding across areas of research that involve exploration of concepts and personal experiences.

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