Mindfulness and Mindlessness

"....so we should open ourselves to the impossible and embrace a psychology of possibility. The psychology of possibility first requires that we begin with the assumption that we do not know what we can do or become. Rather than starting from the status quo, it argues for a starting point of what we would like to be. From that beginning, we can ask how we might reach that goal or make progress toward it. It's a subtle change in thinking, although not difficult to make once we realize how stuck we are in culture, language, and modes of thought that limit our potential...When faced with disease or infirmity, we may find a way to adjust to what is. In the psychology of possibility, we search for the answer to how to improve, not merely to adjust."

Ellen Langer, Counter Clockwise: Mindful Health and the Power of Possibility

Ellen Langer is one of the most vivacious women I have ever met. Upon arriving to meet her in Harvard's William James Hall, I was actually extremely ill, but mindlessly ignoring the symptoms. The painful and yet *irrelevant* swelling in my right leg and the weak and feverish state that led me to *sleep* through a very stimulating lecture by Daniel Dennett, was in fact a serious blood infection that would later result in my hospitalization. Little did I know that my conversation with Ellen Langer would be the thing that completely transformed my hospital experience from a potentially *stressful*, *painful nuisance* into a very *interesting and rewarding experience*.

To understand the transformative power of Ellen Langer's perspective, and to better understand her creative action, I believe it is useful to experience firsthand her version of mindfulness -- the act of noticing new things -- which is actually very easy to practice, if for no other reason than it energizes and engages us and opens us to new possibilities. Further, it is useful to consider the way Langer applies her version of mindfulness to understanding of social psychology and developmental psychology phenomena, and science generally. Her thought, as laid out in her four books on mindfulness and in her many empirical papers, represents a veritable stream of understanding that liberates one from a constrained, passive, rigid view of reality, possibility, and human potential.

Noticing new things

An idea, to be suggestive, must come to the individual with the force of revelation.

William James

Ellen and I both teach social psychology. A critical reading of social psychology reveals much to us about the conditions under which people impose rigid, stereotyped views upon themselves and other people, and the conditions under which behavior is a rigid

function of contextual control (Myers, 1999). What is often so startling to students who first discover social psychology research is just how rigid, stereotypical, and limited our worldviews and our behaviors often are. Nevertheless, every year, one or two students in my first year social psychology class approach with great excitement and tell me how inspired they are to discover all these human limitations so carefully catalogued by social psychologists. Awareness of the conditions shaping rigid, stereotyped thinking and action, they tell me, has actually liberated them. Some report feeling more open to experience, less rigid in their evaluation of self, other, and world. They report clearer perception, greater awareness of the subtle nuances of experience. They are noticing new things. They are energized and inspired. Some go a step further, extrapolating and anticipating the open field of possibilities: they report a transition from mindless acceptance of all that they know and feel and do, to mindful awareness of all that they can know and all that they can feel and can do. Their prior learning no longer dominates the way they interpret the present moment. The fullness of the present moment itself and the possibility space that opens by virtue of the fusion of the present moment with the ineffable future moment infuses their field of action with a new radiance. All is new. The well-springs of creativity are open. Reality and potentiality comes flooding in.

Mindless reading

Some students, I believe, remember the raw significance of their inspired insight as they progress to higher levels of ability and skill -- they remember to notice new things -- they remember mindfulness. It's a subtle change in thinking, says Langer, although not difficult to make once we realize how stuck we are in culture, language, and modes of thought that limit our potential. Social psychology education provides a wonderful opportunity to shed light upon mindfulness and mindlessness. Experimental social psychology is full of examples of the price people can pay for mindless *learning*, or mindless assimilation of their 'culture'. Research by Chanowitz and Langer (1981), for example, demonstrates the negative consequences of mindless reading of medical information. They provided students with information booklets about a disorder called "chromosythosis", a condition that could lead to diminished hearing. Some of the students were told that 80% of the population had the disorder and they were asked to imagine how they might help themselves if they were diagnosed as having "chromosythosis". Another group was told that only 10% of the population had it, making the disease seem less relevant to them, and they were simply asked to read through the information booklets. All students were then tested to see if they had the disorder and all were told that, yes, they did indeed have it.

In the next phase of the experiment, participants were tested using a series of objective hearing tests. Those participants who were led to believe that the disorder was less relevant to them and who simply read through the information booklets, performed significantly worse on the hearing tests than the group who were led to believe that the disorder was potentially relevant to them and who also thought through the consequences of having the disorder. Langer describes this as one example of the negative effects of *premature cognitive commitments*. Specifically, when information is mindlessly received and accepted without critical question or creative 'what if' deliberation, we run the risk of

implicitly committing to a singular, rigid understanding of the information. When later we are faced with a situation where this 'prior learning' is brought to bear on our action in context, we may find ourselves functionally constrained by the rigid understanding we have implicitly established. Mindless reading and mindless learning result in mindless reactivity.

Contextual constraint and contextual sensitivity

The human mind is capable of perceiving a great number of things, and is so in proportion as its body is capable of receiving a great number of impressions

Baruch Spinoza

Broadly speaking, there is an important distinction to be made between a mindful and mindless response in context. On one hand, we can talk about mindful awareness and sensitivity to context and the corresponding ability to flexibly respond to the variable and direct contingencies of our environment, while also mindfully using language and imagery to transform the stimulus functions of the environment and thus open our possibility space and facilitate our goal pursuit. At the basis of developing human intelligence is this capacity to receive, transform¹, and respond to a great number of things, a great number of impressions. On the other hand, we talk about the mindless imposition of prior learning in a new context such that we lose awareness of the direct contingencies and, in the ongoing cycle of perception and action, we forestall our ability to respond flexibly to a variable environment. Further, this kind of mindless imposition of prior learning will automatically (i.e., quickly and without our awareness) transform the contingencies (or stimulus functions) of the environment and thus limit our capacity to mindfully transform our possibility space during goal pursuit.

Some of what we like to call "prior learning" may simply reflect how little we have in fact learnt from past experience and how constrained we are in our ability to flexibly respond in new contexts. Nevertheless, researchers who study learning, memory, and language are quick to tell us how important it is to be able to *learn* and *remember* and how vital it is to possess the tools of language and mental imagery, which allows us to transform sensory input and further shape our learning, memory, and action in context (Hayes, Barnes-Holmes, & Roche, 2001; Kosslyn, Thompson, & Ganis, 2006; Pinker, 2008). At the same time, when we consider the simple mechanics and pragmatics of the wakeful brain -- the constant cycling of perception and action in context (Fuster, 2003) -most cognitive neuroscientists and psychologists would agree that the mindless reentry of memories into the ongoing cycle of perception and action is maladaptive in the context of the requirement for flexible goal pursuit in a highly variable environment. In other words, the mindless reentry of memories -- be they procedural memories (acquired skill), semantic memories (acquired knowledge), or episodic (autobiographical memories) -- is maladaptive because mindlessness, by Ellen Langer's definition, diminishes awareness of the current context and all that is new in the current context.

¹ By virtue of the design of the human brain, all sensory input is transformed in one way or another in the cycle of perception and action (Coward, 2005; Fuster, 2003).

Mindlessness implies action on "automatic pilot", and although some cognitive neuroscientists argue that automaticity of certain functions enhances our overall efficiency, with key brain areas devoted to, for example, transforming *new* sensorimotor experiences into automatic and acquired sensorimotor patterns (M. J. Hogan, 2004), none of this implies that automaticity of select functions cannot be *combined* with mindful awareness of our current context, or that mindful awareness of our current context necessarily *reduces* the efficiency or efficacy of our action. Lifespan development is marked by growth in both executive functions (e.g., ability to sustain, switch, and divide attention and maintain goal focus) and growth in the efficiency with which new skills are transformed from slow and variable to fast and consistent in practice (Bialystok & Craik, 2006). Even if we consider sensorimotor functioning in very basic terms -- in terms of whole body movement -- what is clear is that the maintenance of environmental awareness is necessary for flexible, adaptive action in context. For example, if when walking, ongoing cognitive activity divides our attention and inhibits environmental awareness, our sensorimotor actions are likely to falter (Verrel, Lövdén, Schellenbach, Schaefer, & Lindenberger, 2009). Mindfulness corrects.

At the same time, mindfulness -- the act of noticing new things -- extends its influence far beyond the simple sensorimotor act. We recognize the challenge of dividing our attention and being mindful to two distinct sources of cortical input, for example, sensory input that helps to regulate our movements when walking up the stairs to work and input from long-term memory designed, for example, to help us calculate the best sequence of actions to start the working day when later seated in front of our computer. We recognize the challenge of selecting goals, optimizing successful pursuit of our goals, and compensating for losses associated with the inability to focus on other non-selected goals. We usually focus on one thing at a time but we also divide our attention and plan out sequences of future adaptive moves. Langer likens the brain to a large corporation, with a Chief Executive Officer who is charged with monitoring the overall functioning of the corporation and its transactions with the outside world. This CEO does not, cannot, and should not actively monitor everything. The job of maintaining the heating system, for example, is delegated to the custodial staff and need not consume the attention of the CEO until it requires a major investment for replacement. The effective person – like the effective CEO – allocates attention wisely, choosing where and when to be mindful. As our goal changes, mindfulness opens us to new possibilities. Mindfulness is transformed by virtue of the context wherein it is practiced. Ultimately, mindfulness functions in the context of any goal -- mindfully reading a textbook in the hustle and bustle of the college library at exam time, happily noticing new things while engaged in a dialogue with the author; mindfully talking with a friend, a colleague, or someone you meet in passing, opening oneself to the verbal and non-verbal possibilities; mindfully cooking the dinner; mindfully painting, playing a musical instrument, playing football, dancing, etc. The point is that every context affords us the opportunity to notice new things. Every experience affords us a new possibility space that is constantly open to redefinition. Mindfulness opens us to possibilities. Mindlessness, says Langer, binds us to prior learning, language, and culture in a way that may leave us feeling constrained or, worse, helpless.

Mindful Health and the power of possibility

Langer considers how mindfulness operates when people learn that they have cancer. Although science is learning that cancer can be a chronic condition or even fully treatable, most of us, says Langer, mindlessly assume that cancer is a "killer". Rather than being mindfully aware of our symptoms and the conditions associated with the presence and absence of symptoms at any given moment in time, rather than being mindfully aware of the variable nature of our interactions with medical professionals, friends, and family, or changes in the way we work and play, and so on, one possible outcome is that the trauma associated with the diagnosis of cancer leads us to identify fully with the label "cancer patient". As soon as we identify with the label, all the preconceived ideas we ascribe to the label come to control our behavior.

But this is only one possibility and not everyone responds in the same way when diagnosed with cancer. Langer refers to research by Sarit Golub (2004) conducted in Harvard. Golub found that while some people diagnosed with cancer *add* cancer to their identity, others let the diagnosis *take over* their identity, with the latter group faring less well on measures of recovery and psychological well-being.

Langer suggests that mindfulness makes us more optimistic because we are open and attentive to possibilities, and that this in turn facilitates recovery. Research does suggest a relationship between mindfulness and optimism (Weinstein, Brown, & Richard, 2009), and between optimism and recovery from coronary artery bypass surgery (Scheier & Carver, 1992). Converse to the view that optimists have a rosy view of their future that invariably leads them to ignore their present circumstances, Langer believes that mindful optimists are likely to pay greater attention to their recovery than do pessimists, and in so doing they aid the recovery process and help anticipate complications.

Nevertheless, mindless optimism and mindless pessimism may lead people to invest more heavily in positive or negative *systems of belief* than in reality itself and the possibilities that reality presents (M.J. Hogan, 2009). Optimal well-being, according to some, hinges on this capacity to open oneself to the subtleties and complexities of reality and thus inhibit cognitive commitments that pit belief against experience (Labouvie-Vief & Márquez González, 2004). One belief that Langer asks us to be mindful of in this context is the belief that science somehow trumps experience. If, for example, we blindly assume that medical science is simply better than our own experience in informing our judgment and action, we may be inclined to mindlessly hand over control of our health to the 'experts' and thus ignore the subtle variation in our experience (e.g., our experience of symptoms) and contextual variables that impinge upon our experience. Again, by accepting some label attached to us in consultation with a doctor (e.g., "chronic pain patient") we may come to assume more stability in our condition than there is; we may hand over control of our condition to others, and thus negate the possibility space that opens to us when we are mindfully aware of our condition.

Mindful awareness of our state can enhance our ability to control our state. For example, Delizonna, Williams, and Langer (2009) demonstrated that, when compared with a group who were asked to measure their heart rate upon first waking in the morning and just before going to bed, people who are asked to measure their heart rate regularly throughout the day, thus attending to its "variability", later demonstrate greater capacity to speed or slow their heart rate without instruction. More generally, those who scored higher on the Langer Mindfulness Scale exercised greater control over heart rate regulation.

Langer accepts that if you are ill you should consult a medical professional, but she warns against mindless acceptance of medical advice. She argues that diagnoses, prognoses, research methods, and statistics are all necessary for efficient, ethical, and meaningful medical care, but in light of the inherent uncertainty due to variability, medicine, like all domains of study, should be regarded not as a collection of answers but rather as a way of asking questions. How much exercise is a healthy exercise level? Observe the science and you will see that there are no simple answers that apply across all individuals. In this context, we need to attend to both the medical facts and our own bodily states, and we need to be aware that much like our bodily states vary over time, so too do the facts of science. For example, exercise may well be good for us in many ways, but women who exercise too much may be more at risk of developing ovarian cancer (Gertig, Hooper, & Graham, 2004).

The observation of science, much like the observation of our environment generally, exposes us to a great deal of variation. Variation in the set of facts and relations open to observation in the field of science may be enough to completely inhibit our adaptive movement, particularly if we are looking for hard and fast rules in relation to any aspect of our future adaptive action. On the other hand, if we embrace the fact that medical science, and science generally, deals largely in probabilities and not certainties, and that these probabilities allow us to anticipate to some extent the consequences of a unique path of action in a unique context, we open ourselves to the possibilities latent in the observed variation – and we do not fail to see the importance of our own action in this field of possibility.

Langer's definition of mindfulness is very interesting, because it aligns more with definitions of critical thinking than with definitions of mindfulness as a *meditative* acceptance of all that is. Langer's mindfulness is very pro-active, energized, engaged, optimistic, constructive, and uninhibited in the face of failure. Langer believes that the future is largely indeterminate, not uncontrollable. We don't know for sure whether or not we can control something unless we try, and if we fail this does not imply that we cannot control the thing we set out to control, only that we failed to control it at the time of trying – the situation remains indeterminate, but the possibility of control is still a possibility. Langer maintains a beautiful balance: she is skeptical and constructive at the same time, open to the possibility that she may be right or wrong, or right and wrong – only experience will tell and only mindful experience will transform.

Ageing and Development

"Aging means change, but change does not mean decay. While the term development can be applied to changes over the entire life cycle of a person, the term is commonly taken to refer only to the first two decades of life. The influence of this attitude is persistent. Young people are described as "developing", whereas persons changing in their later years are typically described as "aging". It is like day and night, where day might formally refer to the entire twenty-four-hour span but is informally used to refer to the brighter side of day. So, too, aging has come to refer to the darker side of development. In this case, however, the nominal distinction has great consequences. To make changes in later life one must fight against all sorts of consensually held preconceptions before they are "recognized" as growth. This struggle for legitimate recognition would be less strenuous if development were cast in other contexts. Right now, our stereotypes about the negative aspects of aging prevail"

Ellen Langer

We begin ageing from the very moment we are conceived, and at every stage in the ageing process, from conception to death, we share one thing in common with all other living systems: we adapt to our environment. In every living system we see ageing and adaptation as a precursor to death. In every living system we see life before death. Naturally, this life process, this process of ageing and adaptation, varies both across species and within species, both across individual member of a species and within individual members of the species. Variation is central to the creative potential inherent in the evolutionary process. This variation is greatest in the species we now call *Homo sapiens*, or "man the wise" (Boyd & Richerson, 2005; Mayr, 2002)

Awareness of human inter- and intra-individual variability expands our appreciation of the possibility space open to us during development. This newfound appreciation may well beg the questions: how wise is it for us to say that ageing is a period of decay or decline? The answer is pretty clear: it is a mindless stereotype. Place the mind into a mindful space, a space of possibilities, and the process of ageing and adaptation is not only interpreted in a new light, the very process of ageing and adaptation is itself transformed.

Negative stereotypes of ageing serve no useful purpose. Research suggests that adults who when younger mindlessly endorse statements such as, "As you get older, you are less useful", do not live as long as adults who have a more positive view of ageing (Levy, Slade, Kasl, & Kunkel, 2002). The Berlin Longitudinal Study also confirms that, after controlling for seventeen indicators of psychological functioning, including intellectual ability, personality, subjective well-being, and social ability, dissatisfaction with ageing is one of the principle factors predicting how long people live (Maier & Smith, 1999). Furthermore, negative stereotypes impact directly upon older adults' performance, with age differences in memory performance, for example, mediated by negative stereotypes about aging and memory (Chasteen, Bhattacharyya, Horhota, Tam, & Hasher, 2005). Notably, older adults cardiovascular stress response in a performance context is much reduced when they are primed with positive ageing stereotypes (insightful, sage, wise, accomplished, etc.) as opposed to negative ageing stereotypes (decrepit, dependent, senile,

confused, etc.) (Levy, Hausdorff, Hencke, & Wei, 2000). Mindfulness may help to overcome these negative effects of mindless negative stereotypes. For example, older adults who receive training in either transcendental meditation (predicted to enhance mindfulness after meditation practice) or mindfulness as Langer studies it (noticing novelty²) demonstrate marked enhancement in intellectual functioning as well as physical functioning (Alexander, Langer, Newman, Chandler, & Davies, 1989).

We can maintain a vicious cycle of helplessness or we can reinforce mindful mastery. For example, if we mindlessly label people as less able, we may rob them of their autonomy and they may come to perceive themselves as less able as a result of not being provided with opportunities to exercise control, which in turn may inhibit their desire for autonomy and control, thus inducing helplessness (Woodward & Wallston, 1987). Much of Langer's research and thinking aims to reverse this process and reinforcing autonomy and mindful mastery instead. For example, in one of the classic research studies in this area, Langer and Rodin demonstrated that giving elderly residents in a nursing home the autonomy to make decisions about a plant they were asked to care for increased their general sense of well-being (Langer & Rodin, 1976). The long term implications of this change were also observed years later. Those nursing home residents who were given more autonomy actually lived longer than those in a control condition whose conditions did not change. Similar studies have reported similar results (Schultz, 1976). But Langer despairs that most nursing homes still promote dependence and helplessness. A "dependence support script" defines many social interactions between older adults and social partners, such that dependent behaviors are reinforced through "over-helping" while independent behaviors are ignored (Baltes & Wahl, 1992).

Negative stereotypes are deeply embedded in the culture of our behavior in relation to older adults. These behaviors impact upon the behavior of older adults, reducing their control and their perceived efficacy, which in turn reduces their motivation to mindfully make decisions and mindfully work to master environmental contingencies. For example, in one survey of older adults in North America, 50% of respondents reported that their health care provider simply attributed ailments to age or told them that they were "too old" to engage in an activity (Palmore, 2002). Again, environmental changes can make all the difference. In a study of memory, Perlmuter and Eads gave one group of older adults a degree of control over the memory task (enhanced-control group), whereas another group were tested as normal (i.e., no-control group). The enhanced-control group performed significantly better than the no-control group on the memory task. Furthermore, in a second study, where all participants were again tested as normal, the enhanced-control group continued to perform better, suggesting some continued benefit of increasing their general sense of control (Perlmuter & Eads, 1998).

We can mindfully empower ourselves and we can mindfully empower those around us.

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² Langer notes that the pace of modern living and the culture of Western industrialized societies is not altogether conducive to sitting still and mediating for 20 minutes twice daily (as is recommended in TM). For this reason, she believes her method of cultivating mindfulness is more readily achieveable in daily practice, and in fact can be readily cultivated in the context of any normal daily activity.

Mindfulness itself – the act of noticing new things – is a controlled activity and for this reason it naturally enhances perceived as well as actual control. For example, Langer describes work with nursing home residents who were asked to focus their attention on the alternatives they rejected throughout the day (e.g., the choice of juice at breakfast), rather than succumbing to a mindless routine. This monitoring task served to remind them of the choices implicit even in the most mindless routine activities, and increased their perceived control accordingly. Even in the most "mundane" acts of daily living, there is a vast space of possibilities and if we simply open our minds and the minds of others to these possibilities, we truly may help ourselves to live a fuller, richer, healthier life.

Bruce Lee, in developing his system of martial arts, Jeet Kune Do, would emphasize that daily practice consisted of working on "whatever needs work". From the moment we become aware of the fact that we can work to adapt, to develop, we have the potential to do so in a mindful way, a way in which we are sensitive to our changing context and our changing experience. At all points throughout our development, mindfulness opens us to the power of possibility and helps us to see more than we normally would see if we were simply running on "automatic pilot". There is always something that "needs work", but with mindfulness there is always the possibility to transform work into creative work.

Intelligence, mindfulness, and creativity

One view of intelligence, says Langer, makes us believe that there is a reality out there, and the more intelligent the person, the greater his or her awareness of this reality. Great intelligence, in this view, implies an *optimal fit* between individual and environment. The optimal fit idea of intelligence derives from early notions (e.g., those of Galton, Spencer, and Binet) that emphasized in the context of evolutionary theory the importance of perceptual discrimination capacities for survival. Intelligence involves the ability to retain and organize perceptions that enhance our chances for survival. Evolutionary affordances and constraints are important in this context. For example, the perspective we automatically impose on our perceptions is not merely an arbitrary construct, but an adaptive response determined by natural selection.

The mindful person will probably notice how this view of intelligence might constrain action, and from the perspective of mindfulness research and theory comes an alternative view: an individual can define their relation to their environment in several ways, thus creating the reality that is out there. The notion of optimal fit is potentially dangerous, particularly if it results in a rigid search for the 'one' reality or the 'one' best solution to a problem in context.

Certain notions of intelligence may actually limit our intellectual range. Even the change in emphasis from notions of intelligence as a general factor, "g", that describes the correlation among many cognitive abilities, to notions of 'multiple intelligences', each of which is unique and valued by society, does little to enhance mindful flexibility and creative action. Working with these notions of intelligence, people may simply shift from mindless searching after their 'overall ability', to mindless searching after their

'special talents'. We continue to be pigeonholed in one way or another and ranked according to our level of 'adaptive fit'. Notions of ability and disability arise which ignore the fact that any disability may function as an ability if we are able to view it from a different perspective.

Some notions of intelligence may ultimately amount to little more than a constrained worldview, a mechanistic theory of *correspondence* and *fit* -- discover the reality out there, and discover the laws (or rules) that help you to adapt to this reality. The pragmatist may well smile: There is nothing wrong with laws and rules, just so long as they are mindfully selected and applied. For example, we can speak of science as a system of rules and consider it best when these rules *guide* rather than *govern* our action. We can speak again of contextual sensitivity and flexible responding. Unfortunately, in the context of real-time adaptive action much of our law-like, rule-governed behavior can quickly become intellectually, emotionally, and physically debilitating, because the laws or rules, once established, become automated and insensitive to changing contexts. The possibility space for intelligent action is narrowed. Creativity is stifled.

Mindfulness theory accepts that many automatic processes of perception may well result from a long history of natural selection and a unique and shared history of lifespan conditioning, but perception is also malleable and susceptible to individual control. Langer notes that we can view a situation from several perspectives; see information presented in the situation as novel; attend to the context in which we are perceiving the information; and create new categories through which this information may be understood. Intelligence tests tend to operationalize intelligence in very linear ways: there is one correct solution to the problem presented and the speed with which one arrives at this one correct solution is factored into the overall intelligence test score a person achieves. This testing environment may well disadvantage the creative child or the creative adult, those of us who dare to play with the process of learning and travel down many paths before arriving at their 'outcome'. A society that comes to value speed and efficiency in the context of such narrow virtuosity may well reinforce modes of operation that are the antithesis of mindfulness and creative action. As Ellen Langer suggests in her book, *The Power of Mindful Learning*:

From a mindful perspective, one's response to a particular situation is not an attempt to make the best choice from among available options but to create options. Rather than look for an external standard of optimal fit or the right answer, one discovers that, in the words of William James, "the standard perpetually grows up endogenously inside the web of experience"

(p. 113 - 114)

Mindfulness may well open the well-springs of creativity and when this happens our *reality* is nothing like it was before. *Intelligence* is nothing like it was before. *Ageing and adaptation* is nothing like it was before. All is new. We experience both a positive disintegration and a novel reintegration of all our parts, all our deep seated conceptual and abstracted system. The fullness of the present moment and the possibility space that opens by virtue of the fusion of present and future moments infuses our field of action

with a new radiance. Reality and potentiality comes flooding in. Our system is reborn and ready for creative action.

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