A mobile app designed to act as a contemplation device to support calm reflection, mind-wandering, and epiphanies

By Anders J. Aamodt
anders.aamodt@gmail.com

Do you have any applications on your phone that are not distracting, stressful, or agitating to look at? I don't. All of my apps are what is called in psychology "task-oriented activities", meaning they are designed to promote a state of mind which is externally focused, goal-oriented, and driven by a logic of productivity. Interfaces designed this way use a window metaphor, presenting a frame that the user looks through to view some type of content, which is the object of work. However, neuroscience has found that the default mode network, which is associated with sense of self, mindfulness, creative leaps, and other core attributes of sapience (bodhi), only emerges into synchrony during "taskless" activities of mind-wandering or inward focus. Using task-oriented interfaces all the time trains us to approach external objects with a mindless and productivity-oriented mindset. In this proposal, I present a design for a contemplative app which inverts the task-oriented paradigm, functioning more like stargazing than word-processing.

The Problem

Existing apps which claim to promote "mindfulness" or "relaxation" or which "train your brain" are usually constructed in a task-oriented way, and tend to follow one of a few basic activity patterns:

1) Workflow—The user is led through a series of steps which purport to solve a problem. For example, Unstuck is an app which helps with procrastination—it leads the user through a series of questions and small decisions which help them to reflect and become liberated to begin working again (there's that productivity mindset again!).
2) Recordings—The main activity of the app consists in some type of guided meditation or video. Apps like this are not much different from going to YouTube or a website containing guided meditations.
3) Visualization—The main activity of the app is some type of "spiritual" visualization. These apps are usually not very interactive, if at all.
4) Meditation Timer—These apps, while useful as timers, do not have anything in particular in their design which supports mindfulness during the interaction with the interface itself.

In contrast, art objects often function more like a mirror than a window[1]—we are invited to look at the object and see something of us on the outside. By interacting with the external object, we explore angles of looking inward, and we can enter into healing and contemplative states. If the art is very good, we may be drawn into these reflective modes almost immediately. Skillfully-designed art often draws out some specific realm or topic of the psyche, working with sensitive issues in a playful and healing way.

The Proposal

I would like to build an app designed as an aid and support to contemplation. As opposed to meditation, where the intent is usually for the mind to rest, during contemplation the mind alternates between resting and wandering, as it will. The challenge during contemplation is to master the paradox of "directed mind-wandering" that allows the default network to function—if your mind wanders too far, you lose the subtle thread and drop out of self-awareness—but if you are anxious about "staying on track" you prevent your mind from wandering in the first place, and contemplation does not occur. By providing an external object (kammatthana) which tracks the stream of thought unobtrusively, anxiety can be relieved, since a reminder of one's "location" within the contemplative landscape is available as needed. This leaves the mind free to wander untethered.

It is my opinion that there is an incredible poverty of language in the world today. Most people are told what words mean and are punished if they use them the "wrong" way—in school there are spelling tests and essay corrections, and in general we will be attacked, berated, and told we are stupid or even hateful if we use a word to mean something different than what someone else thinks it means. This enforces a consensus on the meanings of words, but it impoverishes individuals to develop their own thoughts and language about the richness of their own inner experience, and the way words work poetically for them.

This is why in my research I have focused on developing an app design which specifically supports contemplation using words as anchors. I like to use the metaphor of an endangered species breeding program—*meaning* is what is endangered here. So, we carefully collect meaningful words from the user, and then present those words in new and intriguing combinations. By bouncing the words the user finds most rich with meaning off each other, new insights are generated which lead to further enrichment of thought and language. Gradually, use of such a device like this could transform someone from a thinker who uses words as if they were owned by other people, to a poet who uses words pregnant with meaning and personal symbolism.

The Design

I have already designed such an app—you can see an image of the prototype I made, on the right. This is only a basic prototype so many features are missing. However, you can see the following interface elements in the picture:

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[1] This concept is from Bolter, Jay David, and Diane Gromala. "Transparency and Reflectivity: Digital Art and the Aesthetics of Interface Design." *Aesthetic computing* (2006): 369. Available at http://www.cse.chalmers.se/research/group/idc/ituniv/kurser/06/idproj/BolterGromala_transp-reflec.pdf

1. A New Word button (+), which the user can tap to type in new words and add them to the screen. The textbox where new word are typed will also be a search box to recall words previously added.
2. A Back button (<), to recall words in reverse order when they are tossed off the screen. Words will remain on the screen unless they are flicked away.
3. The words themselves, which float gently on the screen. All of the words on the screen will come from the user—you can see that I have entered a few words I was thinking about as examples for this prototype.
4. The lines between words—in the app itself (not this prototype), words will start out with no connections, and connections will gradually form over time and become visually stronger, the longer any two words spend on the screen together.
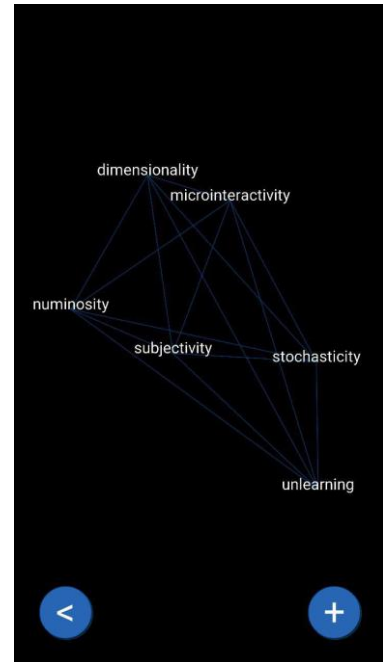
There are also a few key features which are missing:

1) The Insight button: This will be an orange button with a lightbulb on it, and tapping it will draw a word up "from the deep" (from the user's history) which is calculated to have the most interesting relationship with the words presently on the screen. This button is a little bit like drawing a card from a customized and self-aware tarot deck—you will find that tapping it sparks new ideas and juxtapositions which you hadn't considered before. (That's because the search algorithm which selects the word uses precisely this logic—find the word most strongly connected at a distance of several steps, which has a weak direct connection, to the words on the screen)[2].
2) Coloration: Words will collect and transmit color depending upon the background color of the screen, which can be tuned using a small colored dial at the center of the screen. Individual words can also be tuned to a specific color by drawing circles around the word. As words form connections by spending screentime together, their connections will retain a history of the colors of both words. Words on the screen at the same time will slowly adjust their color relative to each other and the background, creating a subtle but entirely optional game of "color management". Words with similar meanings (close in the network) will adjust toward more different colors, encouraging discernment; and words with distant meanings will adjust toward more similar colors, encouraging incongruence leading to "waking-up" moments as the user notices the cognitive dissonance between shared color and distinct meaning (leading them to consider that distinction and perhaps manually reassign the color of one of the two words, destabilizing the color system once again).
3) The History: Tapping and holding the Back button (<) will bring up a callout containing a history of words which can be scrolled through to review recent activity.

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[2] Ellen Langer, the psychologist, has defined mindfulness as "the drawing of novel distinctions".

4) Settings button: Three small dots in the top right corner will take the user to a Settings page, where they can change appearance, speed, and other settings, and where they can export their data for use elsewhere.

5) Music and Sound Effects: Gentle ambient music, which could be generated dynamically based upon the words and colors presently on the screen, will help to aid relaxation and give meaning to the specific colors (emotion tones). When words bounce off the wall or against each other, a gentle booping noise will be heard. Music and sound will be mutable in Settings.

6) Version 2.0+ features: I have also begun to design features for later versions of the app. Version 2.0 will focus on introducing non-intrusive tools to interface with external word collections, such as a "word of the day" or the ability to press and hold a word to see a dictionary definition. Version 3.0 will focus on subtle social features, such as "subconscious word-sharing" that allows some diffusion between yours' and your friends' word collections (this is an experiment in non-destructive social synchronization I call *ulteriorization*—the non-reductive harmonization of difference through shared experiences). Many other possible features have also been designed which were not included in this proposal.

So, the main activity of this app will be to sit and reflect upon the gently-shifting display of meaningful words, shifting colors, and growing connections between words. These things will happen slowly so as not to distract during contemplation. There will also be a hard limit to the number of words allowed on the screen at once—too many words becomes worse than useless for contemplation.

This app helps to make contemplation a "thing", without making it a task. It can be used for taking very brief notes, for reflecting on particular concepts, for exploring one's own thoughts and vocabulary, or even for studying a foreign language in a more meaningful way. However, the primary and stated function will be to support contemplative activity—additional features or a tutorial may need to be added to make the app's intended use clear to new users, since many people never know that they contemplate, and because there are virtually no apps like this.

Prior Work

Shockingly, I am aware of only one app which attempts to do anything similar to the one I have designed: *Blowing Blues[3],* by Xuan Li. This beautiful app was a major inspiration in my research, and this shows in my design. You can see a picture of his app at the right.

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[3] http://www.gamescenes.org/2013/07/interview-xuan-sean-lis-and-the-aestheticization-of-health-games.html

Xuan's app is designed for relaxation and the letting go of negative emotion: Negative emotion words come in from the sides of the screen and attempt to "invade" the center circle. To protect the circle, the user blows gently using a calibrated microphone. This amazing connection between the breath and the computer is immediately relaxing, and helps to train a link between gentle breathing and the release of negative emotions. Users can even enter in their own negative emotion words, and view a graph of the words they have blown away over time, allowing one to see which emotions were most problematic in the past.
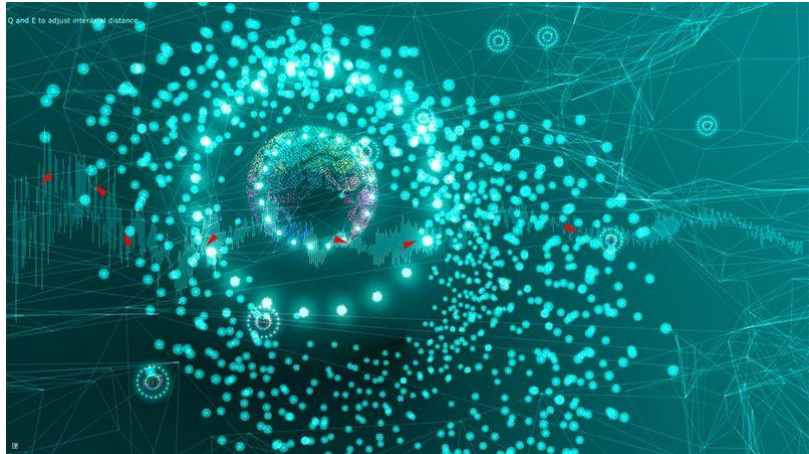
A few differences between Xuan's app and mine make it less suitable for use as a contemplative mobile app: First, the breath-detecting microphone aspect, while ingenious, would be hard to translate to the variety of phones in use (*Blowing Blues* is designed for desktop and I assume the microphone must be carefully calibrated). Second, the more direct game-based nature of *Blowing Blues* prevents simply sitting near the app and ignoring it—the game flashes red when negative emotions invade, reminding the user to engage and blow them away (in other words, it is a task-based activity). In contrast, my app has been designed for use in any setting on a small mobile phone screen.

Beyond this, I am aware of no app which purports to be some type of meditation, relaxation, contemplation, or reflective device, and which actually has any specific interface functions which support this claim. All apps I have seen that claim to be such a thing fall into one of the categories listed near the beginning of this proposal—that is, they don't actually do anything in the interaction between person and screen which supports relaxation, introspection, or mindfulness.

The genre of "brain fitness" apps, while a good development in the games industry, is very flawed from the perspective of promoting wisdom or awakeness (sapience, bodhi). This description of Lumosity from a "Top 10" list shows the problem well: "This popular app is split into sessions of three games tailored to your goals: memory, attention, problem solving, processing speed or flexibility of thinking. The games are played against the clock and change every time. Developers say just one session a day can improve mental skills and users can track progress and compare performance with others." [4] Wow! As you can see, this genre is heavily geared towards goal-oriented activity, a productivity mindset, and places an extreme value on speed and results. Users are even encouraged to compare their performance to others, a tactic of "gamification", which is a discourse this genre heavily relies upon to justify its marketing spiel and to design addictive game interfaces which foster dependency and compliance (i.e., repeat customers). These apps are interesting and

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[4] http://dailyburn.com/life/tech/train-your-brain-apps/

useful in certain ways, but this genre will need to mature before it can be said to help promote wisdom.

One other area of interest is the emerging videogame genre called "ambient games". However, again, I have not seen any examples of ambient games so far which impressed me with any unique or functional design. The ambient games I have seen are highly gamified (task-oriented) and focused on visuals—not introspection.

In other genres, many videogames can be wonderful stories or experiences which trigger and support periods of introspection, personal growth, and self-insight. One such example is *Shadow of the Colossus,* in which the hero murders beautiful giants in order to bring his beloved back to life. The game alternates between riding a horse through beautiful, desolate green landscapes, and climbing up and stabbing in the head these beautiful creatures. This contrast emphasizes the moral issues, especially since the hero becomes old and sick as the game progresses, absorbing dark energy from each dying titan. Another example of an astonishingly beautiful game is *Journey*, in which one plays alongside an anonymous second player from the internet, as you climb through sandy dunes and ancient ruins towards a spiritual mount. The only communication between the players is a small ping of joy, creating interesting dynamics of anonymous helping.

These two examples are gorgeous games, but they are very expensive to make, require a full-sized screen to experience properly, and are limited experiences that end when you finish the game (*Journey,* for example, is only about two hours long, though it replays very well). In the proposed app, I have made every effort to design something more like a *tool* than a game—something which can be used repeatedly without exhaustion or boredom, something with general purpose applications or many potential applications, and something which is relatively quick and cheap to make. (A kammatthana which collects kammatthanas inside it, and refines them.)

Conclusion

I have been researching sapience and initiation for ten years, and I have been designing this app for almost five. I am curious whether it is possible to spread mass enlightenment, real enlightenment, using screen interfaces, or whether these always work against us. I think it is possible, but that we simply have never seen any apps like this before, so we don't know what they are like or how they can revolutionize human thought and popularize mind-training.

User interface design has an *enormous* impact on the subjectivity and mental habits users acquire through using the interface. For example, I am sure you have noticed the way using Facebook or web browsing too much flattens your consciousness and creates depression or anxiety. Similarly, using "productivity software" all the time trains us to see everything as a task, with a clear external object, a product, and a lot of unpleasant work between us and the "payout". This paradigm of interface design needs to change, or at least be balanced by the availability of interfaces in which we can find rest and a moment of peaceful centering. Right now, no such interfaces exist.

I am of the opinion that this new genre of "introspective interfaces" is the *highest leverage point* in the world right now, in terms of affecting mass consciousness or prompting a true global awakening. This is why I have dedicated my life to studying the intricacies of this problem, and to making apps like this.

What I Need to Make This

I am a programmer, but I am not an excellent one. So far it has been hard to make much headway on the actual programming of the app itself, with my limited experience in developing for mobile phones. Any type of programming is extremely complicated and time-consuming, and doubly so when graphics or a new software platform are involved. Therefore, the main thing I need to complete a publishable app is at least one good programmer with mobile and graphics development experience who can either help program the app directly with me, or at least advise when I get stuck. I may be able to find a programming mentor at University of Washington—but it would be far faster and more efficient if someone besides me did the programming. I expect that with a second programmer, we could have a releasable version of the app within about a year.

Thank you for reading.

Anders J. Aamodt
M.A. in Educational Psychology & Educational Technology
Michigan State University

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