



Artful Design for Positive Design: A Case Study in VR

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Abstract: This article presents the philosophy of artful design as a viable lens for achieving the aims of subjective well-being set forth by the framework of positive design. Artful design is a design philosophy that presents both theoretical and pragmatic guidance to designers, offered via design principles intended to address human flourishing and humanistic values. First, we present several artful design principles, organizing these into a few categories. Next, we provide a case study of a virtual reality experience. We first comment on how its design was motivated by the aforementioned artful design principles. Then, we show how the virtual reality experience aligns with the goals of positive design. We finish by discussing how artful design is aligned with positive design. This includes discussion on how artful design's methods can inform positive design where the two are already aligned. We also discuss how artful design might add nuance to some of the components of positive design, followed by a brief discussion of the tentative term "folk design" to describe human flourishing through amateur practice of the design process itself.

Keywords: positive design; artful design; design philosophy; aesthetics

1. Introduction

Positive design is an emerging design philosophy on how to design for subjective well-being. Desmet and Pohlmeier have provided a promising framework for guiding design practice at a high level, but have noted that their design philosophy needs to develop methodology in order to be more pragmatically useful to design practitioners (2013). This article presents the philosophy of *artful design* as a viable lens for achieving some of the goals set forth by the framework of positive design.

Positive design is a design philosophy and framework for encouraging people to experience human flourishing through a lens of subjective well-being. Here, the term *design philosophy* indicates that the framework mutually infuses high-level concepts and values with pragmatic guidance for achieving those values. Positive design encourages the emphasis on and balance of its three components: design for pleasure, design for personal significance, and design for virtue (Pohlmeier & Desmet, 2017). These are defined in turn as experiencing



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positive affect (though considering the balance of positive and negative emotions is also important), working toward personal goals (here, what constitutes meaning is highly specific to the individual), and acting with morality (a more objective approach with roots in virtue ethics). The framework encourages attention to the balance between the three components, since prioritizing one may come at the expense of another (Desmet & Pohlmeier, 2013). It also emphasizes the importance of people being actively involved in realizing their own flourishing. While the philosophy provides a robust theoretical launching point for design processes, it also notes that much future work is necessary toward the development of methods to help designers in the process of designing, as well as the development of measures for empirical assessment of human flourishing outcomes.



Figure 1 Examples of the pragmatics, aesthetics, and philosophy presented in Artful Design.

Artful design is a design philosophy that focuses on how to shape technology with craft, ethics, and aesthetics (Wang, 2018). It originates in the field of audiovisual musical design, but is intended to be generally applicable to most design contexts. The corresponding photo-comic book *Artful Design: Technology in Search of the Sublime* presents the philosophy through a series of design principles, which are aphorisms intended to be consulted during the design process in moments of ambiguity. The book covers significant ground, ranging from discussion of pragmatics to aesthetics to the core of the philosophy behind how to design artfully (Figure 1). The philosophy of artful design is not about creating art. Instead, it is concerned with the mutual interplay and radical synthesis of function and form, of pragmatics and aesthetics; it suggests that technology should transcend the “mere” functional and be *artful*. The philosophy is in some ways a response to the need-finding, “empathy”-based approach to “design thinking” that is currently popular in the United States, centered on the Stanford University d.School (Balcaitis, 2019; Dam & Siang, 2019; Fogel, 2017). As such, artful design also foregrounds designing for the human values underlying surface-level practical needs and focusing on broad “invisible” needs, such as

the need for self-actualization and the need to appreciate beauty. The philosophy makes frequent reference to the concept of the sublime, a deep aesthetic experience resulting from an articulation of clarity, truth, and a deep understanding of humanity. Overall, the broad goal of the philosophy is to encourage design that implicitly understands and supports humanistic aspects of life. Even though *Artful Design* invokes many aspirational, abstract concepts, the advice its design principles give is often highly pragmatic and applicable to design processes, making it a potentially useful lens for designers of other practices to apply to their own process when contextually appropriate.

The rest of this article will attempt to show how the two design philosophies are aligned and how positive designers might make constructive use of the philosophy of artful design. First, we will present in more detail several themes put forth in *Artful Design*. Next, we will offer a case study of a musical virtual reality experience, first discussing how artful design was used to guide the design process, then commenting on how the resulting experience aligns with all of the aspects of positive design. We will finish with a discussion on how artful design might inform the work of positive designers, and how some of its concepts might add more nuance to the philosophy of positive design itself.

2. Principles from Artful Design

Here, we present several of the many themes from *Artful Design* (Wang, 2018), insofar as they are relevant to positive design and the case study presented below. Throughout the rest of this article, design principles from *Artful Design* are referenced by number (e.g. AD2.6). The text of each mentioned principle is presented in the Appendix for reference.

2.1 What is Design?

Artful design hesitates to provide an exact definition of what it means to design (AD1.1), since it maintains that design is what you do when there is no known, direct way of meeting some goal (AD1.8). Therefore, rather than specifying methods for design, artful design offers design principles that act as lenses to (re)direct thinking during a person's contextual design process. Nevertheless, it maintains that the process of designing is often creative and exploratory, that design should originate from a foundational understanding of what it means to be human, and that design should be performed with a sense of aesthetics that enables us to approach the sublime (AD1.2).

2.2 Ends-in-Themselves

Artful design makes extensive use of the concept of *means vs. ends*, or the duality and spectrum between means to an end, "that which serves an external purpose, use, or function," and ends in themselves, "something good in itself, whose value lies primarily in its intrinsic worth (AD1.5, p.34). The philosophy articulates that great design should approach the sublime by achieving a radical synthesis of these two modes (AD1.16).

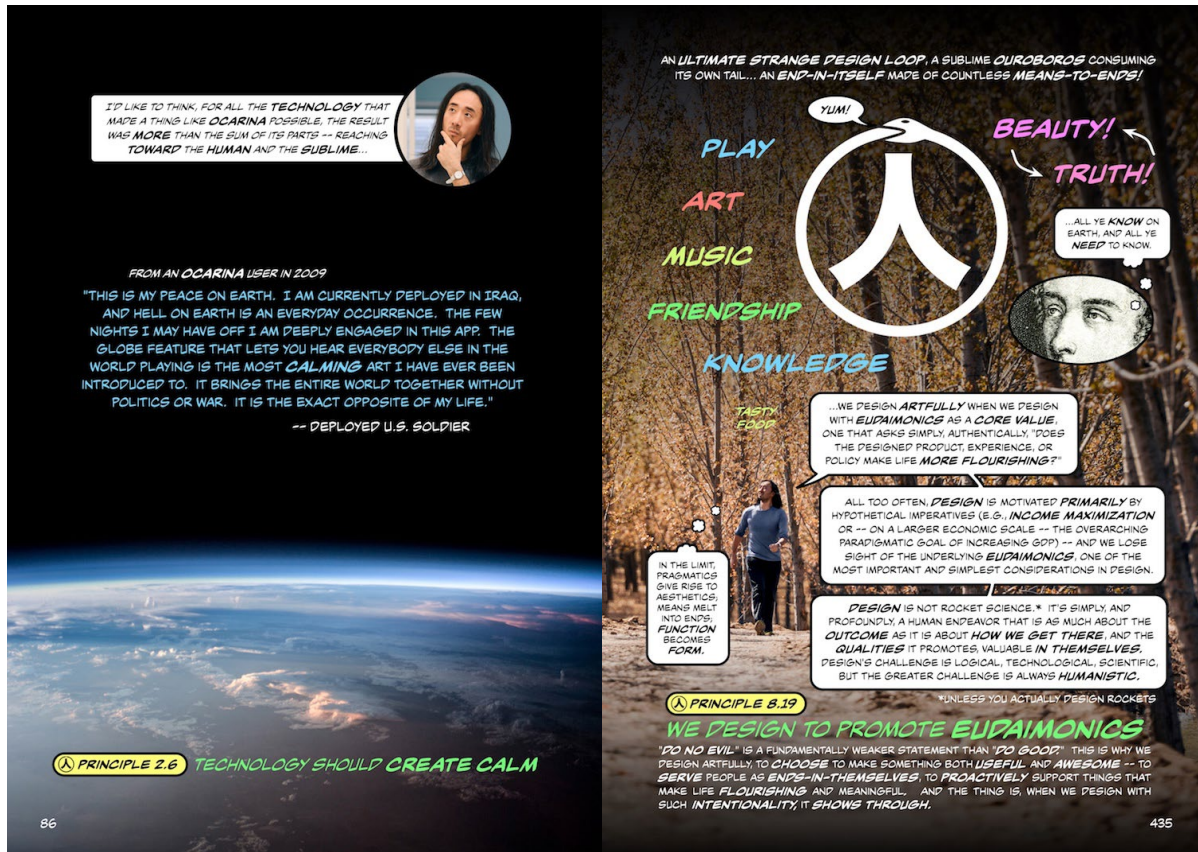


Figure 2 Left: Artful Design, Principle 2.6: Technology should create calm.
Right: Artful Design, Principle 8.19: We design to promote eudaimonics.

2.3 Needs and Values

Artful design resists the notion (popular in the U.S. Design Thinking movement) that design is fundamentally a process of finding and addressing human “needs” (Balcaitis, 2019; Dam & Siang, 2019; Fogel, 2017). It advocates that we must speak to needs, yet go beyond them, addressing deeper human values. Through its many case studies, it presents examples of such human values that can motivate design processes (AD1.15). Examples include calm (AD2.6, Figure 2), play and (amateur) musical expression (AD8.9), and “invisible” needs such as appreciation of aesthetics, self-actualization, and transcendence (AD8.10).

2.4 Aesthetic-driven Design

Artfully designing often means following a process of *aesthetic-driven design*: paying careful attention to authenticity, intentionality, how someone should feel, and how they should live with technology throughout all aspects of the design process (AD4.7, 5.2), at all levels: material, structural, interactive, emotional / psychological, social, and moral-ethical (AD1.3). It suggests that a nuanced, fundamental focus on aesthetics not only facilitates design decision-making in uncertainty, but also helps use ensure that our work is broadly humanistic in the way that it shapes technology (AD6.5, 8.6).

2.5 Play

Artful design asserts the importance of *play* as an “integral part of human life, having everything to do with purpose and a deep commitment to activities that have no extrinsic purpose” (Wang, 2018, p. 307), i.e. ends-in-themselves. It suggests we should design not only so that people can work, but also so that they can play, and in doing so, be free (AD6.1). Design for play must help people create a “separate space, isolated and protected from life” (AD6.9, p.330). One powerful way to access the mode of play is through encouraging users to be creative and artfully expressive (AD6.12).

2.6 Interaction and Participation

With its attention to design for musical performance and creativity, artful design pays special attention to the invisible dimension of interaction (AD7.6, 6.7). It reminds the designer that there is a “human in the loop” (Wang, 2018, p. 218), that participation and social processes are valuable, and that lowering people’s inhibitions and enabling even amateurs to participate in a process instantly can be a virtue (AD 2.7, 5.7).

2.7 Embodiment

“Bodies matter!” (Wang, 2018, p.210). Within its focus on interaction, artful design stresses the importance of embodiment: considering how the design relates to its user through their body (AD5.4) and how designs that pay careful attention to the body can feel more like a part of the user (AD5.17). Our sense of embodiment shapes how we process and move through life.

2.8 Why We Design

Finally, artful design offers perspectives not only on how we should design, but why we, the designers, engage in this act, how it shapes us, and how we use it to promote human flourishing. We design to celebrate all the beautiful and imperfect aspects of life (AD 8.22). We design to promote human flourishing (AD8.19, Figure 2). We design to play and to express our humanity (AD8.17, 8.21). And, perhaps most importantly, we design to reach for the sublime and to transcend (AD8.25).

3. Case Study: 12 Sentiments for VR

12 Sentiments for VR is an extended virtual reality (VR) experience in which users explore the emotional life cycle of a plant by making music. *12 Sentiments* was designed using a process of artful design, but the end result aligns well with many of the goals of positive design. First, we will explain the motivating design principles, which shaped how the experience was built. Then, we will draw connections between the result and the positive design framework.

3.1 Design Process

12 Sentiments for VR was designed by the author over a period of months, during which time the project's progress received bi-weekly critique from members of the CCRMA VR/AR Design Lab. The project's methods were seeded in aesthetic-driven design (explained further below), with active attention to the following high-level goals and guiding concepts.

ACTIVE AMATEUR PARTICIPATION

The overarching goal for *12 Sentiments* was to create a long narrative that moves through a series of environments (each originating from an emotional aesthetic) and enables its users to create music actively in each environment (called a "movement," as in a movement of an orchestral piece). This goal derived from a consideration of the value of encouraging amateurs to engage with music (AD1.15, 8.9), and specifically of how *active* user participation in musical experiences promotes human flourishing (AD7.6, 8.19, 8.21).

Because the experience is designed with amateurs in mind, each of the movements gives the user high-level expressive control over the music, but the controls that the user has to master are relatively simple, only involving move their hands and pushing one button (AD5.7, 2.7). Importantly, neither the music nor the narrative can unfold without the user taking actions within the virtual environment (AD6.7). For example, in the second movement, the player acts as a young vine plant, and places their hands (rendered as virtual leaves) into beams of sunlight. The action of capturing sunlight causes slow chord swells to play in the movement's music, which also grows in complexity as the user captures more sunlight. The movement cannot end until the user captures a certain amount of sunlight.

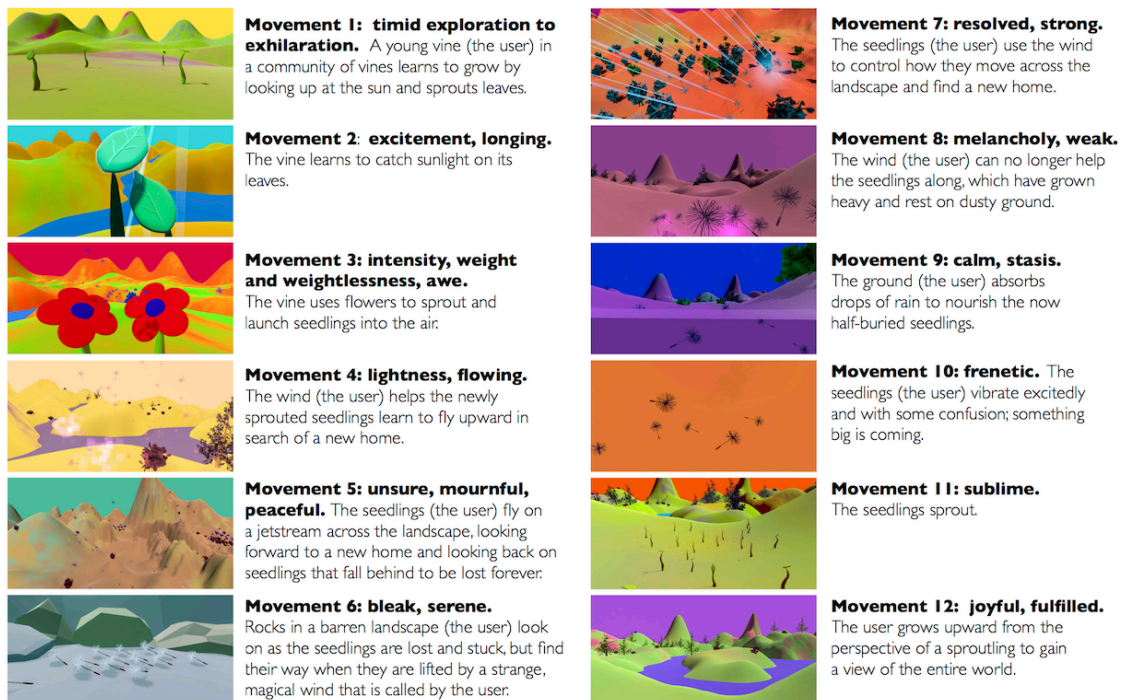


Figure 3 Descriptions of the driving emotional aesthetics and narrative of *12 Sentiments for VR*.

AESTHETIC-DRIVEN DESIGN PROCESS

Each of the twelve movements was designed from a particular emotional aesthetic, following a process of aesthetic-driven design (AD1.3: emotional / psychological level, 8.10: aesthetic needs). That is to say, at the very start of the design process, twelve aesthetics were chosen as guiding metaphors for the rest of the design decisions made in the crafting of each of the movements (AD4.7). The aesthetics chosen are presented in Figure 3. They were chosen to represent a broad spectrum of human emotional experiences, so that users could make music encompassing a variety of emotional feelings and spend more time in the movements that they feel aligned with (AD8.22). Once the list of aesthetics was finalized, we crafted a narrative that would fit this emotional path, deciding on depicting the life cycle of a plant. Then, for each individual movement, the color scheme, the music, the interaction design (AD5.2), virtual movement, and even vibrational haptic feedback were all designed with the movement's intended emotional aesthetic as a starting point and as a guiding metaphor for any ambiguous design decisions. This process resulted in a series of virtual environments that each strongly enforce a single emotional aesthetic (or so we hope), allowing the user to engage with it as they make music by existing and taking actions in the space.

DOING VS. BEING.

Another driving design goal for the movements was that they should enable users to engage in *being*, or a way of existing in the world where one takes the time and space for intentional and engaged stillness, reflection, and calm (AD2.6, 6.5). In virtual reality experience design, both *doing* (taking intentional and purposeful actions) and *being* can be considered essential for the creation of well-rounded experiences (Atherton & Wang, 2020). This emphasis was applied particularly in the interaction design of *12 Sentiments*. To name a few examples: the beams of sun in movement 2 fade in and out very slowly, meaning that a user who wants to absorb as much sunlight as possible will spend a lot of time standing still¹. In movement 5, when some seedlings and the user are caught in a gust of wind, the virtual movement interaction allows users to control their direction only slightly, leaving space for the user to reflect on their environment as they are moved through it. And, in movement 8, when the seedlings have become too heavy to be blown by the user's gusts of wind, we slow virtual time to a standstill while the seedlings are in the air, allowing the user to contemplate the situation before time resumes its normal pace and the seedlings tumble back to the earth².

EMBODIMENT

A powerful property of the medium of VR itself is *embodiment*, which in the context of VR means the ability for a user to feel and act as though a virtual avatar is their own body. *12 Sentiments* sees users embody a wide variety of virtual beings as they explore the course of a plant community's life cycle from one generation to the next: sprouts, vines, flowers, seedlings, the wind, and the earth. Each embodiment fundamentally affects not only how the user exists in the space, but also how the user makes music in the space (AD5.4, 5.17,

1 <https://ccrma.stanford.edu/~lja/doing-vs-being/leaf-hands/>

2 <https://ccrma.stanford.edu/~lja/doing-vs-being/slowing/>

6.7). For example, as a sprout, the user looks up to feel the (musical) sun on their face; as the wind, the user whirls their arms around to create (sonic) gusts that move virtual seedlings (and cause them to play a musical arpeggio); and as the earth, the user opens their arms wide to catch (musical) rain.

PLAY

One final lens that *12 Sentiments* engages heavily with is that of play. Since individual VR experiences involve isolating the user from the physical world, they can be conducive to play when users feel protected and safe (AD6.9). A number of aspects are intended to encourage play (AD2.1): bright colors, virtual physics that lets seedlings float and spin around in place, and high-pitched, tinkling music, to name a few. However, the most fundamental play experiences in *12 Sentiments* arise because the user is able to express themselves musically (AD6.12), promoting their flourishing (AD6.1).

3.2 Alignment to Positive Design

Although positive design was not used as a motivating framework during the design of *12 Sentiments*, the resulting experience aligns well with many of its core tenets.

PLEASURABLE AND MEANINGFUL EXPERIENCES

In positive design, the central design challenge is “to create opportunities for people to have pleasurable as well as meaningful experiences supported by design” (Pohlmeyer & Desmet, 2017). *12 Sentiments* is designed for amateurs to participate in musical experiences that enable meditative *being* in a variety of emotional-aesthetically-motivated environments. This process (should) allow for users to have pleasurable, meaningful experiences, especially in movements with a positive affect such as movement 4.

ACTIVE PARTICIPATION

Desmet and Pohlmeier have proposed that a person must play an active role in fostering their own flourishing (2013); they later wrote that “design for well-being is design that primarily focuses on activities and experiences” so that people can be active “creators of their own ‘good’ life” (Pohlmeier & Desmet, 2017). The movements of *12 Sentiments* allow users to continually affect the creation of the music and the status of the world with decisive actions. In addition, the narrative of the work does not progress without active involvement from the user. Finally, design for *being* promotes active, intentional reflection—this is what promotes the user to a state of being instead of passively letting the virtual world wash over them.

DESIGN FOR PLEASURE

The first of the three components of the positive design framework is design for pleasure, or enabling users to experience positive affect (Pohlmeier & Desmet, 2017). Due to the importance of affect balance (Fredrickson & Losada, 2005), however, it may also be important to take a “holistic approach by accepting that negative experiences are part of

life and should not be abandoned per se” (Pohlmeyer & Desmet, 2017). The more positive movements of 12 Sentiments (such as movement 4, “lightness, flowing”) can certainly act as a resource for users looking to experience positive affect. But, 12 Sentiments does not focus solely on emotional aesthetics with positive affects. The wandering path between movements from “bleak” through “resolved,” “melancholy,” “calm,” “frenetic,” and “sublime” to end at “joyful, fulfilled” makes the experience more heightened and humanistically meaningful than if the user were to only experience movements involving various shades of positive affect.

There can be a positive feedback loop when pleasure is derived from creative activities. While experiencing positive emotions can have a direct impact on a person’s subjective well-being, it can also have indirect effects on enhancing “creativity, open-mindedness, flexibility, and resilience” (Pohlmeyer & Desmet, 2017, citing Fredrickson, 2001; Isen, Daubman & Nowicki, 1987). *12 Sentiments* allows users to experience pleasure derived from participating in a creative activity: making music. The pleasure from being creative may in turn increase users’ willingness to openly participate in the activity, resulting in a cycle of increased pleasure and engagement.

DESIGN FOR PERSONAL SIGNIFICANCE

The second of the three components of the positive design framework is design for personal significance. This component is most commonly discussed in terms of setting and achieving personal goals (Pohlmeyer & Desmet, 2017). While personal goals are useful to discuss and somewhat easy to observe, they are by no means the only method by which people can strive “towards actualising our personal potentials” via “seek[ing] out novelty and challenge, explor[ing] and learn[ing], [and] exercis[ing] and develop[ing] our capacities.” We can find other approaches that reinforce some or all of these behaviors while still being activity-driven and intrinsically motivated through personally meaningful values. Specifically, active participation in music-making in *12 Sentiments* allows users to experience novelty, to explore, and to develop their capacity for thinking about and making music. Additionally, individual, ephemeral music-making is one of the most widespread and impactful forms of music-making (see the concepts of *holicipation* (Killick, 2006) and *folk art* (Gold, 2007)). Thus, music-making may also resonate with possibly-held personal values such as creativity, self-expression, the processing of emotions, and enjoying life, among many others. Meanwhile, the embodiment that users of *12 Sentiments* experience in a variety of virtual beings and circumstances allows them to explore new environments. It also allows them to grow through thinking about the world from new perspectives and on different time scales. All this to say: while users are unlikely to set and meet personal goals while experiencing *12 Sentiments*, many will still likely have meaningful experiences. Some may even grow in personally significant ways.

DESIGN FOR VIRTUE

The final component of the positive design framework is design for virtue, or how designs enable users to be moral people and contributing members of society (Pohlmeyer & Desmet,

2017). Pohlmeier and Desmet note that while a person's character cannot be designed, they are "always situated in a physical and social context, which in turn can be designed" (2017). Designing virtual reality experiences allows the designer to temporarily control much of the user's context, which might make such experiences ideal for designing for virtue; see for example Rosenberg et al. (2013). Pohlmeier and Desmet cite Peterson and Seligman's list of six core virtues and their lower-level character strengths (2004) as a potential source for this component. We will consider character strengths from that source in our discussion below:

Curiosity (wisdom). In *12 Sentiments*, users are able to explore new worlds (virtual environments) and explore what it means to embody new virtual beings.

Creativity (wisdom). In *12 Sentiments*, users actively participate in constructing and shaping the events of the world and the music itself, creating a personal song and narrative.

Perspective (wisdom). *12 Sentiments* offers users the ability to see a world from the perspective of many kinds of beings (e.g. plants, wind, earth). In terms of time and community, it offers the perspective of seeing a world through the eyes of a plant's lifespan; it also offers the perspective of life as a community that continues on beyond the life of a single plant. The beings that users are encouraged to empathize with and "become" are virtual and don't behave quite like they would in the real world, but the new perspectives may transfer somewhat into users' daily lives.

Vitality: zest, enthusiasm, vigor, energy (courage). In informal observations, users of *12 Sentiments* are often filled with a sense of energy and excitement after their experience. We propose that this is related to engaging with some of the other virtues: curiosity, creativity, perspective, and playfulness. (And indeed, Peterson and Seligman remark that vitality is not necessarily a distinctive trait (2004, p. 211).)

Humor, playfulness (transcendence). As discussed above, *12 Sentiments* offers many situations that encourage users to be playful, especially in the more positive and active movements 3, 4, 7, and 10.

Appreciation of beauty and excellence (transcendence). Several of the movements of *12 Sentiments* present massively large landscapes whose scale can only be understood through a virtual reality headset; the sensation of presence in such a world can combine with the fusion of visuals and music to create a sense of awe and wonder, and at times of the sublime. Movement 11 was designed specifically to attempt to convey a sense of the sublime through a sudden change in colors and music and the meaningfulness of the narrative of sprouting. Beyond this, all of the movements provide a different emotional lens that can allow users to appreciate the beauty of the journey of life in an embodied, subtle, personal way.

Spirituality (transcendence). The approach *12 Sentiments* takes to designing for *being* makes space for users to engage in intentional contemplative reflection and stillness, a state that is similar in many ways to the meditative practices of spirituality.

4. Artful Design for Positive Design

Above, we have discussed a subset of the principles of artful design, shown how they impacted the design of a VR experience, and shown how that experience aligned with the goals of the positive design framework. Now, we will provide some abbreviated comments on how artful design might directly inform designers looking to practice positive design. First, we will point out how the two design philosophies already align. Then, we will offer a few ways in which artful design might add nuance to the positive design framework.

Though the connection may seem obvious, both philosophies argue for the design process to be fundamentally based on human flourishing. *Artful Design* 8.19 argues that human flourishing should be central to all processes of artful design: “we design *artfully* when we design with eudaimonics as a core value, one that asks simply, authentically, ‘does the designed product, experience, or policy make life more flourishing?’” (Wang, 2018, p.435).

Both philosophies agree on a top-down approach to design that keeps guiding humanistic values in mind throughout the design process. On structuring the design process, Pohlmeier and Desmet write that the “higher goal of pleasurable and/or meaningful experiences [guides] the design process from the start” rather than it starting from low-level technical requirements (2017). While artful design does at times encourage the contextual value of bottom-up design (e.g. when exploring a new medium as in Principle 2.2: “Design inside-out” (Wang, 2018)), its focuses on aesthetics and invisible human needs can provide the top-down guiding forces that positive designers rely on during the design process.

Both philosophies agree on the value of direct, active user participation. Artful design’s principles on interaction design, inhibition, and the social dimension can help positive designers navigate ambiguity when planning for users to be active creators of their own human flourishing.

Artful design’s focus on aesthetic-driven design and articulation of means-to-ends and ends-in-themselves can inform the positive design dimensions of design for pleasure and design for virtue. Especially when the driving aesthetics are interactive, (positively) emotional, and social in nature, aesthetic-driven design can be used as a guiding force when designing for pleasure. Moral-ethical aesthetics, in turn, can inform design for virtue. Meanwhile, artful design’s extended treatment of the balance and interplay between means-to-ends and ends-in-themselves can guide designers grappling with how to balance high-level design goals with the pragmatic reality of designing an artifact that must, at the end of the design process, function.

Artful design can also connect with the broader positive design community. Let us consider two theoretical perspectives articulated in the Design for Subjective Wellbeing track of the previous Design Research Society Conference (Cain et al., 2018). The perspective of soma-wearable design suggests that Somaesthetic practice can inform fashion and wearable design to address somatic wellbeing (Jung & Ståhl, 2018). While this perspective already has a strong theoretical underpinning, artful design’s principles regarding embodiment may be useful during the practice of the design process itself. Similarly, the Play Blueprint

is a framework that identifies many of the core components of play in order to help design meaningful play experiences (Legaard, 2018). Here too, artful design's principles on supporting and encouraging play, especially through creative self-expression, can be informative to designers in the midst of the design process.

Now, we turn to a few areas in which the careful consideration of artful design's philosophy might be used to extend approaches to the practice and theory of positive design.

On methodology: Desmet and Pohlmeier identified that the "development of appropriate hands-on methods that equip designers... [in] strategic planning, task clarification, problem framing, and conceptual design" would be necessary, moving forward (2013). Artful design takes a somewhat opposite approach in its firm assertion that "there is no specific playbook for design," that "design is intentionality exceeding methodology" (Wang, 2018, p.39). While we would not suggest that the development of methodology is fruitless, we might suggest an understanding that appropriate methodology is always highly contextual, and that in some situations it is reasonable to proceed in an exploratory fashion, guided by higher-level design goals and principles but not by specific hands-on procedures. Nevertheless, the two philosophies agree that "intentionality and process" are where the most crucial design practice interventions lie (Desmet & Pohlmeier, 2013).

On design for personal significance: the positive design framework heavily emphasizes design for personal goals, which allow users to strive for growth and self-actualization (Pohlmeier & Desmet, 2017). As mentioned above, it is possible for people to grow without the scaffolding of setting and meeting personal goals. Artful design presents a broader notion of how to help people grow: by addressing "invisible" needs such as esteem, cognitive, aesthetic, self-actualization, and transcendence needs (Wang, 2018, p.415). This broader framework might guide positive designers in situations where personal goals are not relevant or possible, such as in the context of amateur creativity and self-expression.

Amateur creativity and self-expression itself is treated thoroughly as a humanistic value by artful design (Wang, 2018, pp.89-101). Especially when designers are concerned with building experiences and activities rather than possessions (Pohlmeier & Desmet, 2017), this practice might become the focus of design processes both when it is held as a personally meaningful value by the intended users, and also as a virtue in its own right.

We have identified possible limitations to the application of artful design to positive design practice. Specifically regarding evaluation: Desmet and Pohlmeier identify this as a particularly challenging problem due to the fickle nature of user self-reporting on subjective well-being (2013). Quantitative evaluation is an issue that artful design does not address by any means. Instead, it argues that designed work ought to be evaluated qualitatively and critically. Also, some of the more pragmatic advice in *Artful Design* is specialized to the medium of interactive audiovisual software or for the creation of musical instruments. Nevertheless, its principles on philosophy and aesthetics are clearly applicable to broader contexts, as evidenced above.

4.1 Future Direction: “Folk Design” (Flourishing via Amateur Design Practice)

Looking toward the future, the 2018 Design Research Society Editorial on Design for Subjective Wellbeing writes that academic focus is shifting to include experiences “where it is the act of designing which can also contribute to a meaningful experience and improved subjective wellbeing” (Cain et al., 2018). Artful design also has something to say on the subject: Principle 8.17, “We design as an act of play”, and Principle 8.21: “Aesthetics as self-emancipation!” come to mind. Nevertheless, in our own ongoing studies of this phenomenon (which are unfortunately outside the scope of this article), we are still searching for a more rigorous formalization.

So far, we have tentatively formalized the term “folk design” to mean “design practiced by amateurs in the context of and for the benefit of their own local social context.” The term is a parallel of Rich Gold’s term *folk art*, describing the practice of people who “make art for themselves and for their friends; [who] engage in art making not because it will last forever, or because it will please a million people, but because it is fun, enjoyable, and satisfying; because it is a way of interacting with and strengthening the bonds between friends and family” (Gold, 2007). Then, *folk design* would describe the practice of people who do *design* for all the same reasons. The formalization is not ideal, however, due to the severely overloaded nature of the meaning of the term “folk” in contemporary discourse. We are actively seeking perspectives on better ways to discuss this phenomenon and any existing academic scholarship already devoted to it.

5. Conclusion

This article proposes that the design philosophy of artful design is well-aligned to the intentions of design practitioners of positive design. Through the presentation of a case study, a virtual reality music-making experience, we have considered how following a design process informed by the design principles of artful design resulted in an active experience that aligned with all components of the positive design framework. Specifically, we advocate that artful design’s top-down focus on humanistic values and aesthetic-driven design can help reinforce positive designers’ focuses on design for pleasure and design for virtue, and that artful design can also inform related approaches to design for subjective well-being involving the body and play. We posit that artful design’s assertion that there cannot be one pre-ordained process for design suggests that positive designers might benefit from working without a rigid methodology in some exploratory contexts. And, we suggest that artful design’s focus on invisible human needs might allow for a broadening of the approach to design for personal significance beyond notions of personal goals.

Moving forward, we look forward to increased consideration of (amateur) creativity and self-expression for subjective well-being, both through processes like music-making as well as through encouraging amateur creators to flourish through practicing design itself. More work should be done toward formalizing the latter process (here termed “folk design”), including an understanding and approach to supporting and evaluating both amateur creativity and

social support.

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Appendix

Here follows the text of each design principle from *Artful Design* referenced in the text above. Where prudent, an additional quotation is provided to add clarity. The page number is provided for the quotation only where it differs from the page number of the principle.

Table 1 Principles from *Artful Design* referenced in this article.

#	Theme	Text	P.
1.1	What is Design?	A working definition of design. Design is a shaping of our world, aimed at addressing an intended purpose, carried out with aesthetics and humanity, within a medium. Corollary: Anything worth designing is worth designing beautifully. “Design is an act of alignment. We design to bring the world into <i>pragmatic</i> alignment with what we consider to be <i>useful</i> and into <i>aesthetic</i> alignment with our notion of what’s <i>good</i> and <i>beautiful</i> , or ‘the way things ought to be.’ Within this creative endeavor are real, rich, expressive opportunities to speak to our human dimension.”	30
1.2	What is Design?	Problem-solving is a <i>problem</i> in search of a <i>solution</i> . Creative design is <i>technology</i> in search of a <i>problem</i> . Artful design is <i>technology</i> in search of <i>the sublime</i> !	31
1.3	Aesthetic-driven Design	Aesthetics of Artful Design: material, structural, interactive, emotional / psychological, social, moral-ethical.	32
1.5	Ends-in-Themselves	Design is means vs. ends!	34
1.8	What is Design?	Design is intentionality exceeding methodology. “Design begins when we have an intended outcome without knowing how to achieve it, or if it’s even possible as envisioned. This is why there is no specific playbook for design.”	39
1.15	Needs and Values	Design not only from needs—but from the values behind them. “While needs indeed give rise to design, the most powerful designs are also grounded in values, deeply-held beliefs, and an understanding of human beings.”	48
1.16	Ends-in-Themselves	Design is the radical synthesis of means-to-ends and ends-in-themselves into a third type of thing – both useful and beautiful.	49
2.1	Play	Design for play and delight.	73
2.6	Needs and Values	Technology should create calm.	86
2.7	Interaction and Participation	Design to lower inhibition. “Design is being cognizant of how we as humans tend to think and using that awareness to encourage certain behaviors that, hopefully, are beneficial for us!”	99

#	Theme	Text	P.
4.7	Aesthetic-driven Design	Aesthetics is not a passive thing – but an active agent of design! “Aesthetics is not something you add to a nearly finished product, but an <i>active</i> force and <i>intentionality</i> that shape design from the start. It takes the form of creative constraints and articulations of preference that push a design forward in a sea of petrifying possibilities.”	196
5.2	Aesthetic-driven Design	There is an aesthetic to interaction.	208
5.4	Embodiment	Bodies matter!	210
5.7	Interaction and Participation	Instant music, subtlety later.	228
5.17	Embodiment	Embody! “We humans are embodied creatures; we operate more efficiently, satisfyingly when we ‘feel as one’ with the interface we are using!”	238
6.1	Play	Play is what we do when we are free; play is what we do to be free.	309
6.5	Aesthetic-driven Design	[The aesthetics of games:] Reflection. Games as mirror of our humanness.	313
6.7	Interaction and Participation	All games require interaction and active participation. “Like a musical instrument, a game does not move forward without your actions and decisions!”	317
6.9	Play	Play is free, voluntary, uncertain, unproductive by choice; it occurs in a separate space, isolated and protected from the rest of life.	330
6.12	Play	A new category: Tekhné (art and expression as play).	331
7.6	Interaction and Participation	Value participation (and design for it).	361
8.6	Aesthetic-driven Design	There has to be an aesthetic dimension that underlies our shaping of technology. “Aesthetics [...] provides a human-oriented context and impetus that underlie our advanced logic and reason.”	406

#	Theme	Text	P.
8.9	Needs and Values	<p>Technology is about what we can do; morality is about what we <i>ought</i> to do.</p> <ul style="list-style-type: none"> • “Humans are fundamentally playful creatures. The ostensibly mundane can be delightful!” (p. 413) • “Musical expression does a person good. Connect everyday people with musical expression.” (p. 413) “There was a time when the word <i>amateur</i> connoted something wholly good! ... Among other things, amateur musicianship is about personal enrichment.” (p. 91) • “Expression doesn’t have to come at the expense of gamefulness! There is a unique joy to music-making; bring it back to the masses with technology!” (p. 414) 	411
8.10	Needs and Values	<p>Design for invisible needs.</p> <ul style="list-style-type: none"> • “Esteem (confidence, achievement, respect for and by others)” • “Cognitive (intellectual stimulation and exploration)” • “Aesthetic (need for harmony, order, and beauty)” • “Self-actualization (need to grow and fulfill one’s full potential)” • “Transcendence (to become <i>more</i> than who we are)” 	415
8.17	Why We Design	<p>We design as an act of play.</p> <p>“Design may arise out of a mixture of needs and values, but as a <i>creative endeavor</i> it is a bottom-up, inside-out process, closely resembling a prolonged act of play – an isolated, protected space and time where aesthetic impulses, creative curiosities, and a lot of bad ideas can be given freedom to roam, tried in earnest, and followed to their logical or illogical conclusions.”</p>	432
8.19	Why We Design	<p>We design to promote eudaimonics.</p> <p>“We design artfully [...] to serve people as ends-in-themselves, to proactively support things that make life flourishing and meaningful.”</p>	435
8.21	Why We Design	<p>Aesthetics as self-emancipation!</p> <p>“Ultimately, we strive to design useful things that are intrinsically beautiful – that bring the world into alignment with our idea of good, the authentic, and the just – as an end in itself. Design should express our humanity, acknowledging that we value play, find beauty in authenticity, seek to connect with one another, and desire to be free.”</p>	439
8.22	Why We Design	<p>Design is born of life, incorporates it, and is inseparable from it.</p> <p>“Design is all around us, with all the joy and sorrow, dirt, grime, beauty, and imperfections of life.”</p>	440

#	Theme	Text	P.
8.25	Why We Design	Transcend... “Design cannot forsake the practical needs of humanity, but it – no less than art – can transcend them, seeking beauty in the authenticity of things, reaching for something more than we are, while speaking to precisely what we are. Sublime design is design that understands us.” (p. 453)	451