

Harry's Boppers- Description and Overview

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When I am listening to music I can sometimes imagine a kind of 3-d colored video going on in my head that I can shape, or let occur, such that it relates directly to the music. It's as if I were creating a video track synchronized with the music. To some extent I am consciously trying to complement the music. For example, a strong drum beat may trigger specific objects, like colored cubes, popping into the scene somewhere.

My imagination is a mix of conscious control and getting out of the way to see what comes in on its own in response to the music.

I will write a separate essay giving some of the visual patterns I think of, like spirals, paths that objects would follow, smoke, fog, transparency, colors, shapes etc. I will also discuss some of the awareness I have of the influence of different things, like the words in those songs that have them, or specific instruments, such as a violin played in old time Appalachian fiddle style (think John Hartford).

I assume many others, perhaps all have this ability.

I am telling you this because I now think that it is the primary source of my long-held vision I call "Harry's Boppers". I am somewhat obsessed with this vision. The thread of causality here is that I have this ability to create imagined experiences associated with music and I would like to have a way of actually creating a video, or VR experience, that would express it, or capture it, as much as possible.

From that desire I came up with the idea of creating a mass-market application that would allow a user to create such a video for any selected piece of pre-recorded music.

The rest of this essay, and some other available essays available in this essay via links, present my vision as best I am able. I think the most effective way to communicate it would be for me to create the simplest possible version of such an application and I am working on that now. I will also write an essay outlining my current work and goals.

The awareness that my reason for this vision is that I want such an application to use as soon as possible is new to me. The vision has been fascinating, and entertaining me, for over 30 years.

However, in trying to explain it to others I can now see that I was trying to justify the importance of creating it by describing what I think its existence would mean to others. I thought about how it would be used by others, how important it would be to the future of music and entertainment, how profitable it could be to those who helped it emerge and become popular.

Though I still think all those thoughts are somewhat prescient, I now see them as attempts to justify my obsession. They are no longer relevant to that. My obsession is because I know I would get a lot of joy out of being able to play with such an application.

My primary interest is described in the original "Harry's Boppers" concept as documented in my 1993 short story ([click here](#)). The focus of the story is a computer application that an individual would use to create a video track to accompany a pre-recorded piece of music. The video would be composed of an animated flow of whatever the creator can imagine appearing on a screen. The changes occurring on the screen would be synchronized with a specific piece of recorded music. I

think of this video track as being an additional instrument that complements the audio so as to create an enhanced experience.

Prior to modern technology like movies with sound, and more recently digital technology, the closest thing to this experience would be a ballet performance with an orchestra. The concepts I am trying to communicate here were not possible until recent times. I recognize it may take many years for these openings to lead to an advanced art form like current music or graphic arts. I believe this new art form is emerging.

Such replayable recorded experiences (sound and vision) like those I envision already exist. The ones I'm most aware of are in animated children's movies like [Robots \(click here for a short video example\)](#).

The best of such animation-sound recordings cost large amounts of money to create. I want a creation process accessible to millions of home users.

"Harry's Boppers" would not create things that don't already exist. Such things are being created now. My contribution is the conception that we could create an application that would be as available as those currently popular on home computers, like Minecraft or Microsoft Excel.

The original "Harry's Boppers" concept was that a computer application would serve as a construction set allowing a user to spend as much time as they wanted to construct an animated video to complement a pre-recorded piece of music.

There are several important aspects of my vision of "Harry's Bopper" in the above paragraph that I have found need to be stated more explicitly.

Here is a list of those areas:

- 1) The application would create the video “offline”. It would not be used by an artist performing/creating in front of a live audience.
- 2) The application would be as accessible to home users as a program like Minecraft or Microsoft Excel.
- 3) The application I have in mind initially would not use any AI-like technology to choose what would be included in the video. Those choices would be made by the artist using the application.

Each of these is explained in more detail below.

[1] The first is that this is not an application that is used to create a visual experience “on the fly” while the music is playing. It is not a device that an artist uses to create a visual experience in real time while the music is playing. Such a real time creation process is another very interesting area with a great future, but it is not the focus here.

“Harry Boppers” would be used as a construction set to build a visual experience in segments to synchronize with the pre-recorded music. The artist working with this application would, in my vision, often spend hours, or even months, building the video. The process would be a little like a composer writing the music for an orchestra. They would spend as long as needed on any part.

[2] The second aspect is that my vision of this application would not require special hardware and could be done on a typical home computer. My initial goal was, and still is, for me to create an application that would allow a user to get some idea of where I think this application could go. I want a “proof of concept” construction set application. This would be very far from a mass-market application.

Not only would the initial “fully developed” “Harry’s Boppers” application I envision run on a home computer, the software would be priced to be accessible as other instruments like guitars, violins and

drums. The low cost and wide accessibility of my application is a critical part of the vision because I want this construction set to be available to, and used by, millions of people in their homes.

Professionals could use it to make videos for which they were paid, just as session musicians in Nashville are paid for their part in creating a recording. Because this part of the concept has, in my experience, most often been misunderstood, the section below explains it in a different way.

I compare Harry's Boppers to a piano. How many people play the piano well enough to enjoy playing it? How many play well enough to entertain friends and family? How many play well enough to sometimes get paid to play? How many make a living at it (teachers, performers, composers)? How many are world class and famous?. I see Harry's Boppers as having a similar market. Most will just do it for fun. I would. And then all those other levels would exist. The best users would be like the top artists on a particular instrument, like a saxophone, or guitar, or violin, or voice. Famous, successful, rare.

The above covers some of the major stumbling blocks I have had communicating my vision of "Harry's Boppers".

Here are a few other issues that often seem to interfere with getting my vision across.

Wouldn't the interface to the home user version of "Harry's Boppers" be too technical and complex to be used by anyone without the kind of skills and experience of an advanced software developer?

The interface design would be one of the biggest challenges. I have recently been working with the Unity game development system. My vision is that the initial Boppers application would be somewhat similar to that. However, the goal would be to allow

beginners to make fairly interesting videos, synchronized with whatever piece of pre-recorded music they have chosen, with a minimum of training and prior knowledge.

I see the piano this way. A friend spent 15 hours or so teaching the basics of music on a piano when I was in college. I learned about key signatures, scales, major and minor keys, and the basics of written music so that I could, very slowly, play the notes shown in sheet music.

Learning the basics of how to use “Harry’s Boppers” would be a similar process. My vision is that beginners would learn enough “Harry’s Boppers” to make simple videos for a song in a few hours, and after that could grow their skills for a lifetime, as it is with the piano.

“Simple videos” might consist of cubes moving along 3-D paths and changing shapes, orientation, and colors – all synchronized to a piece of music.

After learning how to make simple videos the progression into using more advanced creation tools (other shapes, dancing robots, smoke, moving the camera within 3-D space etc.) would just be a matter of time, practice, and passion – as with the piano.

What it would take to create a minimum level of “Harry’s Boppers”?

I am, or was, a kind of mid-level programmer. I would like to think I could create a kind of demo version of what I call “Bopper Cubes”. It would allow only cubes and all they could do would be: appear, disappear, follow a 3 d path at any speed for any distance, change orientation (rotate about any axis), change size, and change what is displayed on each of the six size of each visible cube). I plan/hope/may learn to use the Unity game development system with C# to do this. I give myself a 1 in 4

chance of making much progress and a 1 in 100 chance of creating a minimally usable “construction set” unless I can get some strong collaborators. I will write, and then periodically update, an essay telling where I am in this process.

The application described above would be like a 2 or 3 on a scale of 100 where a commercially viable application would have to be 80 or higher.

What would it take to create a commercially viable initial version of Harry’s Boppers?

I don’t know. On the one hand I think it would take the same kind of resources that were used to create the Unity game development system, or the resources that created the Bryce 3D drawing program. I’m guessing that those took at least 5 to 10 full time programmers at least a year. However, Minecraft was, I believe, pretty much created by one person, Markus "Notch" Persson , and I infer (guess) he did most of the initial development in less than a year or two. So who knows. An upper 1% programmer or two, with the appropriate background, might create a commercially viable product in a year or two.

Given that the initial version would be fairly limited, what do I see as the future of development once it is widely used and appreciated?

In my dreams this is an open-end software project where programmers could add libraries of tools. They might even add libraries of tools to create tools. For example – a tool might be :”dancing robots” like those in the 1993 “[Harry Boppers](#)” [short story](#) underlying this fantasy. Then someone might add tools to create robot like creatures with various bodies (humans, dogs, octapi (?))

Then someone else might add tools that would allow a robot to do any of a particular set of dance steps (waltz, rhumba, cha-cha-cha etc.), then another developer might create a tool that would allow any developers to create any dance step that could be used with any “robot like creature” with the appropriate API.

Anything anyone could envision could be added. As with music, or art, some users of the application (artists, creators, choreographers... maybe a new title) would only use a few of these techniques – and still do great things. Others might use, and perhaps create, a wide variety of tools.

Other thoughts:

To start with there are several major focus areas that are related but somewhat separate and my communications may jump between them. These include

(1) the original “Harry’s Boppers” concept ([click here](#) for a short story attempting to capture that concept in 1993),

(2) the more advanced version of that (VR/AR versions and an open source development environment enhancing the evolving application)

(3) The possibility of an application that could be used to create VR versions that could be replayed in a VR environment that would allow a participant to interact with and affect/change the experience. The participant would be able to move things, reshape things, add things, change rhythms etc.)

(4) The possibility of “Visual Music” without any sound

[Click here](#) for an essay attempting to capture my vision related to items (3) and (4) in the list above.

When discussing anything to do with this area I should do my best to be clear which of the above 4 areas I am referring to..

I see the original “Harry Boppers” concept/vision as a very tightly limited vision. I would like to see this made a reality. I also see any number of other related visions for using digital technology to create visual experiences and to create visual experience complementing music. I see the possibility of AI driven, or augmented, creations of music-like experiences, with or without accompanying sound.

At the far end of my imagination I can see the possibility of related development creating one or more new languages for humans. Current human language is audial. The printed text is a direct translation of the audial. With digital technology we could have a visual language,

A human would “speak” the language using a combination of body movements (especially hands and fingers) and voice. A program would sense (read, identify, measure) each movement and translate it into a visual experience that could be understood as a language. My thought is that each second of this visual communication could contain far more information than a second of the human voice. There could be many “visual language” and there could be families of closely related ones.

A big part of the joy of this area is the imagining of things that may never exist, but could.

Harry Baya, June 1, 2022.