The Artistic Concept of Abstraction as Applied to Theatrical Sound Design.

A novel conceptual framework for understanding and controlling how abstraction is used in theatre design highlighting examples from sound design.

"As yet, objects did not want to - and were not to - disappear altogether from my pictures… I was not yet sufficiently mature to be able to experience purely abstract form without bridging the gap by means of objects."

Vasily Kandinsky. *The Cologne Lecture*. 1914

When Kandinsky said that he was not yet sufficiently mature to paint without representing an object, a *thing*, he meant that he was not yet far enough along on his own artistic journey, and also that he was not yet brave enough. We now call the process and end result he was describing abstract painting.

Nowadays, we take for granted that abstract paintings do not have to represent any *thing* in the world, but for the artists at the time (around 1911-13), this idea was akin to sailing over the edge of the world. Look at it through their eyes—since the first cave drawings nearly half a million years ago and counting, images had been of *things*, real or imagined - animals, people, vases, fruit, flowers, hillsides, buildings, historical scenes and deities. How could a painting not be of any*thing*? They couldn't even conceive of it, going there required incredible courage. So much so, they had to prepare the way by writing manifestos about abstraction before they actually had the courage to paint abstraction. Both Kandinsky and the poet Guillaume Apollinaire published manifestos essentially arguing for the freedom/courage to pursue abstraction.

The term 'abstract' usually brings to mind a product such as a painting hanging in a gallery, but really, it is more interesting to examine it as a process—the process of abstraction. Since theatre sound design is so fleetingly ephemeral and only shared by those that actually hear it, as well as being hard to analyze in concrete form after the fact, let us use the more easily inspected images of visual arts and set design to investigate this process of abstraction further before applying it back to sound design.

If you look at the progression of paintings from the abstract artist Piet Mondrian below (without considering the titles of the paintings) we can see this process of abstraction that he undertook in his career. Mondrian's evolution of abstraction is a widely accepted principle described in such diverse publications as The Lancet (P2043, JUNE 08, 2002) and The

Economist (Jun 8th 2017). A particularly easy read can be found on-line at https://emptyeasel.com/2007/04/17/piet-mondrian-the-evolution-of-pure-abstract-paintings/

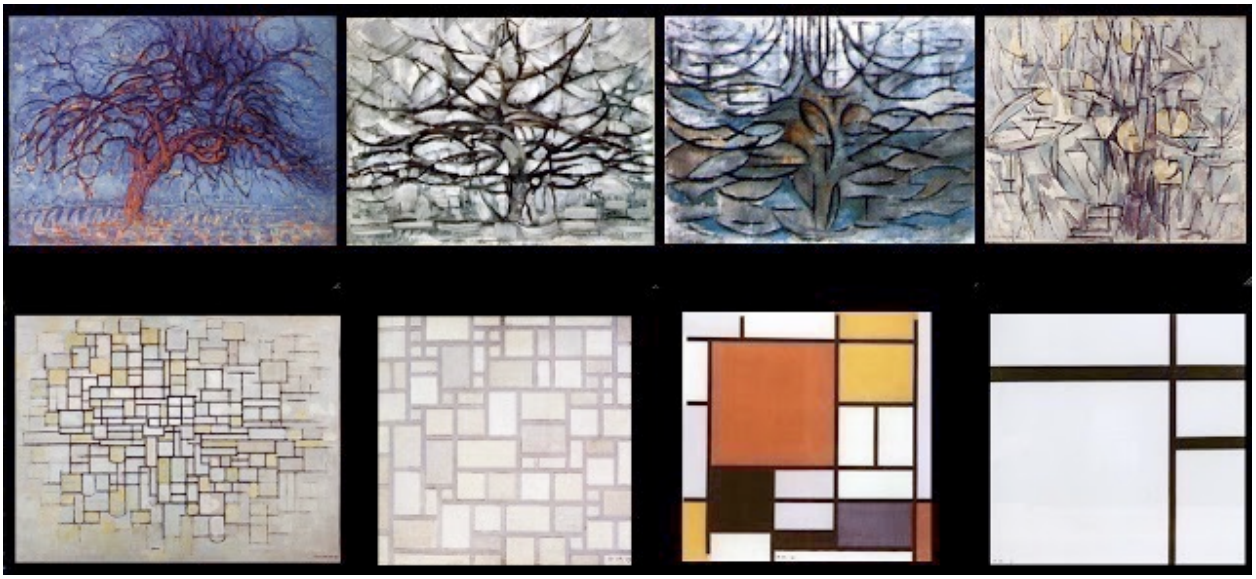


Figure 1. Piet Mondrian progression of abstraction. ©2020 Mondrian/Holtzman Trust.

Painting #1 – Impressionistic painting of a tree. ©2020 Mondrian/Holtzman Trust.

Counting #1 through #8 from top left, painting #1 is an impressionistic painting of a tree in winter without its leaves (a *thing*). At the start of his career Mondrian was an accomplished impressionist painter. If you didn't inspect his use of colors and brush strokes too closely, I think his paintings could easily be mistaken for a Van Gough.

Painting #2 – First abstraction. ©2020 Mondrian/Holtzman Trust.

In painting #2 Mondrian is still retaining the overall shape of a tree and is still using the same materials to paint the image but the colors have now gone away, and he seems to be focusing exclusively on the trunk and the branches of the tree. He seems to be emphasizing the sweep of the curves that the limbs make. It is these elements that he has *abstracted* from the image of a tree. Notice the elements that he has retained and developed further (including the motif of the ground and sky in addition to the trunk and branches), but also be aware of the elements that he has eliminated (most noticeably the colors differentiating the ground, sky and wood). I think we would all agree that this first stage of abstraction in painting #2 is still recognizable as representing a tree.

Painting #3 – Second abstraction. ©2020 Mondrian/Holtzman Trust.

If we now move to painting #3, the sweep of the curves of the limbs have been cut into individual short curves. The central core now reaches the edge of the canvas and has lost the overall outline of a tree. This time Mondrian seems to be focusing on and emphasizing the negative space between the curves, and what were originally the branches are now just black

outlines of those spaces albeit with some being leaf shaped. He has now augmented the muted palette and brought back color into these spaces. If we knew that this was supposed to be an abstract painting of a tree, we could recognize it and pick out the trunk. If we were still looking for a tree, looking for 'treeness' in the image, we could also pick out that the colors are more saturated in the lower half of the painting than the top half representing ground and sky. However, and this is important, if we did not know it was meant to represent a tree, we would think it was possibly something else. Without this contextualization of 'treeness' it could represent almost anything; possibly just reflections on the surface of rippling water. However, be aware of our motivation as viewers. We are still trying to see in it a *thing* even if what is perceived is not what was originally intended.

Painting #4 – Third abstraction. ©2020 Mondrian/Holtzman Trust.

Moving through the rest of the paintings… in painting #4, the outlines are now rectilinear as well as curvilinear, and what were the spaces between the outlines seem to have become two dimensional planes. These have been lifted out as *shards* of a shattered painting and slightly redistributed throughout the image like incorrectly gluing back together a broken teacup. Mondrian also flirted with cubism and we can see an aspect of it here. There still seems to be a central core and the image tapers off towards the edges giving a sense of representing a physical *thing*; a figure in front of a background, but with this painting we have no idea what that *thing* is. It would be easy to interpret this fragmentation as a new aspect of the process of abstraction, but it is still just choosing a few elements to play with, extracting them out and developing them further into their own new thing.

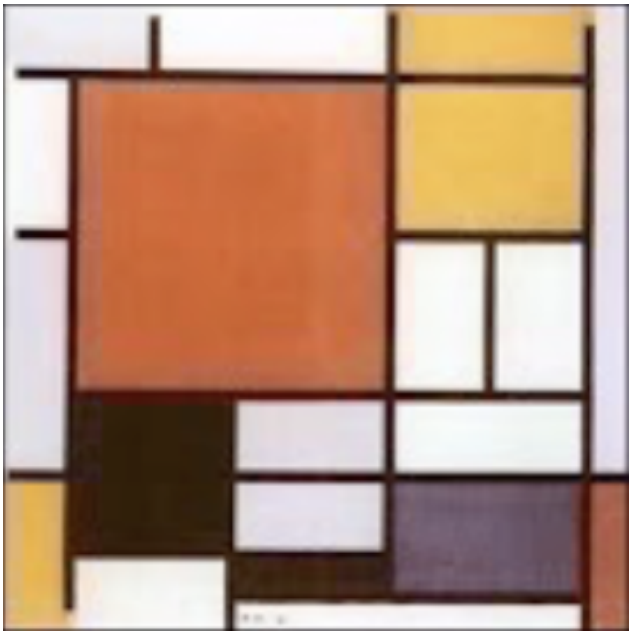
Painting #5 – Fourth abstraction. ©2020 Mondrian/Holtzman Trust.

In painting #5 all the curvilinear edges have been reformed into rectilinear edges and now the two-dimensional *shards*, or *tiles* (as they are now), have been laid out with some tiles seemingly obscuring parts of others below them giving a sense of three-dimensional layers. The colors are very subdued, and the white areas do not seem to be the absence of *tiles* but just ones that are colored white.

Painting #6 – Fifth abstraction. ©2020 Mondrian/Holtzman Trust.

In painting #6 all the rectilinear *tiles* have been flattened into two dimensions with no sense of layering. The outlined edges to the *tiles* have become lines again of similar thickness. The colors are still very subdued, and the white areas still seem to be white colored *tiles* and not the absence of them. All the previous images seem to be denser in the center and taper off at their

periphery, whereas this image seems to be that of a pattern spread equally throughout the image that could be continued in any direction if need be. This major break with the previous images has stopped any remote sense of possible 'treeness' even if it was heavily contextualized.



Painting #7 – Sixth abstraction. ©2020 Mondrian/Holtzman Trust.

In painting #7 the rectilinear *tiles* have now become geometric pattern like *fenestration* as in a leaded windowpane. The black geometric grid is all of similar thickness and some areas are filled with saturated color and some areas could be seen as being filled with nothing and empty, looking through to the background. If you have the chance to see Mondrian's paintings close up and in person, you notice that the white color is as saturated and has similar three-dimensional brush strokes as the other colors. This gives the white areas a sense of a filled pane like the other colors, not just empty and looking through to the background as the flattened image above implies. Up close the brushstrokes give a sense of encoded organic intention, but in no way could there be considered any 'treeness' in the image.

Painting #8 – Seventh abstraction. ©2020 Mondrian/Holtzman Trust.

By the time we arrive at painting #8, it is the grid and the white that is important. The sense of either *fenestration* or solid *tiles* is equal. Is the black on top of the white or the white on top of the black? It could be seen as either. Mondrian is now adjusting the thickness of the black *fenestration* in the same way that he has varied the size of the *tiles* in order to balance the two out and not make either dominant. Notice how far from a tree we have come. If there is any sense of 'treeness' in this image it is only because I have presented it as an evolutionary series. Taken on its own, without any contextualization, it is definitely not a tree!

As we can see from this sequence of paintings, abstraction then seems to involve a process of first eliminating and choosing, then lifting out only a few elements of the original. Mondrian's choices move between shape, line, rhythm, color and texture and each abstraction is not the same as the last. He then plays with his choices, amplifying them and then develops them into their own new thing - a new original. This process happens over and over again as a few elements from the last version are lifted out and developed further into a new original painting. This then is the process of abstraction in contrast to its product.

An artist can indulge in this process as many times as they like in the quest to develop their own unique style of painting. Each new work stands by itself and does not have to reference in any way what it came from. You don't have to make the connection that it originally started out as a tree in order to enjoy the painting. Even though these paintings are conventionally displayed with a description of the media used and a name attached to them, they are presented as, and meant to be, an image in its own right and not dependent on any other previous or implied

knowledge. As such, they encapsulate their own meaning. In reality, the naming usually comes after the creation of the painting and is necessary for identification and cataloguing purposes.

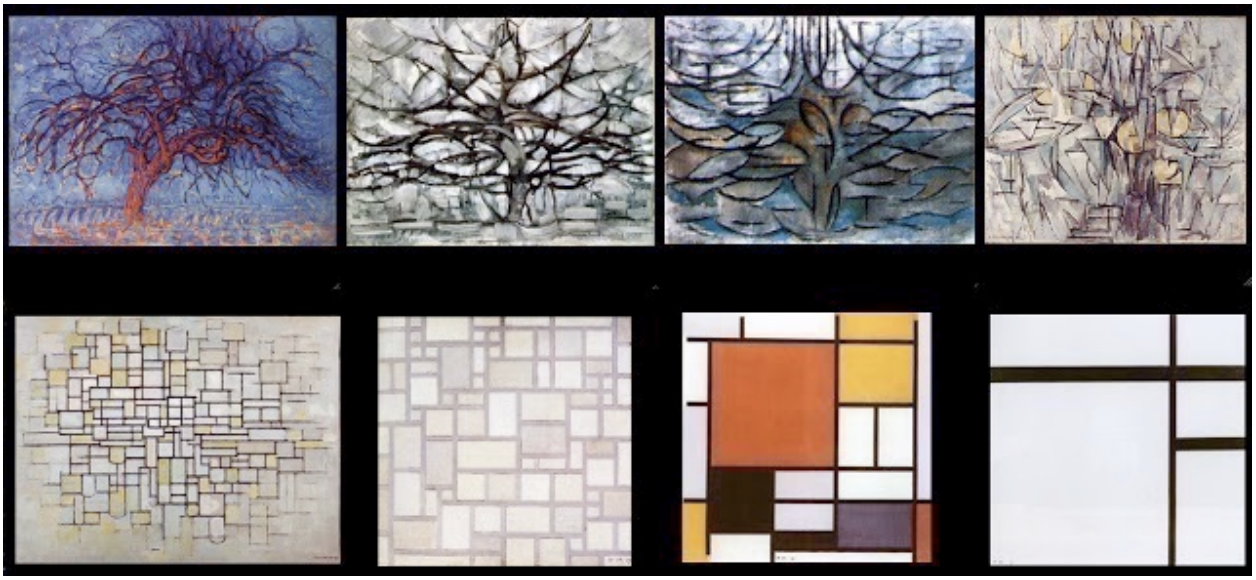


Figure 1(repeat). Piet Mondrian progression of abstraction. ©2020 Mondrian/Holtzman Trust.

If we look at the sequence again in Figure 1 (repeated above), paintings #1 and #2 are definitely of a tree, #3 seems to be reflections on rippling water, #4 seems to be some kind of cubist shrub or explosion, #5 seems to be a pattern spied through fogged glass, #6 through #8 are patterns, first monotone, then highly colored and lastly a white and black lined pattern. Without any contextualization of any kind, #3 through #8 are definitely not representative of a tree in a viewer's eye.

Can designers do the same thing? Can we theatre designers go through many iterations of abstraction and end up with an object or sound effect that bears no resemblance to what it is supposed to represent? As designers, we have a sense that some utility is required in a design that other artists do not necessarily have to embrace. Mondrian's painting does not have to stand in for, or symbolize, a tree. Usually if a theatre designer puts a tree in their design it is because they need a tree because it is either stated as a stage direction or implied in the dialogue or the actor requires it in order for them to respond to it or propel their acting in some way. There is precious little money in dramatic theatre these days to be wasted on elements that are superfluous to the story, and little patience for wasting valuable tech time integrating a needless element into a production.

Leaving aside any deliberate Brecht-like attempt to alienate an audience, or any theatre-of-images work by someone like Robert Wilson, looking at the Mondrian sequence above, how far could a theatre designer get in that process of abstraction before it became totally disconnected

from the original symbolic intention? Painting #1 is of a tree. Painting #2 is a reduction of a tree but still a tree. Painting #3 is only a tree if someone refers to it as a tree or they use it as a tree. For painting #4 to be a tree, it would really need more than one production element (acting, movement, dialogue, sound, lighting, etc.), to contextualize it and introduce some grounding sense of 'treeness' for us to *suspend our disbelief* and think of it as a tree. However, barring any such defining contextualization or grounding, if we use Painting #5 through #8 to stand in for a tree, we would be requiring our audience to spend a significant amount of time trying to make the connection in their mind. This is precious time that they would not be spending immersed in the show and listening to the dialogue. It would break the *willing suspension of disbelief* and jump the audience out of being immersed in the show while they were trying to figure it out.

Interestingly, the image below is of a design for *Cat on a Hot Tin Roof* by famous set designer Jo Mielziner. He designed it more than 60 years ago, half a century after the world was first introduced to abstraction. All the scenes in this play are set in the same location, the bedroom of BRICK and MAGGIE. The essence of the narrative is that BRICK and MAGGIE are having some marital issues that they need to discuss and sort out privately, but they never get any privacy as family members keep barging in, or listen at doors, or spy on them through the windows, or overhear them. Mielziner has taken this and extracted out just the few elements that are necessary to support the narrative - the bed, the drinks cabinet with HiFi, another place for interlopers to sit. Because the actors use these props and interact with them it makes their possible abstraction more difficult so Mielziner makes them traditional and contemporary to the period, as are the costumes.

However, like Mondrian in his process of abstraction of the tree, Mielziner has also eliminated the inessential and extracted out the necessary elements of the actual room and developed them further in a very stylized way. The walls and windows are now grand, tall, diaphanous curtains which allow the audience to see other characters listening or spying. These curtains are gathered periodically and give a sense of the spaced Antebellum columns as a visual gesture to the setting for the play; the southern plantation home of a wealthy cotton tycoon. The ceiling piece is embellished and detailed and is the one element that actually gives the sense of it being a room in a grand old house. The final element is the floor which is a raised dais or platform - the bedroom as the sacrificial alter of a marriage. Interestingly, the set is also designed on the diagonal. This allows one corner to be very close to the audience for those soliloquy-like intimate moments as well as positioning the bed on a diagonal upstage. MAGGIE has some very vulnerable and intimate dialogue laying on the bed and the position of the bed allows us to see her head during these moments and not just her feet which would be the case if it were straight on.

Note that Mielziner has not used every element that would convey this particular bedroom. He has eliminated many and only lifted out those few elements that were needed to frame or tell this particular story. He has played with some of these elements—the walls and the columns—developed them further and has transformed them into their own thing. For these particular elements, this is the same process of abstraction that we saw in the Mondrian sequence above.

Figure 2. Set Design for Cat on a Hot Tin Roof · 1955 · Jo Mielziner. (*Smithsonian*)

If we try to equate Mielziner's design journey of abstraction with the sequence of abstract paintings discussed above, where would it land in the Mondrian sequence? I think it equates to painting #2 implying one single stage of abstraction. In the same way that painting #2 is "still recognizable as a tree", Mielziner's scenic design is still recognizable as a grand room in a palace or grand old southern plantation.

It can be argued that the gathering of the diaphanous curtains into symbols of grand columns is a further stage of abstraction akin to painting #3 but ask yourself, why can't Mielziner go all the way and abstract his whole design out further to the equivalent of painting #8?

I think that there are two reasons. First, unlike Mondrian (an artist) who isn't trying to make his paintings be perceived as any*thing* in particular, let alone a tree, Mielziner (a designer) is still trying to convey a grand palatial bedroom in a southern plantation. It still has to be an abstraction of a *thing*. Secondly, Mielziner is also part of a design team, so leaving aside any possible post-dramatic or postmodern design interpretation, his abstraction still has to fit into what the other designers, and the director and actors are doing. In fact, everyone in the production is starting from the same source material - the script – so an individual production element such as set design cannot stray too far from that script without becoming out-of-sync with their fellow collaborators.

In conclusion of this section, unlike the freedom that an artist has to pursue their creative journey no matter where it takes them, we designers always have to tie our creative journey to the story that is being told and we always need to fit in with what our fellow creatives are contributing. (That is not to say that if all the other design elements are being abstracted further still, we cannot abstract our own element even further as we will see later.)

To discuss the process of abstraction in theatre, I like to use what I call the story blob. In the example of a story blob below I have used the image *Metamorphosis II* by M. C. Escher (public domain) to visually represent the creative content that is first being extracted and then abstracted.

<- This blob is the original story of the play.

Out of it I have extracted this element ->

and developed it further into its own blob ->

I have now extracted out this element from it ->

…then developed it further into this new blob ->

But now compare it with the original ->

The chess pieces and squares bear no relation to the original story which was a journey from triangles to birds. I have abstracted it one step too far.

The first stage of abstraction is to take the few elements that you want to work with and extract them out and then amplify them into their own thing. This first stage ensures that the elements that you are abstracting (the process of choosing, extracting and amplifying) have something to do with the script that everyone on the show is working from. Since the original few elements were originally from the script they are referenced back to the script. If we now perform a second stage of abstraction on the product of that first stage, the only way it can work for us as theatre designers is if it still references the script directly in some way as opposed to it only growing out of and referencing our first abstraction. See figure 2 below.

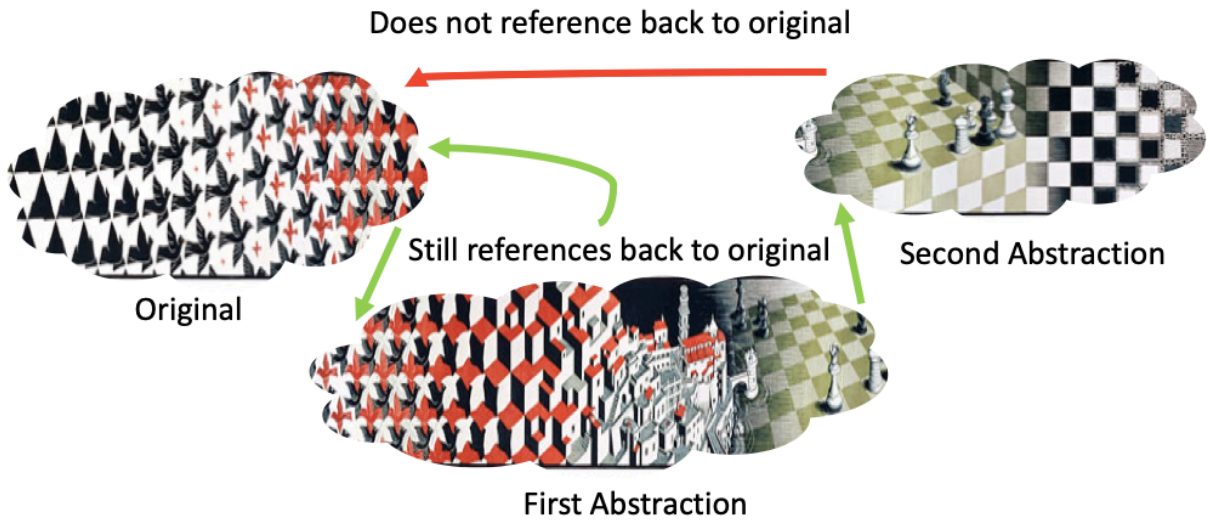


Figure 3. – The Story Blob.

Mielziner did that in his design for *Cat on a Hot Tin Roof*; although he took an element from his first process of abstraction (turning the walls into curtains and making them diaphanous and see-through), he then used that element as his starting point for his second stage of abstraction where the gathered diaphanous curtains became columns. This second product of abstraction not only referenced back to the curtains (the first product of abstraction), it also referenced back to original script as being a strong symbol of antebellum southern plantation architecture. Unlike Mondrian's second abstraction, his painting #3 which we decided might be interpreted by a viewer as something entirely different than a tree, Mielziner's second stage of abstraction, although growing out of his first stage of abstraction, is strongly referenced back to the original script and therefore remains anchored to the storytelling. Also, as mentioned earlier, in this particular example, the props and costumes being traditional and contemporary to the period, helps ground the abstracted setting and provides a context to support a second stage of abstraction with the columns.

So, let's now turn to sound design and see if we can mimic the simple Story Blob concept laid out above, but this time using sound effects instead of fragments of Escher's image. Note that we will eventually build out further this translation into sound with an example from a real production, but for now, let's keep it simple so as to clearly expose the process and the limitations of this process of abstraction using sound.

As noted, it is often very difficult for a reader to accurately "hear in their mind's ear" sounds described in writing. For that reason, wherever possible, I will be using examples of easily identifiable sounds from the world around us that are easily imagined. That is not to say that the process of abstraction I am describing is strictly limited to outright substitution. Indeed, to abstract sound I have also used sound creation or sound blurring/processing that leaves intact other parameters of expression (e.g. timbre, pitch, spatialization, etc.).

Returning to our example, suppose we have a show where it is important for the audience to know that a character has arrived by car and we need to provide a sound effect of a car driving up. Below is a list of a few of the elements that could potentially make up the sound of a car driving up.

Sound
Engine noise
Car horn
Gear change
Tires skid to halt
Car door slam

Since I do not want my sound effects to compete with the dialogue until it is clearly necessary to the story, I'm going to discard the aural elements that need any 'pre-roll' time to be established. So, I'll extract out just the horn, skid and the door, and sequence them in that order.

Sound	**Extraction**
Engine noise	
Car horn	Car horn
Gear change	
Tires skid to halt	Tires skid to halt
Car door slam	Car door slam

Having extracted these few elements, now let's take them through one stage of abstraction and turn the car horn into a double beep of a saxophone. Let's also replace the skid/halt of the tires with the sound of the skid/halt of an ice hockey player on ice and lastly let's replace the car door slam with the sound of folding up one set of legs on a folding metal table. Like Mondrian, I

have now extracted a few elements from the original sound cue, namely the sequence of sounds, their rhythm and approximate duration, and I have developed them further by re-clothing them in new sound effects not tied to the original intention.

Sound	Extraction	First Abstraction
Engine noise		
Car horn	Car horn	Double beep on sax
Gear change		
Tires skid to halt	Tires skid to halt	Ice hockey skid/stop
Car door slam	Car door slam	Folding metal table

I have chosen these specific sounds as I am hoping that they are all easily conjured up in the *mind's-ear* of the reader.

I believe that in the context of a drama, I could sell this first abstracted sequence of sound effects as a car driving up to the audience as long as either there was dialogue close to the sound cue to identify that someone was arriving by car or an additional character entered the stage shortly after the sound effect seemingly having arrived by car. Why does it work? Because the shape in time and overall tonality of the sounds fulfill the original narrative even though the new sounds are not the actual sounds but sounds abstracted from the original. Like this first sound abstraction, we still see the shapes of branches in Mondrian's first abstraction even though they are not painted as realistic branches and the overall color differentiation is that of a leafless tree against a background even though it isn't a realistic scene of a tree. I believe the audience would buy into this first abstracted sound cue as the sound that symbolizes a car pulling up and someone getting out.

Now let's build a second stage of abstraction using the first abstraction as its starting point. The double beep on the Sax is now a short tune. The short skid and halt of a hockey blade on ice becomes just the sound of a hockey player slamming into the plexiglass surrounding the ice rink. Lastly, the leg folding of a collapsible table has been extracted and abstracted and now has a definite plastic ring to it instead of the sheet metal sound of the previous abstracted sound effect.

Sound	Extraction	First Abstraction	Second Abstraction
Engine noise			
Car horn	Car horn	Double beep on sax	Short tune on sax
Gear change			
Tires skid to halt	Tires skid to halt	Ice hockey skid/stop	Hockey player slam into glass
Car door slam	Car door slam	Folding metal table	Folding plastic table

I believe that this would make an interesting artistic sequence of sounds in their own right, but now there is nothing that references back to the original narrative, so the sequence of sounds does not make any contextual sense with the action happening on stage.

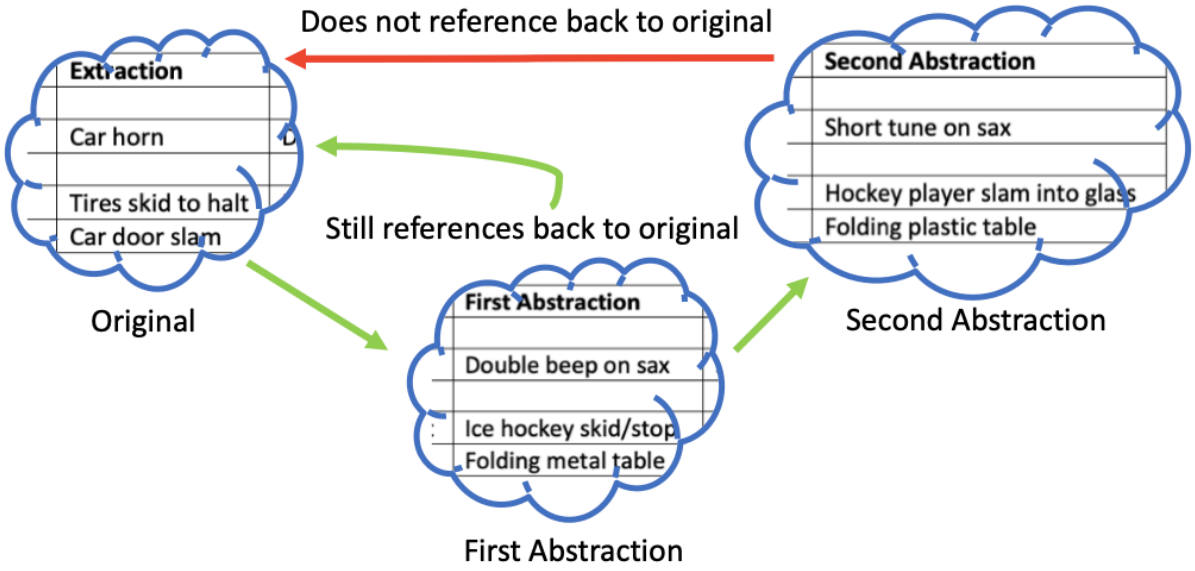


Figure 4. – Stages of Sound Story Blob Abstraction.

If I were to play this as the sound cue, the audience would be snapped out of their willing suspension of disbelief and their thoughts would be taken up with *"what the hell was that…"* rather than remaining immersed in the play and thinking someone had just pulled up in a car.

Just like Jo Mielziner's gathering of curtains into columns any abstraction I perform as a theatre designer, whether it be visual or sound, has to always reference back to the script/production in some way. If it doesn't, it becomes uncoupled from the story on stage. It also becomes uncoupled from the other design elements and leads to confusion in the audience with a result that their attention is turned away from the story being played out in front of them. It has now crossed the red line of audience believability (non-dis-believability). Maybe you want this to happen as in a Brechtian production where the design elements are continually getting the audience to disengage and question their motivations, but probably you don't!

So, if abstracting something that has already been abstracted is problematic for a theatre designer, how far can you take the first abstraction? The answer is surprisingly quite far, as long as the other design elements are also abstracting in a similar way or their contextualizing grounding is very strong.

When I first came over to the United States, like many other theatre designers, I redesigned the sound for a Christmas show that was remounted every year. As part of the production, a few seats in the audience were platformed over and at a certain point, an actor in costume would come up the aisle in the darkness and mount the platform while our attention was directed towards the stage. Suddenly the lights would come up to reveal them and they would start speaking their lines and acting their part from the platform. Not that I hadn't seen this done many times before, or that it was theatrically unusual in any way, but I started to be fascinated by this and got to witness it over and over again for the next three years and deconstruct what was in fact happening. In front of my very eyes, actor turned into character and bare platform turned into scene. How did this transformation happen? At what point did it happen in the sequence of events. What made it happen? Was it the spoken dialogue, the character's movements, the lighting, the costumes, the sound, all of them, just some of them?

What I uncovered deserves a paper all of its own but suffice it to say that sound by itself does not seem to have the same power to suspend disbelief for an audience as do other production elements such as acting, scenery or lighting. That is why my example above of an abstracted sound of a car driving up seems too simplistic and not particularly inspired. Without contextual support, it is! I discovered that sound by itself cannot be abstracted very far before it crosses the red line and loses any sense of believability. However, if all the other production elements are also being abstracted in the same direction, then the first level of abstraction for sound can actually go quite far.

Nearly a decade ago I designed the sound for a stylistically abstract production of Tennessee Williams' *The Glass Menagerie* directed by Preston Lane at Triad Stage in Greensboro NC.

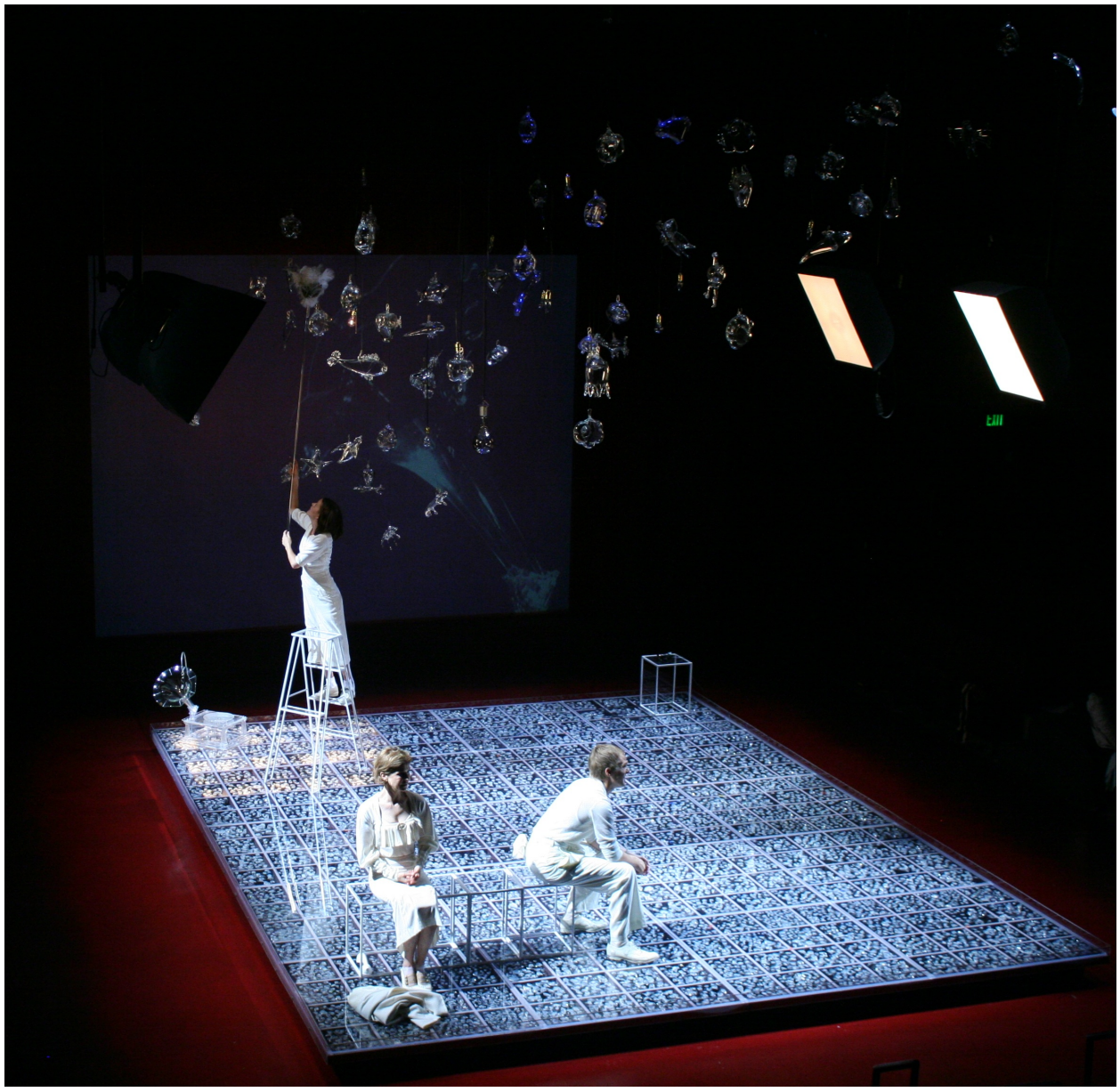


Figure 5. Photo by kind permission of Jeffery West.

Looking at the production photo above, you can see that the set and props designed by Anya Klepikov, consisted of an underlit chequerboard floor of glass pebbles surrounded by a red moat. The glass menagerie animals were blown art glass hung from the grid such that they were always there catching the light. As you can also see LAURA had to climb a stepladder to dust them. Notice that the few props were made from white frames and plexiglass to accentuate the non-solid nature of memory and under the exquisite lighting by Norman Coates, even the blown glass menagerie became just lit outlines and almost immaterial. As the narrator TOM tells us "…The play is memory. Being a memory play, it is dimly lighted, it is sentimental, it is not realistic…". Even the white costumes by Kelsey Hunt accentuate this immaterial nature and give a nod to

Peter Brook's *Dream* and the cultural legacy of *Pierrot Lunaire*. Since everything else was just non-solid outline, this production really put Williams' taut dialogue and complex relationships of his characters front and center in a refreshing uncluttered way.

There was another element to this abstracted design that is not obvious from the photo above. TOM had with him a small black and white video camera that was continuously being projected into the back wall. Like early black and white television where it always looked like the outline of the image moving on the screen seemed to be displaced from the actual image, this ghostly moving image was as immaterial as everything else. This highly choreographed technical element by projection designer Nick Hussong brought an almost voyeuristic nature to TOM's infatuation with his mother and sister and allowed us to never forget that even though he was acting in his own memory, he was also narrating it from the future.

There are many opportunities for sound, especially music, in the play. AMANDA, the mother, has three sections of reverie of her younger life which beg to be emotionally underscored. Also, there are many opportunities to underscore the sections of TOM's narration to separate it from when he is acting in his own story especially since his narration usually overlaps the start of the story being acted out that he is about to join and take part in. Additionally, there is the potential for musical underscoring that references LAURA's reminiscence of JIM's role in the Pirates of Penzance. By the way, have you ever wondered why Tennessee Williams specifically chose *The Pirates of Penzance* as the school production that JIM's sang in and LAURA came to watch three times? Look at these lyrics from the operetta.

FREDRICK
Oh is there not one maiden here
Whose homely face and bad complexion,
Have caused all hope to disappear
Of ever winning man's affection

Director Preston Lane often quotes the designer Ming Cho Lee. *"All Theatre is Opera"*

Along with all the wonderful opportunities for musical underscoring there are also diegetic sounds – sounds that the characters hear - that are necessary. Church bells and alarm clock. A doorbell for the Gentleman Caller, and a sound to stand in for a key, that is hard for an audience to see because it is so small, that must be understood to have fallen and be lost. All these were conceptualized aurally and made using various glass sounds in keeping with the visual abstraction. As you probably would expect, to make these sound cues I mined sounds from tuned and untuned glass windchimes and also made liberal use of glass like reverberation that encoded many facet-like early reflections in keeping with the concept that I had developed. I

also used a glass crash at one point that when played for the first-time during tech, brought the whole of the administration into the auditorium. Listening over show monitor that is distributed to all the offices in the building, they had thought that their very expensive blown art glass had all come crashing down!

Without delving too deeply into each specific sound cue, I think that the reader will agree that this concept of an abstracted vocabulary of sound effects represents only a first stage of abstraction; original realistic sound effect now abstracted into sound effect made from various glass sounds. Mondrian's medium of paint has been substituted by the medium of sound with the objects they represent – branches/glass - being chosen and developed further. I also think the reader can also imagine this vocabulary being deployed successfully throughout the show due to it being reinforced by the specific abstract nature of the other design elements as well as the blocking and acting. For example, within this vocabulary a doorbell now becomes a tinkle on a glass windchime supported by TOM and the GENTLEMAN CALLER walking around the red moat and arriving at an immaterial door and miming pressing a doorbell.

However, what to do about the phonograph (Victrola)?

Figure 6. Photo by kind permission of Jeffery West.

As you can see from the figure above, the phonograph was in the same immaterial stylization as the rest of the props and set being built out of plexiglass with a blown art glass horn. It

obviously was not meant to be functional, but for two important parts of the show it was important that LAURA listened to it.

At the start of the play TOM narrates to us that their father '…fell in love with long distance…' and left the three of them to fend for themselves. The phonographs that LAURA listens to are one of the last connections to her father left in the house. As she is painfully shy, she retreats to the comfort of listening to them when stressed or confronted. The design problem was that she needs to listen to something but is that immaterial phonograph really going to play music? Diegetic music may waft in through the window from an unseen dance club across the street for them to dance to in the final scene, but phonograph recordings would not fit in with the abstracted world of immaterial outline that has been established on stage in front of our eyes.

I briefly toyed with making a MIDI instrument out of individual chimes of a windchime and have it play some music, but that sounded either too child-like or too cheesy. The design question I was wrestling with was… What was the immaterial outline of a phonograph recording that would fit in with my already established vocabulary of glass sounds and also fit in with the concept of immaterial outline employed by the other design elements?

At its core, design is really just problem solving and we designers create most of the problems for ourselves that we then agonize about and eventually have to go on and solve. There is an element of masochism in this practice but there is also an essential desire for elegance and harmony. This is why I have never really understood anyone who chose to do the easy thing. Where is the fun in that? As with all problems that I do not have a solution for, I turned my attention to another part of my design and let the problem of the phonograph ruminate away subconsciously in my mind.

Who really knows how it happens, but *Eureka*! I had it! What are the outlines of a phonograph recording? The lead in groove before the music happens and the lead out groove after the music is finished of course! Because the lead out spiral groove eventually joins to itself and ends in a continuous circle, the repeating scratchy pops and clicks when the music has ended is a very iconic and recognizable sound, at least for people of my generation. So, for our production LAURA listened to the sound of the end groove of a shellac disc repeating 78 times a minute (the speed of the discs from that era).

You would think that this periodic scratchy sound would be annoying for an audience to listen to, but it is surprising how quickly repeating sounds drop from being noticed and blend into the background in a similar way that the sound of waves on a shore melt away into the background. This iconic sound also had another added benefit. For the same reason that it easily becomes part of the background it also does not compete with dialogue as much as music would

have done. This meant that during dialogue, we did not have to drop its level down as much after establishing it as we would have had to do had it been music. Indeed, the first time the phonograph is used, LAURA puts on a disc to drown out the telling-off that she is receiving from her mother and we were able to run the sound cue a lot louder without obscuring the dialogue before AMANDA shouts for her to turn it off.

There was something quite beautifully sad about LAURA listening to the absence of her father's music rather than the music itself. Rather than accentuating her retreating into the fond memories of the time when her father was with her and was part of the family, it accentuates her continually looking for something that is lost and beyond recovering. The impression that an object or person made rather than the object itself. The fossil of a memory. This could also be conceptualized as a further degree of abstraction. Absence as a form of abstraction – erasure, effacement, the drawing of attention to what is not there. But let's not get carried away!

There was one final twist to this sound cue. Since the phonograph was made from plexiglass and blown art glass, I subtly mixed in the (also) iconic sound of glass being scored with a diamond cutter and combined it with the periodic scratch of the disc to give that brittle fragile quality that aurally acknowledged the glass like abstraction of the rest of the visual design. Although I freely admit that I did not realize it at the time, I now like to think of it as my homage to Jo Mielziner and his gathered diaphanous curtains representing antebellum columns. It is probably my once-in-a-lifetime successful second stage of abstraction in sound design, sadly, unlikely to be repeated.

The conceptual framework I have developed above for understanding how the artistic process of abstraction can be used in the theatre design process is meant to be a first stab at an idea and is not meant to represent a finished immovable end product. Theories and concepts are constructed so that outcomes can be predicted and controlled. They always need to be refined and developed further so as to become more accurate in their prediction and therefore offer better control. I invite the reader to not only use this conceptual framework but also add to it, rework it and refine it to better control the outcome.

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Abstract.

The paper seeks to uncover the conceptual process of abstraction and apply it to theatre sound design. The Author first examines the process of abstraction undertaken by Piet Mondrian in the world of fine art. Then it reveals how the concept was practiced in the scenic design by Jo Mielziner in the 1955 production of *Cat on a Hot Tin Roof* by Tennessee Williams. Next the Author proposes a new conceptual framework for abstraction specifically for use in theatre design highlighting examples from sound design. Lastly the paper presents an example of how this new conceptual process of abstraction was implemented by the author in the sound design for a production of *The Glass Menagerie* by Tennessee Williams.