

Minding music and movies

Charles Young, Ameritest, shows how music and visuals interact to structure attention to ads and improve their effectiveness

IT WAS THREE decades after the motion picture industry was born before audiences heard the words of the actors, but silent movies were never really silent. From the first, movie makers understood that movies without sound can be deadly boring, so a piano player accompanied the action, to help audiences enter emotionally into the world of the moving pictures. Film makers intuitively understood how music and movies can work together. More recently, researchers in cognitive neuroscience have found that the way the human brain processes music and how it processes movies are far more alike than we realised.

Music is one of the three channels of communication that can be woven into an advertising film – with words and visuals. A recent analysis by WPP of a database of 3,500 commercials from the Asia/Pacific region found that slightly over half (56%) used music in some way. Creatives understand the role music can play in attracting the attention of consumers and generating the emotions that build brands.

Advertising research sometimes produces results that are counter-intuitive. One of the more perplexing papers was published a few years ago by Ipsos-ASI, one of the world's leading copytesting

firms. It analysed a large database of ads and found that music, 'particularly loud music at the level of the spoken word', resulted in lower recall scores for commercials (1). In contrast, a recent academic literature review, based on non-copytesting experiments, by Steve Oakes of the University of Liverpool found that likeable music increased memorability, purchase intent and attitudes and preferences for brands. Key to his analysis was the idea of 'congruence' – the appropriate use of music in advertising (2).

The importance of music

Just how important is music in determining the overall effectiveness of the advertising – or, more to the point, how important is it to get it right? To answer this, we did an analysis of a database of commercials that we had tested in the last few years in the Ameritest system. We looked at a sample of 1,400 commercials that used music as a creative element and ranked the ads according to the one diagnostic variable measuring the likeability of the music used in the ad.

By comparing the top and bottom quartiles of ads in terms of music liking (see Figure 1) we found that music appeared to make a big difference. Ads with the best-liked music have nearly twice the attention-getting power of the

Getting it right

What can we say about commercials that get the music right? The answer goes beyond simply finding a piece of music your audience likes. By itself, you might like a piece of music very much, but you might not like it so much in the context of a particular piece of film. In the best ads, music and video move together in a complex creative dance, without tripping over each other's feet.

ads with the worst-liked music. Moreover, the best-liked music appears to double the motivation to buy the brand. The impact of likeable music on brand linkage seems less clear, though ads with strong music score at norm on this. (As suggested above, the impact of music on branding may be more a function of the congruence of music and brand, rather than simple likeability.) But, overall, these correlations suggest that music is a non-linear creative variable: it doesn't just add to the advertising experience – it can multiply the performance of a commercial.

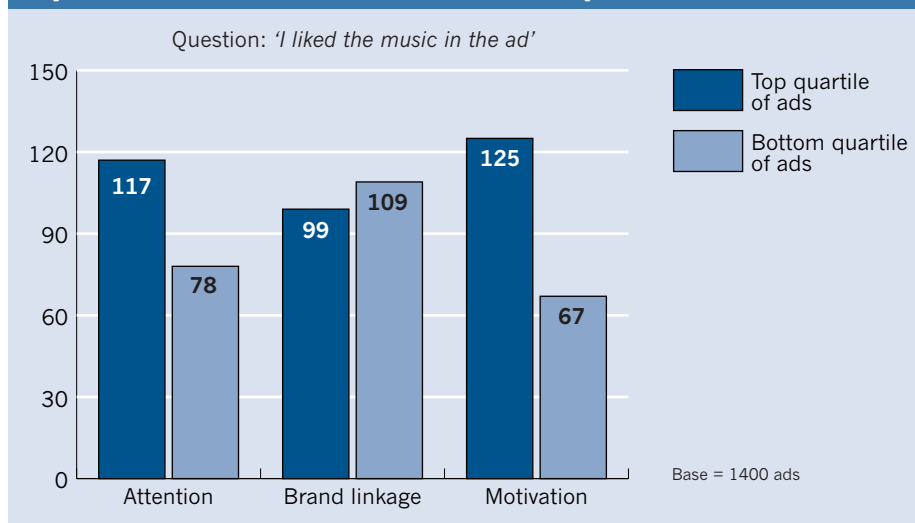
Sensory integration

Recently, neuroscientists have discovered distinct, multi-sensory neurons, involved in the integration of the different sensory channels of the brain. In our daily lives, perception usually involves multiple senses. Most of the time, our senses interact, to make each work better. You can hear someone more clearly across a crowded room if you focus your visual attention on them. Experiments show that you see something more quickly if it's accompanied by sound. Multi-sensory neurons are working when audiences process more of the images in a film accompanied by music.

At a fundamental level of perception, music and movies both encode information in time and are processed by the brain in surprisingly similar ways. Indeed, the sense of the subjective passage of time that swells and contracts as different emotions are engaged is a primary characteristic of the experience we have when we enter the sonic world of a piece of music or the visual world of a piece of film. ▶

FIGURE 1

Impact of well-liked music on commercial performance



In a recent *Admap* article (3), we described how perceived differences in the flow of subjective time are related to the effectiveness of ad film, both in terms of the number of peak moments of attention and purchase intent. Neuroscientists have found that one function of the oldest part of the brain, the cerebellum, is involved in setting our internal clock, a mental metronome that can synchronise our thoughts and feelings with events outside the brain. There is a rhythm and beat to how our minds make sense of the world.

An outdated model of the brain is that it works something like a computer, but a more up-to-date view is that it works more like the internet, where processing is very distributed. Perception, thinking, memory formation and imagination are all complicated processes of deconstruction and reconstruction. Timing is critical to how different neural circuits in the brain are synchronised to produce a single, unified experience.

In his new best-seller, *This is Your Brain on Music*, the neuroscientist and musician Daniel Levitin reported an interesting finding about how the temporal processing of music and visual communication are related:

‘Most astonishing was that the left-hemisphere regions that we found were active in tracking musical structure were the very same ones that are active when deaf people are communicating by sign language ... We were now looking at a

region that responded to sight – to the visual organisation of words conveyed through American Sign Language. We found evidence for the existence of a brain region that processes structure in general, when that structure is conveyed over time’ (4).

Getting the beat

The beat is the fundamental unit of structure, not only of music but also of film. The beat of how an audience cognitively processes film, from pre-conscious filtering to conscious awareness of the visual information, is related to what neuroscientists call the ‘attentional blink’.

The attentional beat of film is a consequence of the limited capacity of the conscious mind to hold on to much information at one time. To measure and visualise the beat of advertising film we use a picture-sorting technique, the Flow of Attention®, a graph that looks like a musical score with pictures from the commercial substituted for musical notes. In other published studies we have shown how the frequency and content of the video beat is highly correlated with the attention-getting power and memorability of commercials.

The tempo of the beat in a piece of music is also related to emotions. Music with fast tempi tends to be regarded as happy, and slow songs as serious. Beat plays a key role in storytelling, whether in a film or a symphony. When we tap our feet to a piece of music our brains are

making predictions about what will happen next. And, as with all good storytelling, composers set expectations and then manipulate them with surprising turns in the music. For example, musicians sometimes add excitement to a piece with syncopation, which surprises us and generates emotion in the gap that opens up between our expectations and the actual performance.

The challenge for creative people, regardless of their medium of expression, is to build excitement by giving audiences (and clients) what they want, but not in the way that they expect it.

Emotion and importance

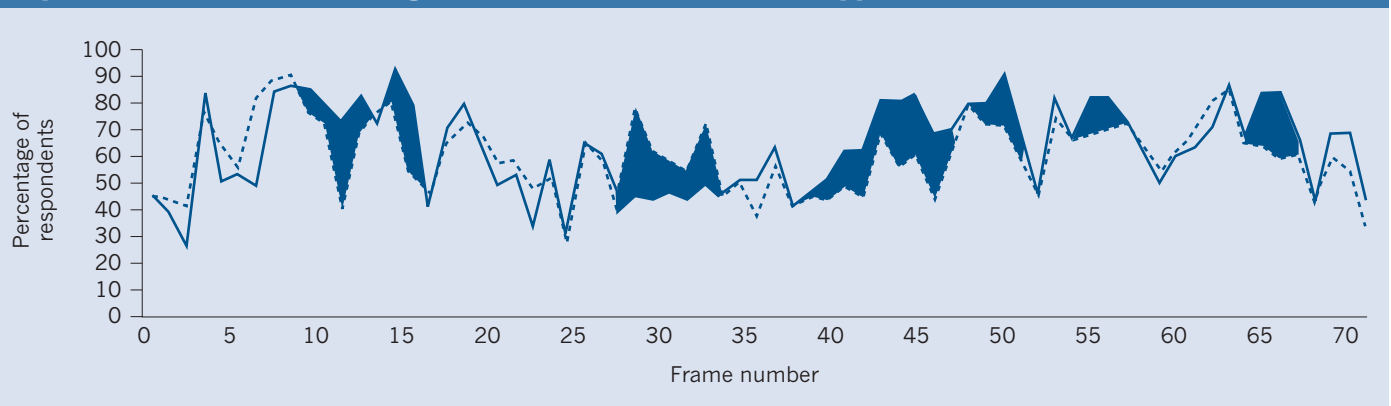
Brain researchers have established that we tend to encode as important things that carry with them a lot of emotion, whether positive or negative. Memory of music and memory of film both involve hierarchical encoding of content.

Not all notes in a musical phrase and not all images in a film sequence are equally important. Experiments with musicians have shown that they cannot start playing a piece of music they have learned at an arbitrary location, but, rather, there are certain entry notes for recall.

In another example, Levitin reports that musicians are faster and more accurate at recalling whether a certain note appears in a musical piece if that note is at the beginning of a phrase or falls on a strong beat, rather than in the middle of a phrase. Similarly, the Russian director

FIGURE 2

Impact of music on visual image recall from ‘The Sorcerer’s Apprentice’



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Eisenstein, writing about his theory of film, talked about ‘privileged instants’ in film, where pathos is created.

The images of a commercial that fall on the beat of an attention curve – the images that stand out most clearly in audience memory minutes after seeing the commercial – are the ones most important in the hierarchy of the commercial’s structure, which is why they are the most predictive of clutter break-through and long-term memorability.

Three types of music

Leopold Stokowski, conductor of the Philadelphia Orchestra and the narrator, begins the 1940 Disney film, *Fantasia* – arguably the world’s first music video – by identifying three different types of music: first, music that exists just for its own sake; second, music that has no specific plot, but paints a definite picture in the mind of the listener; third, music that tells a story.

Advertising makes use of the second and third types. A montage commercial cut to the beat of a popular song would be an example of the second type. Anthem commercials like these celebrate a

brand by associating emotionally charged imagery with the brand name. In these types of commercials the music is the foreground and the pictures are the background of the advertising experience. They are typically devoid of semantic content, since they are not designed to communicate rational information about a product. For that reason, these commercials do not recall test well, because recall measures the semantic content of ads.

Storytelling

It is commercials of the third type, where music plays a role in the storytelling, that are more interesting.

Stories are essential to how we make meaning out of our complex experience, to communicate it to others. Writers use words, cinematographers use pictures, musicians use sound to tell their stories. Scientists use numbers to tell us their stories about how the world works, though they call them ‘theories’ to make them sound more important. Regardless of the medium of communication, the structure and substance of storytelling seems fundamental to how our minds process information that is sequential over time.

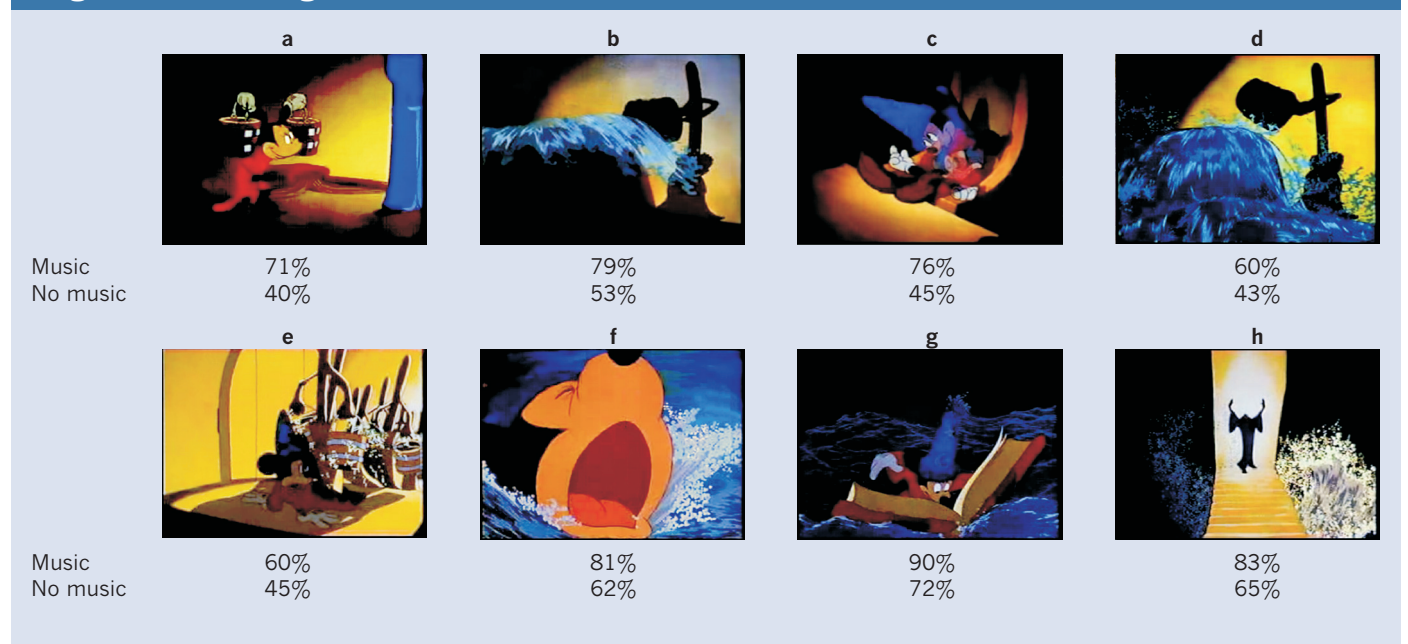
To study how music and moving pictures interact to tell a story, we performed a simple experiment with *The Sorcerer’s Apprentice*, a chapter of *Fantasia* that used Mickey Mouse in a classic example of dramatic storytelling without words. We recruited two matched samples of 100 consumers who had not seen the movie before and showed them the nine-minute clip – with one important difference. One group saw the full music video – the other saw the clip with the sound turned off. Afterwards, we picture-sorted the visual images that each group remembered seeing.

A musical description of the film goes like this: the scene begins slowly, with Mickey working as an apprentice in a medieval setting. Music is *piano*, using a *legato* tempo. As the sorcerer leaves and Mickey puts on his hat, the music begins to show signs of dissonance as the strings play a little faster. A caesura brings the broom to life.

As Mickey uses magic to gain control of the brooms, the brass and woodwind sections take the shape of the brooms’ movement. The brooms march in time with the *staccato, alla marcia* musical cues. ▶

FIGURE 3

Images recalled at higher levels with music



Next Mickey has an out-of-body experience featuring many *sforzandi* as he dreams of mastering the waves in the sea and the stars in the sky. Cymbal crashes mimic the crashing waves and his arm movements reflect the *sforzandi*. He then begins to lose control and to drown, as the speed of the music increases as does the dissonance. *Glissando* strings heighten the tension.

Finally, the appearance of the sorcerer brings the musical crescendo to a sudden halt by using loud crashes from the percussion section, followed by a caesura. *Sforzandi* are the musical cues followed by the movements of the sorcerer's arms.

As the scene draws to a close, *piano* consonance reappears, as Mickey sheepishly reassumes the role of apprentice. A quick *forte* sequence and a cymbal crash end the piece as the sorcerer sends Mickey out of the room with a mighty sweep of the broom.

Interaction: music and visual

A number of observations can be made about the interaction between music and visuals in this film. The use of *staccato* notes is prevalent in images and scenes that are better recalled. The quickly forgotten images use a more *legato* tempo and are often *piano* or *pianissimo*. Visual peaks follow musical peaks. For example, when music reaches a crescendo or *sforzando* that is used *forte* or *fortissimo*, important changes in action follow. Dissonance in the music often increases as the situation worsens. Consonance

appears when the story reaches a resolution.

For many of us, talking about music in words is like translating a foreign language. But a simple content analysis of the specific images that were remembered at peak levels only when accompanied by music suggests several mechanisms by which the music was working to focus audience attention on the visuals (see Figure 3).

a. During the sequence when the animated broom empties buckets of water into the basin, the ominous melody is established for the first time, foreshadowing trouble, cueing viewers to pay attention because something is going to happen.

b. When Mickey's dream self escapes from his body, the loud music stops abruptly, creating musical white space which again focuses audience attention.

c. As brooms throw increasing amounts of water into the basin, the music is tension-filled; but then brass instruments are introduced to control the melody, provide a musical resolution to the preceding confusion and heighten attention to the visual.

d. An onslaught of brooms tramples Mickey, accompanied by an influx of loud instruments, which amplify the action.

e. A whirlpool engulfs Mickey as a horn's melody is singled out which, in rhythm, speed and texture, mirrors Mickey's whirling motion. Because the images and music are synchronised, the audio movement accents the visual movement and focuses attention.

The results

In general, musical accompaniment increased the amount of visual information processed by the audience (see Figure 2). The average difference in picture recall was small – 64% of images recalled with music compared to 58% without. But, importantly, the number of visual peaks – the beat in the flow of visual attention – nearly doubled as a result of interaction between music and visuals. Given the statistically large importance of peak moments of attention in driving commercial break-through and memorability, this is consistent with the multiplying effect of music on ad performance.

f. As Mickey leaps aboard the Sorcerer's spellbook, thumbing through the pages for help while the brooms rage out of control, the music trills down the scale, which emotionally signals, in its rapid descent, that a crisis is occurring.

g. The sorcerer parts the water with his magical powers, as clashing cymbals mirror the movements of his arms. And the music stops – again creating white space, which heightens attention.

h. Mickey abashedly tries to make amends by indicating his willingness to work while a triangle chimes lightly over subdued music. The change to quiet, almost inaudible, music increases viewer attention.

The rhythm of storytelling connects the past of our experience with our brain's moment-by-moment predictions about the future. As this example illustrates, music working together with moving pictures plays a game with our expectations. Foreshadowing, amplifying, creating empty dramatic space, or 'air', between one moment and the next, and mirroring, or sometimes contradicting, what's on the screen, music draws out just our emotions and puts our imagination to work to find a more pointed interpretation of what's really going on. And, in the case of advertising, this helps audiences find richer meaning in the brand's story. ■



The tempo of the beat in a piece of music is also related to emotions

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2. S Oakes: Evaluating empirical research into music in advertising: a congruity perspective. *Journal of Advertising Research*, Vol. 47, March, 2007.
3. C Young: Fast-working advertising. *Admap* 484, June 2007.
4. D Levitin : *This is Your Brain on Music*. Dutton, New York, 2006.



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