THE STIMULUS PROGRESSION: Muzak

In his *Economic and Philosophical Manuscripts of 1844*, Karl Marx writes, "The forming of the five senses is a labor of the entire history of the world down to the present." The great loser of this history has been aurality. After sight came to the fore in that great visual age, the Enlightenment, aurality's golden age was lost to us forever. That history is silent. Not until Edison's invention of the phonograph in 1877 do we know, with certainty, what sounds our ancestors heard. [1]

In pre-Industrial societies, music ordered the day, providing a continuous conditioning of the environment. Like animals in the wild, individuals sang either individually or in groups. When in groups, singing was always a collective act. Even when one or more particularly talented singers led the tune, everyone in the group contributed to the performance, either as a singer of the narrative, a member of the chorus, or by supporting the rhythm. The rhythm of songs was key to work, coordinating workers' muscles for the repetitive tasks of the day. Songs marked the cyclical time of day and provided the sensation of time passing. Songs commented on the work process, everyday life, or religious themes, thereby establishing a shared bond between co-workers even in the most difficult of situations. Songs sung together at the workplace, at home, and in worship established solid bonds in communities by providing shared experiences and marking the memory of other shared experiences. Music was both a communal activity and, in memorializing events, the beginning of history-writing.

If everyday life was structured by an acoustic rhythm, the repetition of songs was a constant producer of difference. Each time a song was sung, it was original, adapted to the circumstances of the moment. Until the Industrial Revolution, all sounds were unique. Whether they were produced for music, as by-products of human actions, or natural in origin, sounds could not be replicated.

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[1] Karl Marx, *Economic and Philosophic Manuscripts of 1844* (New York: International, 1968), 140-141.

The everyday acoustic environment was not, however, a merely temporal activity. It was also spatial, marking out a territory through sound. Music warded off a hostile nature by asserting the presence of humans against the sounds of the wild.

But some sounds could not be tamed. Anthropologists theorize that loud sounds, especially those in the lowest acoustic registers, inspire feelings of awe and dread. Thunder, the ocean, storms, waterfalls, and volcanoes terrified primitive peoples, making them sense that God would soon punish them. Priests and rulers would use church bells, gongs, and the pipe organ to simulate these loud, low-frequency sounds, thereby instilling the sensation that God was present. This sonic God was often not only invisible but also inaudible, produced by infrasonic phenomena. God's infrasonic existence explains why in Judeo-Christian tradition his name is unutterable. Noise, Jacques Attali writes, is capable of disrupting tissues, and carries with it the threat of death. Through harmony, noise can be sublimated. By releasing dissonance, music functions like ritual sacrifice, reproducing the terror of murderous violence, thereby demonstrating how God could redirect destructive forces for mankind's good and, in dissolving the individual in a greater whole, affirms society. [2]

The Industrial Revolution brought radical change to the acoustic landscape of everyday life. Machines on the factory floor produced loud sounds without regard to aesthetics or human comfort. Nor did these new industrial sounds stop at the factory walls: some factories were loud enough to be heard beyond the gates, while trains and later automobiles generated sounds that permeated the city. With machines now the dominant producers of sound, power shifted from the church to capital and the background against which everyday life was lived changed from nature to industry. Workers

had little control over these sounds; they were, in general not participatory, not pleasant, and afforded little variation. Singing was increasingly difficult in this new environment. Industrial machinery created a new rhythm to life. The structure of work in this new situation was also hostile to song. The nineteenth century factory boss and the twentieth century manager replaced the song-leader in the field, but instead of working in concert with their fellows, ordered them around, expecting no response except obedience. In the factory songs of dissatisfaction were not only emotional releases, but could incite revolt as well. Songs commenting on work could not be permitted, and factory owners banned them. Many companies perceived employee-produced music as a distraction from dangerous work with the expensive new machinery. Henry Ford's employees worked in silence. [3]

With capitalism replacing sacred and courtly society, music became autonomous from the sacred. In addition to spreading machine sounds throughout the city, industrialization also allowed the bourgeoisie to amass capital, thereby threatening the cultural exclusivity of the aristocracy. As the newly rich industrialists looked to express their higher cultural standing, they appropriated courtly music for their own entertainment. Music was tied to public architecture and to the metropolis. It is no accident that Garnier's Opéra is the centerpiece of Haussmann's Paris. The musical performance is the center of social life in the City of Light, the place to see and be seen. If the mixing pool of the Opéra's staircase demonstrated a Utopian near-equality—only the Emperor viewed the scene from above—the performance reinforced hierarchy as the seating itself demonstrated social status. The nature of performance changed as well. The rowdy collective audiences of the past were reterritorialized: individuals contemplated the performance in silence, but then united at the end to give their collective verdict through

[2] Jacques Attali, *Noise: The Political Economy of Music* (Minneapolis: University of Minnesota Press, 1985), 26-31.

[3] See Mark M. Smith, ed. *Hearing History. A Reader* (Athens: University of Georgia Press, 2004).

applause. At home, the piano took up residence in the bourgeois household. An instrument of unwieldy size and shape and great expense, it verified the owner's status in society. In the city especially only a well-off person could afford to give such space to music.

Thomas Edison developed the first phonograph in 1877, harnessing sound to play it back from a rotating cylinder. The packaging of Edison's cylinders led consumers to call the new medium "canned music," indicating the new status of music as a commodity. A decade later, Emile Berliner invented the gramophone, which played back sound from a revolving disc. Consumers could, for the first time, purchase and control their audio programming as previously only the aristocracy could do. Fans could listen to their favorite songs repeatedly. The weary worker could relax at home and listen to songs on demand, without expending effort.

In *the Recording Angel*, Evan Eisenberg explains that the gramophone and the phonograph objectified music: reducing it to an accompaniment to a piece of furniture and doing away with the need for a public architectural space for enjoyment of music. Instead of listening to music in an opera house, philharmonic hall, church, or pub, from that point on people listened to objects such as record players and radios. Moreover, the development of the mass-produced record made it possible for individuals to collect music as an object, something to admire on a shelf as much as audibly.

The experience of listening to recorded music is a distinct experience from producing music or going to a concert. The ease of playing it back and the lack of a performer allows the listener to perceive the music through distraction, not through active contemplation. Leaving the room or coughing loudly while music is playing from a record is generally not considered rude as it would be in a live performance. Listening to music in one's own home undid the old experience of communal musical appreciation, the mass distribution of a single, recorded piece allowed dispersed

communities to form around a single performance's appreciation regardless of its original time or location.

The appearance of mass-produced music at the turn of the century came at a moment when leisure time was expanding, thereby posing new problems for the recently invented profession of the manager. For if the factory and office demanded new levels of attention from the worker, they also created new heights of monotony. Both the workday and the workweek shortened so that employees could have time to recover from their dull labors, but leisure time had its own dangers: the working class could fall prey either to destabilizing mass-oriented political forces or to drink and unruly individual behavior. Welfare organizations such as the YMCA sprang up to help workers while corporations created organized activities such as sports and adult education. To teach workers lasting values and make the

workplace more tolerable, some corporations established programs in which workers either listened to or produced approved music. At Frank Lloyd Wright's Larkin Administration Building in Buffalo, a pipe organ and reproducing piano were installed so that musicians could play for the employees. Henry Ford hired the Detroit Symphony to play for his employees several times a year. Department stores held morning sing-alongs in order to instill politeness in their workers. All this took time out from leisure and allowed a conditioning of the workers' lives. [4]

THE WIRED WIRELESS MASS MEDIUM

The invention of radio at the beginning of the twentieth century further transformed the individual's relationship to the collective by providing a system for instantaneous communication across great distances. During the 1920s, commercial radio broadcasts spread across the air, delivering regular, dependable media experiences that large numbers of individuals could share simultaneously, even while apart. Once purchased, radios assembled these individuals into a mass audience regardless of their literacy or social status, creating the first true mass media. Through the addition of the tuning dial, radio listeners gained the effortless experience of surfing for information across different channels. Listening to the radio was less a private experience enjoyed by an autonomous individual and more a series of individual or small group experiences in which people saw themselves as part of a regionally dispersed body made up of content producers, transmitters, radio signals, receivers, and other listeners whom they never meet personally.

4 On the emergence of the phonograph see Eisenberg, *The Recording Angel* and Jonathan Sterne, *The Audible Past: Cultural Origins of Sound Reproduction* (Durham: Duke University Press, 2003).

Radio, however, still faced many real limitations: it required large and expensive signal towers; its relatively weak transmissions were easily interrupted by local terrain and would often degrade in poor weather conditions; its signals would drop off due to distance. In 1911, General George Owen Squier, then Chief Signal Officer of the U. S. Army Signal Corps, discovered a solution to these problems, identifying an effective means of audio transmission over electrical power lines using the signal multiplexing he developed to carry multiple channels over one wire. In contrast to wireless radio, transmitting music through the system Squier named "wired wireless" ensured higher signal quality regardless of atmospheric or solar conditions. Weary of the privatization that had marred the early development of the telephone industry, Squier patented his discovery in the name of the American public, making the technology available for free use and development across the nation.

Engineers adapted the new technology to create the first countrywide communications network, allowing the simultaneous delivery of programs through utility lines to remote radio transmitting stations. Squier, however, was not satisfied with the commercial structure of radio, in which programs were funded by intrusive commercials. He envisioned a new network supported by a toll that would make unnecessary the commercials and program interruptions that sponsored, and for Squier, corrupted radio. Squier approached the North American Company, then the nation's largest utility company, to transmit music over their lines. North American responded positively and formed Wired Radio, Incorporated. To avoid problems with broadcast rights to music, North American purchased Breitkopf Publications, Inc., a European music-publishing house, and renamed it Associated Music Publishers.

In 1934, North American formed the Muzak Corporation to transmit music directly to homes in Cleveland. Muzak's name was derived from a merger of the word "music" with "Kodak," a highly technological and reputable company. Squier died later that year, never to see the success of his invention.

Success was not, in any case, immediate. The project in Cleveland fell victim to technological troubles and the development of superheterodyne circuits, vacuum tubes, and volume controls gave radios a technological boost while the ongoing Depression encouraged consumers to stick with a one-time radio purchase over the expense of a long-term lease. For their part, radio companies opposed the idea of Muzak competing for their listeners. In 1938, the Federal Communications Commission severely restricted Muzak's market in radio's favor by forbidding the company from using electrical power lines for broadcast directly into the home. Although Squier's inventions of wired wireless and signal multiplexing would later be widely adopted by cable television broadcasters, Muzak would initially be restricted to commercial venues.

Far from limiting the company, forcing Muzak to target commercial venues instead offered it a clearer mission that would give it an advantage over radio in commercial settings. Recorded music is sold with limited rights of use, generally not including public performance. Licenses for playing recorded media in public were a key source of income for the young record industry, but created new difficulties in tracking the number and locations of its playback. In 1914, the American Society of Composers, Artists, and Publishers (ASCAP) was founded, serving as a member-owned organization to fight for fair compensation when recorded work was publicly performed. The first successful lawsuit pursued by ASCAP, against Shanley's Restaurant in New York City, was heard by the United States Supreme Court. Justice Oliver Wendell Holmes explained his judgment in favor of ASCAP by saying "If music did not pay, it would be given up. Whether it pays or not, the purpose of employing it is profit and that is enough."

By 1920, the administration of music rights had become a major business. While radio stations could license programming for personal performance, they could not track where music was being played and take respon-
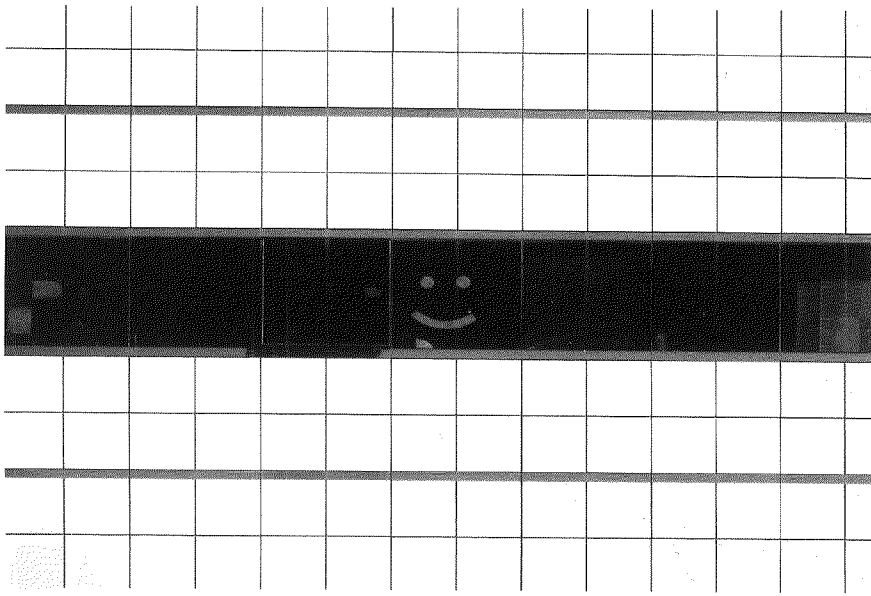

sibility for its licensing. The wired wireless subscription service, however, was ideal for this task. Because every Muzak receiver could be uniquely identified, it was easy for Muzak to track who was using their service and what the service was being used for.

Muzak is the perfect commodity. If, as Guy Debord suggests, the spectacle is capital accumulated to the degree that it becomes image, Muzak took this a step further, making visibility a thing of the past.

Muzak reformed in New York City to cater to the hotel and restaurant market, playing in venues like the Chambord, the Stork Club, and the Waldorf Astoria. This time, audio would be sent to clubs through leased telephone lines rather than electric lines. Speakers would be hidden amongst large plants, thereby making the music seem to come out of nowhere and lending it the name "potted palm" music. With the disappearance of any vis-

Muzak soon proved effective in locations beyond the office or factory floor. As skyscrapers reached ever taller in North American cities, building owners employed Muzak to calm anxious elevator riders, quickly earning its programs the name "elevator music."

New research in the 1930s provided a rationale for Muzak's effects. Named after a study at the Hawthorne Plant of the Western Electric Company in Cicero, Illinois, the Hawthorne Effect explained human relations in the workplace. The study concluded that individuals would be more productive when they knew they were being studied or paid attention to, regardless of the experimental manipulation employed. The workplace, it turned out, was first and foremost a social system made up of interdependent parts. According to this theory, workers would be more influenced by social demands from inside and outside the workplace, by their need for recognition, security, and a sense of belonging, than by the physical environment surrounding them. Being the object of a study made workers feel involved and important. The Hawthorne Effect argued for attention and surveillance instead of architectural or social reforms.

At this time Muzak unreflectively mimicked radio, with a hotel orchestra sound developed by Ben Selvin, a prolific bandleader who had recorded 1,000 records by 1924 and whose Moulin Rouge Orchestra had extensive experience on the air. Named vice-president for recording and programming at the corporation in 1934, Selvin set up Muzak as a radio station, with distinct programs featuring types of music such as marches for breakfast and pipe organs for lunch. Selvin preferred a quiet and restrained sound with few brass instruments and an emphasis on strings. To prevent the music from lulling workers to sleep, Selvin chose popular songs familiar to everyone, thereby keeping workers' attention. Muzak provided a gesture to the workers—deploying the Hawthorne Effect—a constant reminder that the boss was thinking of them.

ible means of sound production, Muzak exceeded the gramophone's capacity to make sound autonomous. In delivering programming to the workplace, Muzak soothed the minds of employees, enhancing their productivity while eliminating the distractions caused by commercials, scripted programs, and other verbal content.

Sending music to the workplace was in keeping with the vision that Squier had left for the company. As Chief Signal Officer of the Army Signal Corps, Squier used music to increase the productivity of his secretaries. Afterwards, he investigated ways that music could recapture the benefits of pre-industrial song, in order to soothe the nerves of employees while increasing their output. The idea of using music to improve an environment was not uncommon by the 1930s, when dentists employed music to augment or even replace anesthetic.
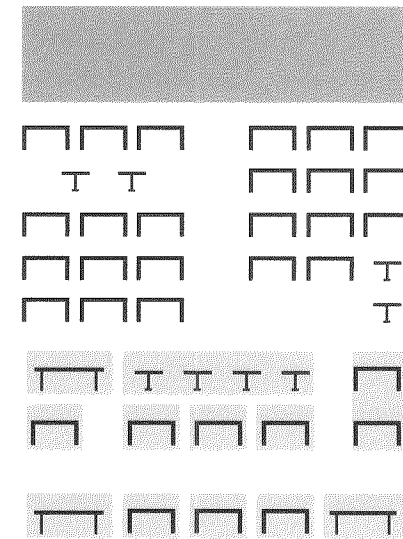
Within the workplace, Muzak distinguished between four basic conditions—public areas, offices, light industrial settings, and heavy industrial settings—each of which they addressed with a different music program. In industrial settings, where loud noises make traditional background music hard to hear, Muzak turned to sounds with a greater penetration, favoring percussion instruments and melodies with more distinct timbres. Even if the factory was loud, the difference in pitch made the music audible. Studies produced by Muzak showed that it reduced absenteeism in the workplace by 88 per cent.

During the Second World War, the military sponsored scientific research and stimulated management techniques to improve productivity, undertaking extensive research into the playing of music in office and factory environments. These studies, often undertaken by employees of Muzak and its competitors, concluded that silence during repetitive tasks led to boredom while talking was too distracting. Music, on the other hand, did not draw the eye's attention away from work, rather it alleviated fatigue arising from monotonous actions.

The general conclusion of these studies suggested that music affects the body physiologically, stimulating breathing, metabolism, muscular energy, pulse, blood pressure, and internal secretions. This fit neatly with the James-Lange theory developed independently by William James and Carl Lange. The James-Lange theory states that the human nervous system creates automatic changes with regard to experiences in the world. Only once one feels a rise in heart rate, an increase in perspiration, dryness of the mouth, and so on does one experience emotion. By affecting the body physiologically, background music could keep workers' nervous systems calm, thereby giving them greater emotional stability during the difficult days of the war.

Starting during the "Baptism by Fire" of the British during 1940, the BBC's "Music While You Work" program broadcast music made by two live bands to factories to soothe workers returning to work after nights of bombardment, thereby distracting them from dwelling on their predicament. The success was noted in Britain and the United States. Soon after, music was made mandatory for all British war workers. By war's end some 5 million British workers listened to "Music While You Work." By 1943, some 6 million American workers listened to music in the factory.

After the war, corporations continued to be interested in using music to improve productivity. At Muzak, company researchers who had been involved in wartime research came to the conclusion that in addition to the vague increase in productivity that music in the workplace generated through the Hawthorne Effect, the James-Lange theory suggested that music could more deliberately affect the changing attention levels of workers throughout the day to maintain a steady level of productivity.

While Taylorist work practices streamlined industrial manufacturing and office work, they also made these jobs even more monotonous. With-

out direct supervision, the fatigue and boredom brought about by repetitive tasks could quickly undo the very advances that these new practices hoped to provide. Muzak researchers concluded that varying the tempo of music played to workers throughout the workday was one way of fighting fatigue.

For this they turned to another fundamental observation of modern industrial psychology, the Yerkes-Dodson Law, formulated by Robert M. Yerkes and John D. Dodson in 1908. According to the Yerkes-Dodson Law, optimal performance is attained with a median level of arousal. Too much arousal distracts the worker while too little leads to inertia. The sources of arousal in the office environment can take many forms, and include negative stimuli like stress and anxiety as well as pleasure and comfort or even, as the Hawthorne Effect proved, the act of scientific monitoring itself. The key isn't each moment of arousal itself, but the flow from one moment to the next, and the variation of arousal types. Muzak researchers concluded that since complex work is more engaging, it requires less distraction from background music while simple work, being less arousing, requires more complex music.

Whatever the workplace environment, Muzak set out to maintain a median level of arousal. Researchers observed natural levels of arousal rise and fall throughout the day as well as over fifteen minute cyclical periods. In response, Muzak arranged programs according to a "Stimulus Progression," varying musical energy levels over fifteen-minute segments followed by either thirty-second or fifteen-minute long periods of silence, depending on the subscriber's desire. The length of the Stimulus Progression enhanced productivity by creating distinctly delimited breaks in work activity.

The Stimulus Progression itself was based on Muzak's analysis of its songs for their emotional content and energy levels. Factoring in tempo, type of music, instruments employed, and the size of orchestra, Muzak determined a stimulus value for each song. By the 1950s, Muzak would modulate its level of stimulus during the day to offset decreases in worker efficiency during mid-

morning and mid-afternoon slumps. The order of the Stimulus Progression was crucial: studies showed that played backwards, it would put listeners to sleep.

The Stimulus Progression was based on the human heartbeat, an average of 72 beats per minute at rest. Playing music faster stimulated listeners, but constantly doing so would make them nervous. Thus, the Stimulus Progression started below 72 bpm, rising during the course of the program. That the Stimulus Progression addressed the heartbeat at rest indicates that Muzak focused not so much on the factory, where workers might exert themselves but on the office, where workers would be sedentary.

Programmed for round-the-clock shifts, Muzak was an endless circadian cycle in which all sounds, including silence, were given space. Eventually, Muzak developed additional programs for use in homes, hospitals, urban environments, government facilities, and outer space. With its omnipresence, Muzak could order our lives temporally. [5]
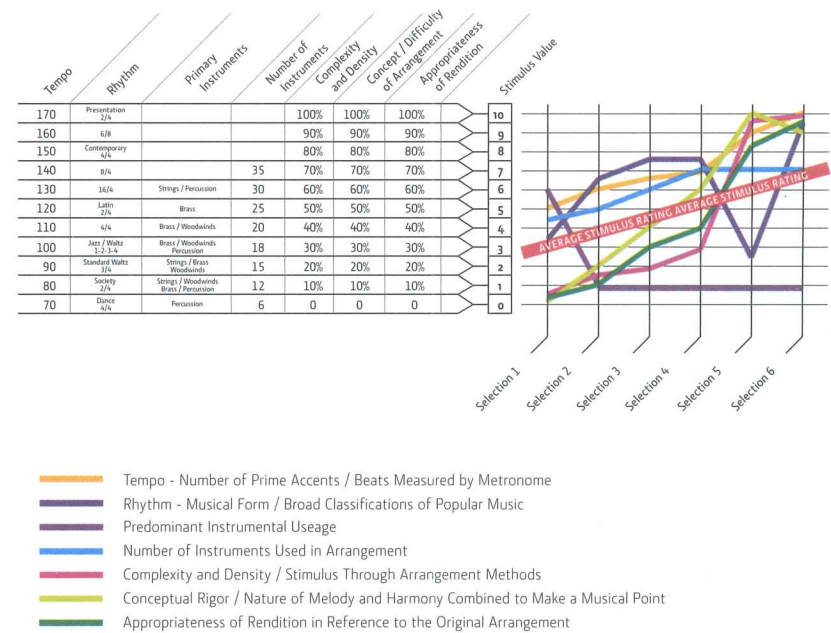
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[5] On the history of Muzak, see Jane Hulting, "Muzak: A Study in Sonic Ideology," (MA thesis, University of Pennsylvania, 1988) and, in particular, Jerri Ann Husch, "Music of the Workplace: A Study of Muzak Culture," (PhD diss., University of Massachusetts, 1984). Stephen H. Barnes, *Muzak, the Hidden Messages in Music: A Social Psychology of Culture*, (Lewiston, NY: E. Mellen Press, 1988) adds little to the Husch work, but is still of interest. Also useful are two popular texts, *Anthony Haden-Guest, The Paradise Program; Travels through Muzak, Hilton, Coca-Cola, Texaco, Walt Disney, and Other World Empires*, (New York,: W. Morrow, 1973) and Joseph Lanza, *Elevator Music: A Surreal History of Muzak, Easy-Listening, and Other Moodsong*, (New York: St. Martin's Press, 1994). There is no room here to discuss Squier's career prior to Muzak, but it is fascinating reading nonetheless. Squier developed military research, multiplexy, and was the second passenger in an airplane. For that see Paul Wilson Clark, Major George Owen Squier: "Military Scientist" (PhD diss., Case Western Reserve University, 1974). Doron K. Antrim, "Music in Industry" *The Musical Quarterly* 29, no. 3 (July 1943), 275-290 provides a first-hand account of the use of music in wartime manufacturing.

'MUZAK FILLS THE DEADLY SILENCES'

Muzak developed during the era of Art Deco architecture and "jazzy" design. Like Art Deco, Muzak was meant to inspire office workers to move along to the increasingly fast pace of the modern corporation. Just as design and architecture evolved from Art Deco to the International Style, Muzak moved to the Stimulus Progression.

The streamlined geometry of Art Deco design attempted to mask the repetitive nature of office work with a representation of the speed and tempo of modern music. But Art Deco failed to keep its promise: fixed in architectural form, it could only represent change, and was not itself capable of changing over time. As workers grew accustomed to Art Deco, they grew bored of it, associating its forms with the overheated exuberance of the 1920s and the desperate salesmanship of the Great Depression. As International Style modern architecture spread in the postwar era, Muzak spread with it. Muzak punctuated activity on the floors of the Johnson Wax Company building, Lever House, the Seagram building, the Chase Manhattan bank building, the Pan Am building, the Sears Tower, the Apollo XI command module and countless other modernist structures. Muzak is the hidden element in every Ezra Stoller photograph of a modernist office interior. By 1950, some 50 million people heard Muzak every year.

Muzak made modernism palatable sonically. The new, hermetically sealed office buildings that the glass curtain wall and postwar air conditioning system permitted were capable of blocking out distracting sounds from outside, but without these sounds, two new conditions emerged. In some areas, office machines, building control systems, and fellow employees became more distracting while in others, you simply had too much quiet making the artificial lack of environmental sound uncomfortably noticeable. Broadcasting Muzak ensured a superior, controlled background condition.

Tempo	Rhythm	Primary Instruments	Number of Instruments	Complexity and Density	Concept / Difficulty of Arrangement	Appropriateness of Rendition	Stimulus Value
170	Presentation 2/4			100%	100%	100%	10
160	6/8			90%	90%	90%	9
150	Contemporary 4/4			80%	80%	80%	8
140	8/4		35	70%	70%	70%	7
130	16/4	Strings / Percussion	30	60%	60%	60%	6
120	Latin 2/4	Brass	25	50%	50%	50%	5
110	4/4	Brass / Woodwinds	20	40%	40%	40%	4
100	Jazz / Waltz 1-2-3-4	Brass / Woodwinds Percussion	18	30%	30%	30%	3
90	Standard Waltz 3/4	Strings / Brass Woodwinds	15	20%	20%	20%	2
80	Society 2/4	Strings / Woodwinds Brass / Percussion	12	10%	10%	10%	1
70	Dance 4/4	Percussion	6	0	0	0	0

Tempo - Number of Prime Accents / Beats Measured by Metronome
Rhythm - Musical Form / Broad Classifications of Popular Music
Predominant Instrumental Useage
Number of Instruments Used in Arrangement
Complexity and Density / Stimulus Through Arrangement Methods
Conceptual Rigor / Nature of Melody and Harmony Combined to Make a Musical Point
Appropriateness of Rendition in Reference to the Original Arrangement

Muzak's slogan during this period was "Muzak fills the deadly silences." But Muzak isn't just invisible to the eyes, in the company's own words, Muzak "is meant to be heard, but not listened to." Aimed at a subliminal level, the immaterial gestures of the Stimulus Progression were neither ornamental nor representational, but rather physiological. Workers did not think about Muzak, they were programmed by it. As soon as Muzak received any requests for songs, they immediately removed them from the library. Like the Fordist worker, Muzak that drew attention to itself was deemed unsuccessful and dismissed.

By filling the deadly silences, Muzak supported modernism and made the impersonality of the Fordist management system more palatable. In bridging melody (individuality) and monotony (the abstract field), Muzak provided an element of accommodation against a background of abstraction, acting as a palliative for both the modern office and for modern architecture. Interactions between individuals that would otherwise have been uncomfortable, such as disciplinary reprimands, terminations, and general office tension could all be alleviated by its soothing background tones.

Composed almost exclusively of love songs stripped of their lyrics, the Stimulus Progression provided a gentle state of erotic arousal throughout the day. Desire, union, and disappointment could all be felt collectively, albeit subconsciously, thereby adding color to the day and blunting the impact of such emotions when real life erupted in the workplace. James Keenen, Ph.D., the Chairman of Muzak's Board of Scientific Advisors concluded that "Muzak promotes the sharing of meaning because it massifies symbolism in which not few but all can participate." Muzak provided the same symbolic experience as pre-industrial song did, but this sharing of meaning happened below the threshold of consciousness.

Whereas in the 1930s Muzak was essentially the same as popular music and radio, by the 1940s it had gone its own way, creating a different level of attention and its own medium. Muzak had pioneered the use of long playing 33 1/3 rpm records in order to create more seamless soundscapes for its functional music. In contrast, RCA Victor's 1949 introduction of the smaller and less expensive 45 rpm disc format allowed popular hits and youth-oriented rock music to be taken almost anywhere and listened to over and over.

Small hand-held personal record players are some of the most important consumer objects of the twentieth century, helping to forge radically new communities among young adults based on consumption and consumer identity, rather than work itself. After a period of economic and technological growth from the first two world wars, a surplus of income allowed teenagers unprecedented freedom from familial restraints and societal mores. Personal record players encouraged listening in private, offering media consumption free from supervision. As the first purely consumer market, youth culture relied heavily on the purchasing and playback of music to express itself and create identity. Young listeners would take apart songs, transcribing lyrics and music and playing the songs themselves. The resulting rock and roll music of the 1950s was the most dramatic singular youth culture movement in history, cutting across class and even chipping away at racial divisions.

But like the prewar modernism of the *avant-garde*, rock and roll was the subject of constant, engaged attention. Muzak, in contrast, corresponded to postwar corporate modernism and was apprehended through distraction. While rock became increasingly abrasive and strove for shock value, Muzak desired not to be heard. Unlike rock, popular with young people but hated by their elders, by the early 1950s Muzak consciously eliminated genres commonly perceived as objectionable.

Theodor W. Adorno may well have outlined the program for postwar Muzak in his 1938 "On the Fetish-Character in Music and the Regression of Listening" when he stated that since contemporary music is "perceived purely as background," it no longer has anything to do with taste: "To like it is almost the same as to recognize it." In a world of completely identical choices, recognition itself has become impossible. Preference, Adorno suggests, "depends merely on biographical details or on the situation in which things are heard." Adorno contends that active listening is at odds with contemporary music as it would reveal the banality of its arrangement. Instead, of attention, Adorno suggests, contemporary music is based on mindless repetition of certain material and performers. [6]

[6] Theodor A. Adorno, "On the Fetish-Character in Music and the Regression of Listening," *Essays on Music* (Berkeley: University of California Press, 2002), 288-317.

Like air-conditioning and fluorescent lighting, Muzak flourished as an acclimatization technology for the extreme environment of the skyscraper. Soon, however, it undid its host structure. Muzak made vast, horizontal interior spaces, previously usable only for warehouses, habitable by covering up the noise that would build up in large floorplates. The lower costs of building these new, flat structures in less expensive suburban locations and the growing efficiency of the same data communication technologies that Muzak itself employed soon made tall buildings obsolete.

The development of cybernetic theories after the war transformed management structures and made the office floor a source for innovation and positive change. Having learned from the Hawthorne Effect, managers no longer acted as overseers trying to keep employees from wasting time and becoming distracted from their tasks and instead encouraged employees to take on greater responsibility for themselves and their own positions within the corporation. In order for employees to share information and expertise, social interaction became crucial and open environments replaced closed offices and executive floors. L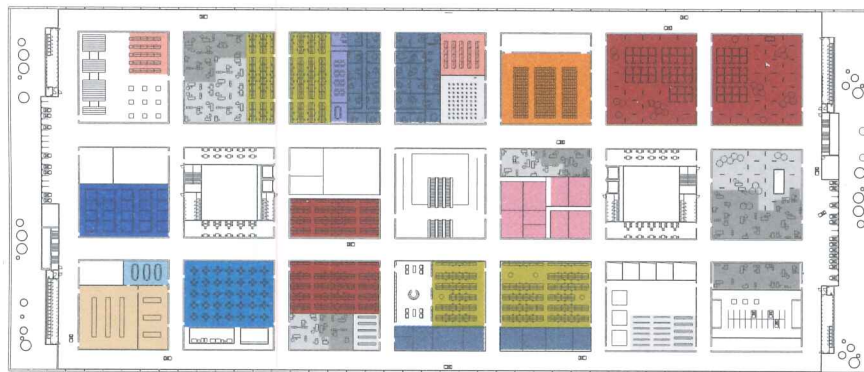arge interiors facilitated greater freedom of communication. In particular, the open plans and horizontal methods of organization developed by proponents of Büro Landschaft became a major aspect of both late modern architecture and management strategy.
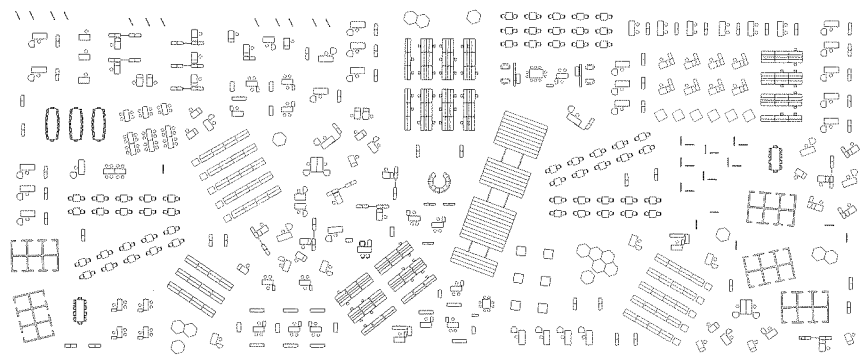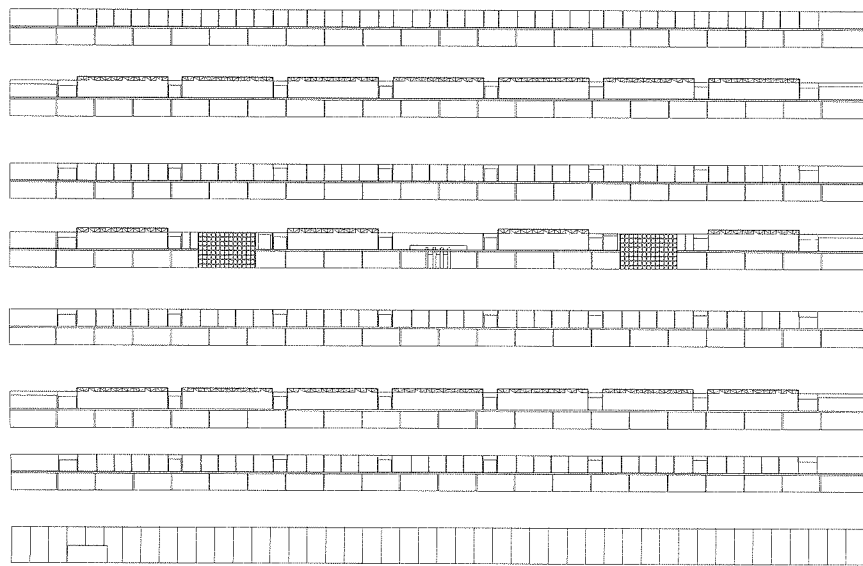
Open plans eliminated walls completely or replaced them with partitions to allow for greater flexibility in programme and increased interaction among employees. This openness, however, also enables the unimpeded circulation of unpleasant background noise as well, including the distracting sounds of office machines, ventilation systems, coworkers, and exterior traffic. Muzak masked these background sounds, helping employees and customers focus on messages and sounds that matter while adding a layer of sensory engagement to an otherwise blank architecture.

The horizontality of the open plan is the very basis of contemporary society. It enables fluid structures that can more effectively respond to changing situations. In this condition, Muzak's ability to structure an environment invisibly offers a model for control. In his "Postscript on the Societies of Control," Gilles Deleuze traces the transition from a society of discipline to a society of control. As both Bataille and Foucault point out, architecture was the instrument for discipline and order throughout the eighteenth and nineteenth centuries. Devices for creating enclosure and allowing for the supervision of many workers by a few managers, buildings structured society. By the middle of the twentieth century, however, this model no longer held power. In place of the 'molds' made by enclosures, Deleuze suggests that we are dominated by subtle modulations. No longer driven by fear, work is now based on identifying with, and entering, the flow. The Stimulus Progression ensured the success of modulation in the workplace. [7]

7 Deleuze, "Postscript on the Societies of Control," 3-7.

Muzak now faces individuals with a changed sensorium. The constant flow of changes across society has made us less responsive to any particular change. Over time, our sensorium has grown more able to tolerate the shock of the new. Once shocking, both skyscrapers and sprawl have become everyday. This condition is also evidenced by changes in our relationship to music. While Elvis was radical in the 1950s, he is background today. The speed by which we assimilate newness in musical culture has increased greatly over the last twenty years. Played over and over, "God Save the Queen" and "Like A Virgin" have become tunes we hum along with absent-mindedly, their radical message sublimated. These popular hits work the same way that Muzak's earlier instrumentals did, acting as a stimulating but blank texture within the empty spaces of work and consumption.

When present, emotion becomes sublimated into affect that can be turned on and off at will. Violently rejecting the hippie ethic of free love and peace to the world, Punk rock was the last musical or cultural movement that presented an alternative emotion. By the late 1970s, New Wave had finished with emotion altogether, partly because new amplification technology made it no longer necessary as a means of reaching audiences (it is no accident that the Cars were the loudest band of their day). Thus John Lennon's 1970 *Plastic Ono Band* was a raw wound, informed by Arthur Yanov's Primal Scream Therapy in its quest to break through the veneer of rationalism that Fordism created through the aural expression of accumulated pain. In contrast, Tears for Fears' 1983 *the Hurting* addressed the same theme via the inflectionless lines of a synthepop dance song: "Shout, shout/Let it all out/These are the things I can do without/Come on/I'm talking to you/So come on." Ten years later, the commercial acceptance of Kurt Cobain points out how today all resistance, sadness, and pain can be experienced as affect. With Nirvana, alienation was no longer a matter of struggle but rather could be accepted as a mood or intensity. Even prior to Cobain's death in 1994, Muzak, which was based in

Seattle during the decade of the "Seattle Sound," had created an instrumental version of "Smells Like Teen Spirit." Cobain's inheritance, "Emo Rock," reduces emotion to a genre. No longer does music have to be as inflectionless as New Wave. Now it can mime emotion, comforting us with the knowledge that it is just a mood to plug in and out of at will throughout the course of our day.

Always ahead of the curve, Muzak abandoned the Stimulus Progression in favor of "Audio Architecture" in the 1980s. At this point, the amount of stimulation received in the daily environment far exceeded any ability of the engineers at Muzak to modulate such forces. Overstimulated, individuals can no longer be affected by increases in data alone. In response, Muzak's programmers don't style themselves as engineers or scientists. Instead they harness this excess of data to become "Audio Architects," a term that indicates that they construct environments, and that Muzak is as much art as science.

The sensorial overload of contemporary culture means that even original songs are no longer distracting. Today most of Muzak's channels broadcast originals, not reorchestrated versions. The result is that Muzak's audio programming has become even more invisible: if the music is audible, its source is no longer discernible.

The culture industries have made it possible for even the most wild and subversive content to be consumed by everyone. With repeated airplay, song lyrics lose their meaning, turning all music into a background of moods without emotional depth. Today, in a radically segmented demographic market, Muzak's customers can choose from a variety of programs that include all forms of music, picking the channels and moods most appropriate to their audience's needs and can request custom selections designed to enhance their unique brand personality.

For the post-Fordist marketplace, Muzak addresses its audience's emotions, creating moods rather than seeking to manipulate attention. Muzak employs the technique of "Atmospherics" to create a distinct ambient audio environment for a particular retail environment. Through a careful choice of music, together with appropriate selections of colors, furniture, and accessories, a store can conjure the image of an entire lifestyle.
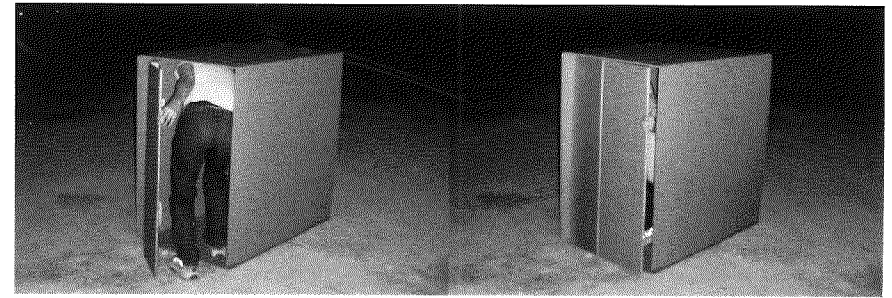
Inside a store, Muzak's cozy, ordered atmospherics offer a contrast to the chaos outside and stimulate the consumer's desire to purchase. Disoriented by noise, the proliferation of signs, and the emptiness and hustle that occurs within the vastness of either the mall or the contemporary city, the individual enters a store seeking solace and emotional comfort within a clearly ordered set of goods and experiences.

Atmospherics also solve an earlier problem that Muzak faced in stores and restaurants. Directed at transient occupants of a space, the old public area Muzak channel had a shorter programming cycle, thereby irritating workers who had to be in the space for the entire day and felt relentlessly

sped up. In contrast, Atmospherics aim at a culture that unites workers and shoppers in a total community. Within the workplace, Muzak not only helps stimulate employees so that they produce more, Atmospherics form a corporate culture that supports group hegemony and shared cultural references among radically different individuals. With Muzak, the ultimate product of the retail or corporate space becomes consumers and workers themselves.

The transition from the Stimulus Progression to Atmospherics echoes the shift from Fordism to post-Fordism. The Stimulus Progression was a manifestation of the Fordist plan: it was temporal, linear, and directed at the individual, who would use it to fine-tune his or her own self. The Stimulus Progression was primarily, although not exclusively, about production. In contrast, Atmospherics are spatial, nonlinear, and self-contained. Atmospherics replace the Stimulus Progression with Quantum Modulation, which does not vary in intensity or mood. On the contrary, under Quantum Modulation, songs are numerically indexed according to criteria such as tempo, color (light or dark) rhythm, popularity and so on to ensure that the same intensity can be maintained even as the music appears to have changed. Atmospherics address individuals as they traverse different ambiances throughout their everyday lives. Unlike the relatively simple goals of the Stimulus Progression, Atmospherics propose that work is a form of consumption and that consumption is a form of work. [8]

THE HUMAN CHAMELEON

Fordist modernism understood that inserting the individual into a larger, overarching plan—be it for a city or a corporation—would appear to give a logical rationale to the process of mass industrialization while providing a theological relief from the uncertainties of modernity, creating a sort of Hawthorne Effect in the public realm. If initially the plan forced individuals to look inward and discipline themselves, the need for constant adjustment and better guidance led Fordist modernism to more explicitly guide individuals from outside. Through the Stimulus Progression, Muzak was an early form of such human programming. Turning to the background condition instead of plans is a more contemporary approach that does away with the need to guide individuals directly.

For the contemporary world, the plan, which addresses the individual as an individual, is too direct. We do not mean to suggest that Althusser's idea that ideology interpellates the individual was wrong, only that individuals are increasingly dissolving and that interpellation is the last thing that power needs. On the contrary, both plan and ideology are obsolete. The background condition eschews any form of top-down control. Background conditions are passively effective, they simply offer individuals the seductive freedom to join in and become a part of something greater instead of actively demanding allegiance.
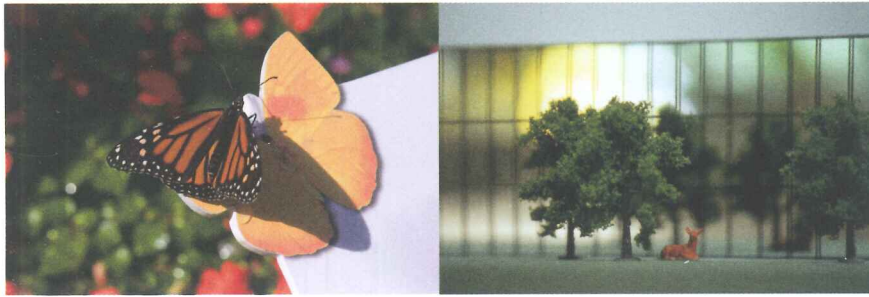
[8] More information on the recent history of Muzak can be found in Jonathan Sterne, "Sounds Like the Mall of America: Programmed Music and the Architectonics of Commercial Space," *Ethnomusicology* 41, no. 1 (Winter, 1997): 22-50, as well as in David Owen, "The Soundtrack of Your Life: Muzak in the Realm of Retail Theater," *New Yorker*, April 10, 2006, 66-71 and on the corporation's Web site, http://www.muzak.com.

In "Mimicry and Legendary Psychasthenia," Roger Caillois observes how the process of mimicry amongst animals and insects is not so much a defensive measure as an overwhelming drive. The Phyllia, for example, looks like a leaf so much that it is prone to eating its own kind. But mimicry is not necessary for many insects, who have other defenses or are inedible. Instead, Caillois observes an "instinct of renunciation" that leads creatures to a reduced form of existence in which they lose their distinction from the world and give up consciousness and feeling. Caillois concludes that in our world space is far more complex: the subject is undermined within these spaces from the start. [9]

With the Stimulus Progression abandoned for Atmospherics, and the plan replaced by the background, the individual becomes a human chameleon, lacking either strong sense of self or a guiding plan, but instead constantly looking outward for social cues, seeking an appropriate background condition to settle upon so as to comfortably lose distinction from the world.

Today, difference itself has attained its own level of banality and acceptance. Ever since Marlo Thomas and Steve Jobs, the media machine ritualistically admonishes us to "Be Yourself" and "Think Different" to the point that we cannot understand what is genuine difference and what is contrived for

[9] Roger Callois, "Mimicry and Legendary Psychasthenia" *October* 31 (Winter, 1984): 16-32.

the sake of appearance. Such difference for its own sake is akin to Internet porn: an endless proliferation of images, each meant to arouse and titillate more than the others. Although in the early twentieth century the individual still feared reification, or being turned into a thing by the Fordist system, the human chameleon finds that identifying with the system of objects or images is easy. The human chameleon seeks cues from things as well as from other beings. If not a Mies chair or Karim Rashid, then perhaps something from Pier 1 imports or Pottery Barn will do.

Unable to find progress or direction, the human chameleon follows Freud's Pleasure Principle, seeking to blend in to its surroundings but, when that gets to be too much, breaks with them and seeks out a new environment to identify with. This can happen at various scales. We can choose our citizenship, our religion, our career, our sexual practices, even our gender. We can identify with our diverse friends, family members, ad models, television actors, serial killers, porn stars, cartoon characters such as Dilbert, and Internet avatars at will. We find pleasure in the process of identification as we see others with the same desires we have. We are less and less distinct individuals and more and more surfers on a wave of mass subjectivities held by many people all at once. In order to function within the contemporary city, we have all become human chameleons without a sense of home. Beyond merely moving from place to place, we move from self to self according to the social conditions we find ourselves in.

As the most visible products of society that literally shaped our environment, buildings have always provided social cues. Architecture creates group relationships by articulating moods and milieus within the ubiquitous horizontality of the contemporary urban realm. In the continuous construction of posturbanity, architecture now takes on the same role that Muzak played within the office block. It adds color to our lives. Sometimes it is fast, sometimes it is slow. On rare, special occasions, it is engaging, more often it is banal and back-

ground. Architectural gestures that signal "individuality," such as those of Art Deco, postmodernism, or deconstructivism require difference or shock-value in order to be effective. None of these gestures can be sustained indefinitely. Instead, individual works of architecture now become examples of Atmospherics: a relationship between emotional forms whereby a sense of movement, from effect to effect, is generated for the multitude to experience. Stimulus Progression is replaced by Quantum Modulation. We no longer change to create growth and make progress, but to make one day progress differently than the others. The variation of stimuli within the built environment helps us to remain engaged with the world by adjusting to constant change.

Architecture first fully realizes its potential with the mirror glass curtain wall building, developed in the 1970s. The reflections of the structure's surroundings in the surface create a façade of infinite variation while the disappearance of clearly defined window openings replaces the bourgeois notion of the individual with a limitless free space organized solely by a grid. Transparency is replaced not with opacity but with the perpetual flux of the world itself.

Just as Muzak ordered the background condition of the late modern office building, it now makes possible the contemporary condition in which the city becomes a background condition, rendering the delirious vertical expressiveness of the skyscraper obsolete. Today contemporary culture can absorb any content while posturbanity can absorb any amount of difference. Just as the horizontal office building made obsolete the skyscraper, new telecommunications technology—cell phones, email, and instant messaging—undid the need for the horizontal world of office landscape. Physical boundaries no longer impede communication and open space no longer enables it.

Instead, office plans merely become infill, endlessly adapting to real estate footprints. Previously a marker of difference and visibility, architecture is now a background condition. But architecture does not merely go away, it is transformed. Every gesture and emotion produced through architectural form becomes a variation along a Stimulus Progression deployed throughout the city. Minimalism, the Blob, and the Spanish Revival seamlessly coexist in the city without qualities.

In the absence of real public spaces and collective icons, empty visual markers are developed to signify the presence of culture within a city. A tacit agreement has been reached between developers and urban planners: cutting edge concert halls and museums, McMansions, historic districts, and limitless sprawl co-exist merrily in the contemporary city. [10] This urban condition makes possible the necessary illusion that individuation and autonomy remain options even as society continues to move toward immaterial culture.

In 1977 Jacques Attali wrote: "No organizing society can exist without structuring differences at its core. No market economy can develop without erasing those differences in mass-production. The self-destruction of capitalism lies in this contradiction, in the fact that music leads a deafening life: an instrument of differentiation, it has become a locus of repetition." [11] Twenty years later, we are deep in the "crisis of proliferation" he predicted. As the lessons of industrial psychology and Muzak suggest, even meaningless change and variation make us feel like someone or something is responding to us, filling the deadly silence of the city with a form of simulated interaction. Likewise, contemporary architecture creates a catalogue of prefigured affective conditions that allow for variation while accepting that mass difference is a fundamental requirement for living with total universalization. Deleuze's idea of difference in repetition now becomes the prime operating principle for capital. [12]

[10] Kazys Varnelis, "Cathedrals of the Culture Industry," *Forum Annual*, November 2004, 35-40.

[11] Attali, 5.

[12] Gilles Deleuze, *Difference and Repetition*, (New York: Columbia University Press, 1994).