INTERLUDE

Routines can make life more predictable--and meaningful. Whether going on a daily walk, keeping a set dinner hour, or holding a weekly family night, routines bring regularity and security to our lives. When different and demanding schedules seem to pull us apart, well-established and purposeful rituals bring us back together.

The power of routine is evidenced all around us. One study of National Merit Scholarship finalists found that the only factor that these high achievers had in common was that they ate dinner with their families each night. Simplistic though this formula for success may sound, its implications are telling. Such families who consistently eat together do so as a means of exchanging ideas, sharing feelings, and acquiring support. If not, their shared dinner hour would be a meaningless and easily forgotten rut--not the purposeful and enriching routine it can prove to be.

A rut is different from a routine. Ruts are mindless practices, ineffective habits, procedures without purpose. And the regularity they breed can be destructive. Repetition for its own sake is not beneficial, but the repetition of significant routines gives our life more reliable rhythm--something to come back to. . . .

As Sir William Osler explained: "Nothing will sustain you more potently than the power to recognize in your humdrum routine. . .the true poetry of life."

-Lloyd B. Newell, "The Power of Routine," Music and the Spoken Word (a broadcast of the Church of Jesus Christ of Latter-Day Saints)

The same is true of order. It, like cleanliness, applies solely to the works of man. But whereas cleanliness is not to be expected in nature, order, on the contrary, has been imitated from her. Man's observations of the great astronomical regularities not only furnished him with a model for introducing order into his life, but gave him the first points of departure for doing so. Order is a kind of compulsion to repeat which, when a regulation has been laid down once and for all, decides when, where and how a thing shall be done, so that in every similar circumstance one is spared hesitation and indecision. The benefits of order are incontestable. It enables men to use space and time to the best advantage, while conserving their psychical forces. We should have a right to expect that order would have taken its place in human activities from the start and without difficulty; and we may well wonder that this has not happened--that, on the contrary, human beings exhibit an inborn tendency to carelessness, irregularity and unreliability in their work, and that a laborious training is needed before they learn to follow the example of their celestial models.

-Sigmund Freud, Civilization and Its Discontents (46-47)

When I was a little girl in grade school, when I was in second or third or fourth grade in grade school in Detroit one of the trips that we always took was to the Rouge plant, to the assembly line in Rouge and we would walk on a catwalk, some kind of catwalk over the assembly line so that we looked down on the workers that were working and they did the same thing over and over and over again and to see it from on top looking down was a sort of a strange feeling because in a way they weren't, they looked more like automatons or marionettes than real people and yet we knew they were people but they would, that even their arm motions would be exactly the same over and over. It was like, it really was like a human machine I think. That's what it seemed like to us.

-Sally Booth, Detroit resident interviewed in The Great Depression

DISCIPLINE

> Here is the mystery: If the rhythm is right, if the translation between inner mood and drum membrane is perfect, then you know it instantly. Ahhhh, you say, this goes with my body tempo, this relates to how I feel today, how fast my heart is beating, what my thoughts are, what my hands feel like.
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> When the rhythm is right you feel it with all your senses; it's in your mind, in your body, in both places. The head of the drum vibrates as the stick strikes it. The physical feedback is almost instantaneous, rushing along your arms, filling your ears. A feeling not unlike trust settles over you as you give yourself to the rhythm. You don't fight it, but instead allow yourself to be propelled by this insistent but friendly feeling. All sense of the present moment disappears, the normal categories of time become meaningless.
>
> Your mind is turned off, your judgment wholly emotional. Your emotions seem to stream down your arms and legs and out the mouth of the drum; you feel light, gravityless, your arms feel like feathers. You fly like a bird. When the rhythm is right. (Hart, Drumming 117-118)

This description goes a long way in helping to explain why, in tracing the history of the drum in Western culture, Hart and Stevens also write that "in some sense, as B.C. becomes A.D., we reach a zero point in the written history and in the archeology of the drum in the West, and it will take the next eighteen hundred years for the drum to make a slow recovery" (Drumming 77). Placing the history of the drum and percussion in general beside the religious and intellectual histories of western European culture, it is difficult not to hear them as intimately intertwined.

In the Greece of the last five centuries before Christ, percussive

instruments were strongly associated with the worship of Cybele and Dionysos and the attendant rituals--the bodily, sexual, irrational, inebriated bachanalia. James Blades, in his history of percussion instruments, explains that Grecian cymbals in particular were closely associated with the rites of cults

> inspired by the ancient orgiastic rites of the goddess Cybele, at which. . .priests. . .clashed cymbals to stir emotion in the breasts of Cybele's female supplicants. Similarly, the excitement of the raucous rites connected with the worship of Dionysos was stimulated by the tremendous clashing of cymbals, and further heightened by the beat of the tympanon [a small drum]. (180)

What is striking from a contemporary sensibility, in which the image of the drummer is almost inextricably male, is that the vast majority of representations of drums from this period of Greek civilization indicate female drummers, one notable exception being Eros. The drum was almost exclusively a woman's instrument.[1] This association is consistent with what we know of pre-Islamic drumming in the Middle East (a large influence on Greek culture and music). The drum as a female instrument continued into Roman culture, along with the associations between percussion and the cults of Cybele and Dionysos.[2]

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[1]Listen, for example, to Dionysus calling to the Chorus of drum-carrying Asian women in Euripedes' The Bacchae:

> On, comrades of my progress here! Come, and with your native Phrygian drum--Rhea's drum and mine--pound at the palace doors of Pentheus! Let the city of Thebes behold you, while I return among Cithaeron's forest glens where my Bacchae wait and join their whirling dances. (45)

[2]Historians of music directly contradict one another regarding the role of percussion in other parts of Roman culture, particularly the military.

With the official adoption of Christianity by the Roman empire, music "considered to be mischievous, licentious, and provocative of war" was banned. Certain instruments, notably the drum and the cymbal, were "regarded by the reformers, particularly St. Clement, as the devil's pomposity" (Blades 182). Over the next several centuries the harp, lyre, flute, violin and other "angelic" instruments--tonal, "high," sophisticated, cultured--gained predominance. Rhythm comes to be heard in classic European musicology as "the first and lowest type of music" (from Forsyth and Stanford's 1917 treatise on musicology; quoted in Blades 33). Drums and rhythm were associated with primitive peoples, particularly Africans. This bias was so strong that most European categorizations of musical instruments until the end of the sixteenth century did not include the drum. Sebastian Verdung, writing in 1511, specifically excluded what he termed "rumbling tubs" from his category of musical instruments made of "metal or other resonant material." Of the drum he wrote:

> These are to the taste of such as to cause much unrest in pious old people of the earth, to the sick and weakly, the devout in the cloisters, those who have to read, study, and pray. And I verily believe the Devil must have had the devising and making of them, for there is no pleasure or anything good about them. If hammering and raising a din be music, then coopers and those who make barrels must be musicians; but that is all nonsense. (quoted in Blades 189)

What was it that good Christians had to fear from the drum?

The problem with the drum was not only its association with pagan religions (and women). The drum is a very bodily instrument, felt in and on the body as much as it is heard with the ear and processed by the brain. It is clearly and directly of the earth--material, bodily, "primitive." Blades

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Some indicate no role at all while others credit the drum for the success of Rome's armies (Blades).

and others suspect the origin of the drum to have been "the drum of the earth"--holes in the ground that are beaten with the flat of the hands, thereby causing the cavities to vibrate. Another early percussive instrument was undoubtedly the body itself.

Two strands of thought came together to create the demise of the drum in Western culture: Greek philosophy, particularly platonic idealism, and Christianity. Combined, as with St. Augustine, these create a profound distrust of the body and material existence that manifests itself as an extreme asceticism whose implications remain with us today. In Cognition and Eros, Robin Schott traces the development of ascetic thought from early Greek religious practices through the rationalist philosophy of Kant. She demonstrates a number of points of key relevance to the demonization of the drum. The body was constructed by Plato, Augustine and others as a polluting force that blocks the attainment of rational knowledge or spiritual enlightenment. The body was not only constructed as feminine, but women were seen as more closely tied to their bodies, unable to transcend them (as men sometimes can) and thereby achieve enlightenment. These beliefs and their antecedents manifested themselves as myths such as Pandora's box and the interpretations of the Book of Genesis in which Eve is both seduced by the Devil and seduces the more innocent Adam. Some of the implications: women were declared unable to occupy the role of Plato's philosopher-kings, excluded from the Christian priesthood, and generally marginalized in the dominant intellectual tradition of the West. Sex is a sin and the body must be mastered, strictly disciplined by the will. Pleasure is danger. Women's role in reproduction connects them with death.

Associated with the rites of the Bacchae and older earth-based religions, primarily a woman's instrument, intimately and openly linked to the earth and the body. . .the drum did not have much of a chance in a

cultural context such as Schott describes. As a result, almost two thousand years later Mickey Hart and I can each go to our respective libraries to find walls full of books about the violin or the piano and less than a shelf about the drum. Percussionists in symphony orchestras can sit, hidden in the rear, generally spending their time quietly counting, flipping through pages and pages of pauses in anticipation of a ringing of the triangle, a clashing of the cymbals, a roll of the tympanies. I can go to a performance of my university's award-winning percussion ensemble, excited to hear the drums and the rhythms, only to end up listening to composition after composition played by a team of xylophones. When drums were played, they remained in the background. Not a single composition involved "just" rhythmic instruments.

The salvation of the drum in the West--aside from its undoubted continuance in marginalized, "unofficial" folk musics and ritual--was the military. The Christian knights of the First Crusade discovered the hard way, in encounters with the Saracen armies in Palestine, that drums have a powerful ability both to energize and to control the movements of troops. While Christian troops lost morale when their colors were taken, the "heathens" did so when their drums were captured or otherwise silenced. Rhythmic sound proved more effective than flags and flutes, the favored European military instrument of the day.

Continued conflicts between western Europeans and the Ottoman Empire motivated and expedited the return of the repressed in the form of the barrel, side, and kettle drums from the twelfth century onward. By the end of the seventeenth century, kettledrums (soon to become the tympani) were firmly established as orchestral instruments and were consistently employed by Bach. The acceptance of these instruments in nonmilitary contexts was, however, by no means smooth or speedy, as indicated by the lack of evidence for the presence of the bass drum until the nineteenth

century. Blades indicates that all of these types are directly descended from the drums of the Near and Middle East.

Hart and Stevens write:

> The military preserved the art of the din and nurtured the brotherhood of the drum in our culture. By the time of the Renaissance, the armies of Europe were beginning to work out supple musical languages that would allow them to communicate group information during the battle. The trumpet was the voice of the cavalry, while the drum belonged to the infantry. The ears. . . of the footsoldier listened for changes in rhythm that indicated such things as *march, alarm, approach, assault, battle, retreat,* skirmish. (Drumming 81)

Hart's immediate percussive tradition was the twentieth century North American descendent of military drumming, known as the "rudiments."

> Every modern army developed a drum language--a kind of martial Morse code--to control the flow of troops. . . . The American military drummers developed twenty-six different rudiments, patterns of single and double strokes like the single paradiddle and the long roll. A good military drummer can manipulate the rudiments for hours, creating a soundscape that is simple enough to keep the troops in step yet sufficiently varied so they don't drift off. (51)

After World War II, bored and unemployed GIs directed their masculine, martial energy into drum and bugle corps competitions, of which the rudiments were a crucial element. Hart's father, Lenny, was a national champion of the rudiments. Mickey spent his adolescent years, as well as two years in his mid-twenties, trying to master them--hours and hours of tapping out the beats on a practice pad. Years later, after immersion in the rather different rhythmic traditions of jazz, rock'n'roll and other African-influenced forms, he was able to instantly, automatically produce a rudimentary rhythm at the precise rate of 110 beats per minute. The

rudiments--their very name an indication of the status of rhythm in the dominant strains of Western music--were the closest thing that Hart's "native" (Euro-American) culture offered him as a rhythmic tradition. "The rudiments--precise, controlled--were at heart the opposite of noise" (Hart 133). The drum may have been marginalized, but the disciplinary use of rhythm embodied in the Western military tradition of the drum was anything but marginal.

Music as "Pure Order"

Jacques Attali defines music as the imposition of order onto noise, "as noise given form according to a code" (25). The kind of order--and hence what will count as "music"--varies from one culture to another, from one social formation to another. For Attali, the order present in music is intimately related to the larger social order, such that the connection between music and power is an ever-present theme. Music both represents and enacts the imposition of order, the channeling of human energies and drives, and is therefore a tool for maintaining a social formation. Attali writes:

> Listening to music is listening to all noise, realizing that its appropriation and control is a reflection of power, that it is essentially political. . . . More than colors and forms, it is sounds and their arrangements that fashion societies. With noise is born disorder and its opposite: the world. With music is born power and its opposite: subversion. . . . All music, any organization of sound is then a tool for the creation or consolidation of a community, of a totality. (6)

The basic message of music, according to Attali, is that order and harmony exist, while any particular music either affirms the status quo or subverts it through the production of "noise." Plato, for example, wrote in the Republic that "to change to a new kind of music is a thing we must beware

of as risking the whole. For the methods of music cannot be stirred up without great upheavals of social custom and law" (222).[3] In Attali's terms,

> a network can be destroyed by noises that attack and transform it, if the codes in place are unable to normalize or repress them. . . . For despite the death it contains, noise carries order within itself; it carries new information. (33)

In this century, ideologists of the dominant classes reacted with an intense hostility toward popular music forms (re)presenting a different cultural tradition: toward jazz in the 1920s and 30s and rock'n'roll in the 1950s and 60s, to name a few prominent examples.

One of the basic components of a musical order--one of the basic dividing lines between music and noise--is rhythm. The connections between rhythm and power are made evident in a variety of examples. Jane Goodall recalled the chimpanzee who began banging two empty kerosene cans together and within two weeks became the troupe's dominant male (Hart, Drumming). Siegfried Kracauer analyzed how the popularity of chorus lines in the 1920s functioned to make the homologous and repetitive nature of factory work tolerable by transforming it into an aesthetic. During the 1920s, 30s and 40s, numerous studies were undertaken to understand the effects of music on the quality and quantity of factory production and other tasks such as typing (e.g., Kerr). More recently, the producers of muzak have used "applied science" to increase both productivity and consumption and

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[3]As Gilbert Rouget points out, Plato's "music" (mousa) is a broader category than the word denotes for us. Its meanings can include art, science, song, or "persuasive words," depending on the context. However, "music" in the narrower sense is certainly included in his use of the term in this passage, as indicated by the subsequent discussions of acceptable and unacceptable rhythms and instruments.

otherwise control the mood of groups of people. Although other qualities of music (tone, harmony, type of instruments, presence or lack of vocals) are crucial to these uses of "functional music," rhythm is heard as a central component by most analysts and critics. One of the early forms of functional music as a means of top-down control may have been the use of the drum on oar-driven ships, both to set the pace and coordinate the efforts of the rowers.

Entrainment

An important phenomenon occurring in and around rhythmic patterns is entrainment. Christian Huygens formulated the law of entrainment from his observation that two rhythmic patterns or devices (such as two pendulums), when placed in proximity to each other, lock-up: within a very short time their rhythms become synchronized, "entrained." The menstrual cycles of women living in close proximity, for example, often become synchronized (unless, of course, they are regulated by a form of hormonal therapy such as oral contraceptives). The members of Kodo, a Japanese folk arts performing company best known for their drumming, use long-distance running not only to synchronize the various rhythms of the individual (breathing, heartbeat, hands and feet) but to entrain the group into a common rhythm. The proper performance of their complex drum compositions requires that the drummers breathe as one. Early in their relationship, Hart and his percussion partner from the Grateful Dead, Billy Kreutzmann, locked themselves in a room for several days, drumming together almost constantly in order to create a permanent sense of entrainment they could tap into when playing in the future. "It was as if Kreutzmann and I had learned how to synchronize our hearts, how to bond that basic physiological beat, so that. . .there was now a rhythm linking us when we played" (Hart, Drumming 140).

The power of entrainment to channel and coordinate human energies is reflected in the close link between rhythmic music and work. One of Kodo's compositions, for example, is developed from a traditional Japanese fishing song used to synchronize the fishermen's efforts as they pull at oars and haul in their nets. In the Caribbean, groups of African men digging ditches use songs to coordinate the swinging of their hoes, both to avoid injury and to maximize their productivity. On the Hebrides Islands off Scotland, the women of a community manually massage newly-woven wool cloth in order to soften it. Sitting at a table with an unwound bolt of the cloth, they "waulk" the wool, simultaneously massaging and circulating it around the table, synchronizing their collective activity by singing.[4] Although Sebastian Verdung decried as "nonsense" his own sarcastic suggestion that the "if hammering and raising a din [i.e., drumming] be music, then coopers and those who make barrels must be musicians," a Polish woodcutting from 1532 suggests just that. It shows four smiths working together, each striking a common anvil with his own pitched hammer. Throughout the image--on the walls, the window, the anvil stand, the hammers themselves --the carver placed musical notes (reprinted in Hart and Lieberman 49).

Mickey Hart tells two stories about children, entrainment and power. The first took place at a summer camp for underprivileged children from the Oakland ghetto. He brought a truckload of percussion instruments to the camp, set them up, and invited anyone who wished to join him. About 25 kids showed up.

> It's interesting how long it takes people to entrain. These kids locked up after about twenty minutes. They found the groove, and they all knew it. You could see it in their faces as they began

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[4]For a more comprehensive and contextualized analysis of this performative event, see Speer.

> playing louder and harder, the groove drawing them in and hardening. It lasted about an hour. These things have life cycles --they begin, build in intensity, maintain, and then dissipate and dissolve. When it was all over everyone started laughing and clapping. They were celebrating themselves and they were also celebrating the groove. Although they had no words for it, they knew that they had created something that was alive, that had a force of its own, out of nothing but their own shared energy. (Drumming 238)

The second, similar story involves a group of mentally-handicapped children as a part of a program to build self-esteem.

> I'd filled different tables with different instruments, rattles on one table, concussion sticks on another, then demonstrated the sounds of each and let the kids choose the one that most appealed to them. At first they were tentative, almost fearful. But the sight of me, acting crazier than any of them, beating on my hoop drum and making animal yells and obviously having a hell of a good time, overcame their resistance. Within five minutes we were a percussion orchestra; within fifteen minutes we'd entrained. Just a brief linking up, but they all felt it, because they all stopped and looked around bewildered. It was amazing to watch. They went from noisy ecstasy back to their old condition in seconds. They no longer trusted the instruments. (236)

Taken in the context of Attali's argument about music, order and power, these responses take on additional significance. They each represent a partial awareness of the flipsides of rhythm, entrainment, and "organization" in general. One side is communal action, group identification, collective strength. "Get a group of musicians vibrating harmoniously together and you have one of the most powerful emotional experiences on the planet" (Hart 124).

The other side is Attali's sense of music as power, a top-down form of control, Taylorism, Foucault's "discipline": "Thus a new demand appears to

which discipline must respond: to construct a machine whose effect will be maximized by the concerted articulation of the elementary parts of which it is composed" (Discipline 164). The productive body is a disciplined body. While much of Foucault's discussion (and an even greater amount of the discussion of Foucault) focuses on space and the distribution and surveillance of bodies (e.g., the panopticon), he also discusses the central role of time and rhythm in disciplinary technologies. For example, the ordinance of 1776 dictated the "temporal elaboration" of the activity of marching in great detail.

> What the ordinance of 1776 defines is not a time-table--the general framework for an activity; it is rather a collective and obligatory rhythm, imposed from the outside; it is a "programme"; it assures the elaboration of the act itself; it controls its development and its stages from the inside. We have passed from a form of injunction that measured or punctuated gestures to a web that constrains them or sustains them throughout their entire succession. A sort of anatomo-chronological schema of behaviour is defined. The act is broken down into its elements; the position of the body, limbs, articulations is defined; to each movement are assigned a direction, an aptitude, a duration; their order of succession is prescribed. Time penetrates the body and with it all the meticulous controls of power. (Foucault 151-152; emphasis added)

Time is not simply set up as a structure, as in a time-table. In discipline, time invests the body through rhythm and entrainment.

The forms and mechanisms through which the body is disciplined temporally are intimately intertwined with the dominant senses of rhythm. In other words, following Attali, the dominant musical order and various forms of the social order (e.g., the mode of production) will be isomorphic and share similar assumptions. For example, the dominant Western sense of rhythm is that it is composed of equally divided, discrete units of time, as

embodied in the metronome (Elliott). The meter is a uniform and mandatory structure imposed on the musicians: it is something everyone must "get with."[5] Now listen to the following excerpt from Fred Taylor's The Principles of Scientific Management:

> Many people have questioned the accuracy of the statement that first-class workmen can load 47-1/2 tons of pig iron from the ground on to a [rail] car in one day. For those who are skeptical, therefore, the following data are given:
>
> Our experiments indicated the existence of the following law: that a first-class laborer, suited to such work as handling pig iron, could be under load only 42 per cent. of the day. . . .
>
> 47-1/2 long tons equal 106,400 pounds of pig iron per day.
>
> At 92 pounds per pig, equals 1156 pigs per day.
>
> 42 per cent. of a day under load equals 600 minutes; multiplied by 0.42 equals 252 minutes under load.
>
> 252 minutes divided by 1156 pigs equals 0.22 minutes per pig under load.
>
> A pig-iron handler walks on the level at the rate of one foot in 0.006 minutes. The average distance of the piles of pig iron from the car was 36 feet. . . . Practically the men were made to take a rest, generally by sitting down, after loading ten to twenty pigs. This rest was in addition to the time it took them to walk back from the car to the pile. It is likely that many of those who are skeptical about the possibility of loading this amount of pig iron do not realize that while these men were walking back they were entirely free from load, and that therefore their muscles had, during that time, the opportunity for recuperation.
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> If anyone who is interested in these figures will multiply them and divide them, one into the other, in various ways, he will find

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[5]For the sake of (my) convenience, I will often characterize Western music, particularly its conception of rhythm, in ways that could be legitimately criticized as oversimplifications yet simultaneously defended as legitimate generalizations.

that all of the facts stated check up exactly.[6] (60-61)

This is a concrete example not only of how "time penetrates the body" but of a particular sense of time and rhythm: regular, uniform, imposed from above, subject to the laws of nature and mathematics. Among other things, this sensibility transforms the bodies it disciplines into machines. (The first hints of the cyborg, an issue to which I will be returning again and again.)

Music, Technology and the Mode of Production

The particular functions of rhythm, entrainment and music indicate certain continuities--as in the sense of rhythm embodied in the rudiments, military discipline, the western European classical music tradition and the machination of work rhythms. Heard with a different ear, Attali indicates three breaks, three primary stages or networks that music--and hence musical sensibilities and modes of reception--has gone through in the West. These stages are closely linked to the dominant and emergent forms of political economy.

Music, for Attali, originated with ritual sacrifice, wherein violence is channeled and vented through ritual, thereby assuring the continuation of the social order. Music eventually replaces this ritual: noise is murder and music is the sacrifice, the restoration of order. "Noise is a weapon and music, primordially, is the formation, domestication, and ritualization of that weapon as a simulacrum of ritual murder" (24). Music "signifies the channeling of violence and the imaginary, the ritualization of a murder

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[6] I find this last statement fascinating. With his casual flipness, Taylor makes evident the absolutely arbitrary character of what he was trying so hard to prove to be "scientific" and thereby universal and unarguable.

substituted for the general violence, the affirmation that a society is possible if the imaginary of individuals is sublimated" (25-26).

Beginning in the early eighteenth century and coinciding with the spread of capitalism, music ceases to be ritual sacrifice and moves into representation, music as spectacle. The paradigm case of music in this stage is the concert: music is separated from everyday life, commodified, paid for and attended by the bourgeoisie, consumed in silence. The value of music must now be set by an external, arbitrary standard. Exchange becomes a central part of the process and function of music: music becomes "the theatrical representation of a world order, an affirmation of the possibility of harmony in exchange. . . . The concept of representation logically implies that of exchange and harmony" (Attali 57).

> Make people believe. The entire history of tonal music, like that of classical political economy, amounts to an attempt to make people believe in a consensual representation of the world. In order to replace the lost ritualization of the channelization of violence with the spectacle of the absence of violence. In order to stamp upon the spectators the faith that there is harmony in order. In order to etch in their minds the image of the ultimate social cohesion, achieved through commercial exchange and the progress of rational knowledge. (46)

In addition to the implications of commodification, the linking of capitalism and scientific rationality is crucial in this stage. Harmony--the combination and manipulation of tones--became the dominant focus of music. In line with the shift toward science and away from religion, harmony ceased to be evidence of the will of God and instead became "constructed by science, willed by man" (Attali 60). Music became not simply order, but reasoned order. "Reason replaced natural order and appropriated harmony as a tool for power, as proof of the link between well-being and science" (61). Opera became the supreme form of bourgeois

representation. Rhythm receded even further, a necessary but subordinate, rudimentary element for the coordination of the musicians.

Emerging toward the end of the nineteenth century and coming to full bloom in the twentieth, recording and reproduction technologies turned music from representation to repetition. Repetition began as a byproduct of representation; the recording was a means of preserving representation. Soon, however, repetition became the dominant force. With the adoption of recording technology and, subsequently, mass production, music is no longer localized, it is everywhere and nowhere; power becomes "diluted, masked, anonymous" (Attali 88).

> In this network, each spectator has a solitary relation with a material object; the consumption of music is individualized, a simulacrum of ritual sacrifice, a blind spectacle. The network is no longer a form of sociality, an opportunity for spectators to meet and communicate, but rather a tool making the individualized stockpiling of music possible on a huge scale. (32)

We become consumers and stockpilers of music. Music's exchange-value has become completely divorced from its use-value: every LP or cassette or CD costs the same. We stockpile more music than we can listen to. Music becomes background noise:

> It slips into the growing spaces of activity void of meaning and relations, into the organization of our everyday life: in all of the world's hotels, all of the elevators, all of the factories and offices, all of the airplanes, all of the cars, everywhere, it signifies the presence of a power that needs no flag or symbol: musical repetition confirms the presence of repetitive consumption, of the flow of noises as ersatz sociality. (111)

Music silences and isolates us before its endless monologue. "It is no longer a question of making people believe, as it was in representation.

Rather it is a question of Silencing" (121-122).[7]

The Rise of Functional Music

The history of "functional music" or "muzak" begins with recording technology and the beginnings of the network of repetition. Not uncoincidentally, its rise closely parallels the increasing rationalization of production, Taylorism and Fordism, the subjugation or entrainment of the worker's body into the machine, the rhythms of the assembly line and other forms of mass production. A consideration of rhythm in twentieth century North America is inseparable from a consideration of the machine (and therefore from the cyborg as well).

In 1945 the American Association for Applied Psychology published Experiments on the Effects of Music on Factory Production by Willard Kerr, an industrial psychologist employed by RCA. In the short monograph, Kerr reported on two previous experiments and four experiments he conducted concerning the effects of different types and formats of music on both the quality and quantity of output from tasks of "the repetitive manual type" (12). What is striking in this otherwise bland report is that each of the experiments was conducted on women, the groups ranging in size from 12 to 520. Although striking, this is not necessarily surprising: women have long been the primary laborers in such of tasks. The automobile assembly line, while the paradigmatic case of rationalized forms of production, is atypical of Fordist production in its predominant use of men (Blackburn et al.).

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[7]Attali forecasts the rise of a fourth network, "composition." This network will be a key element in understanding of the importance of drumming circles. Composition constitutes the reclamation by the members of a community of the ability to produce their own music. The significance of such a move should become readily evident as I discuss Taylorism and Fordism.

Music was utilized as early as 1910 in typing classes and 1915 in Thomas Edison's factories. Studies on the physiological effects of music were published throughout the 1920s and followed by studies in the 1930s on specific tasks such as typing and factory production. But it took the war to provide the final impetus to the large-scale utilization of music to relieve boredom and increase morale and productivity. By 1942 music was being played over public address systems in war plants around the country, often around the clock (Jones and Schumacher). Soon separate programming was developed for factories and offices.

To understand the significance and function of muzak, particularly in terms of rhythm, it needs to be heard in the context of Taylorism and Fordism. As Joseph Lanza notes:

> This mass dousing of aural cologne was brought to us by the Industrial Revolution. The continuous combinations of generators, ventilation systems and low-frequency electrical lighting made silence an unwelcome anomaly when it existed at all. If Taylorism allowed employers to monitor the lag time between a clerk reaching for his pencil and marking his paper, sound engineers could likewise manufacture their version of the optimum work womb. (43)

Muzak softened the edges of the mechanization and rationalization of the production process while furthering the goals of those very processes (Jones and Schumacher).

Taylorism and Fordism

In his historical analysis of the changing sense of time required by industrial capitalism, E. P. Thompson distinguishes the "task orientation" from "timed labor." Under the task orientation, typical in many preindustrial contexts, the rhythms of work appear to be "natural," motivated by observed necessities: seasonal changes requiring ploughing,

seeding, harvesting; the twice-daily milking of cows; the guarding of sheep from predators; et cetera. However, as soon as someone is employed to do the tasks the attitude toward labor under the task orientation appears wasteful. Under wage labor, time becomes money: having purchased the labor power of a worker, the employer becomes interested in transforming the labor power into actual labor.

Moved into the context of industrial capitalism, this interest in transforming purchased labor power into labor becomes intensified.[8] Richard Edwards identifies this interest as the primary motivation behind capitalist moves to control the workplace, transforming it into a "contested terrain." In early industrial factories, workers continued to work according to their own "irregular" rhythms (e.g., the tradition of "Saint Monday" in Britain: the day is set aside for doing personal business or recovering from a weekend's drinking). Alternatively, they engaged in the "soldiering" (intentional slowing of work) with which Taylor was so obsessed, either because they had already earned enough to get by or because they did not wish to work too fast. The latter would give their employers an excuse to lower the piece-rates or dismiss "unnecessary" workers (i.e., themselves or their friends and neighbors).

Henry Ford nicely summarized the position of the capitalist: "The idea is that a man must not be hurried in his work--he must have every second necessary but not a single unnecessary second" (82). As Foucault put it,

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[8]Even under a piece-rate system, there are still strong motivations to maximize each worker's productivity. Workers may be using machines or other fixed costs (e.g., space in a factory). In order for the maximum profit to be obtained from these capital investments, their efficiency--in other words, their speed--must be maximized.

> Time measured and paid must also be a time without impurities or defects; a time of good quality, throughout which the body is constantly applied to its exercise. Precision and application, are, with regularity, the fundamental virtues of disciplinary time. (Discipline 151)

Labor needed to be squeezed of all its potential and made to fit into the regularized rhythms of industrial production--rhythms relatively divorced from the seasons, weather, traditional holidays, drinking patterns, et cetera--rhythms "without impurities or defects."[9]

Bernard Doray, in his study of Taylorism and Fordism in France, traces the disciplinary technologies utilized to achieve this efficiency and regularity. Initially, upon gathering workers together in manufactories to appropriate their labor, the attempts to regularize work rhythms were of the order of Foucault's "time-tables": external programs arbitrarily

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[9]Thompson explains that

> Puritanism, in its marriage of convenience with industrial capitalism, was the agent which converted men to new valuations of time; which taught children even in their infancy to improve each shining hour; and which saturated men's minds with the *equation, time is money.* (95)

In this way, not only human bodies but minds as well would be integrated with the machine. The diffusion of clocks and watches not only helped synchronize labor to the needs of industrial production; they became a sign of prestige within a new morality. Machine and clock metaphors found their way into the puritan ethic very early, as in Baxter's 1673 statement that "A wise and well skilled Christian should bring his matters into such order. . .as the parts of a clock or other engine, which must all be conjunct, and each right placed (quoted in Thompson 87). Time as money and a machinic sense of time become the bases of a new common sense. Rationalization invaded the private, inner lives of the people far in advance of the overt surveillance of workers' home lives by Ford's "Social Department."

imposed upon the work day and enforced with fines or other punishments. These took the form of establishing the length of the workday, the times work would begin and end, and the fines to be levied for particular violations of the schedule. These fall under Edwards's "simple" form of control, which relies on a personal relationship between employee and employer to ensure compliance or, in larger, more hierarchical factories, punitive measures by foremen.

An important leap in the disciplinary technologies related to work rhythms was the table system. Previously, the production process had remained fairly compact or unified--in other words, workers could generally carry through with most if not all the steps in production and hence still be connected with the results of their labor. They were alienated from their labor in the sense of the owner appropriating part of its value, but not in the sense of being able to see the products of their labor. The table system was the first step in fragmenting production. The production process was divided among, for example, 10 workers sitting along a table. Each worker completes one or a small series of operations and passes the materials to the next person until the product is completed.

The table system introduced two principles into the production process: identification and equivalence. First, a series of tasks are identified, breaking down the production process. Second, each task is made equivalent because it must be carried out in the same time period as each of the others. The differentiation (identification) of tasks allowed for the equivalence (nondifferentiation) of time. The work could now be synchronized. This enhanced the ability of foremen to spot "problems" in the workforce, both in that a worker who worked too slow could easily be identified and that the output of two or more "tables" could be directly compared. The conditions for Taylor's time and motion studies had been established. However, the table system shared with the previous "time-

table" approach the means of enforcement: penalties by the employer or their agents. The enforcement of the rhythms of work was still personalized and therefore readily perceived as arbitrary in its judgments and exercise.

As with the table system, Taylorism instrumentalizes the worker and fragments the production process. The core of Taylorism is not the infamous time and motion studies pioneered by the Gilbreths, but the divorce of knowledge from practice. Throughout The Principles of Scientific Management, Taylor bemoans the fact that most tasks were done according the "rules of thumb"[10] passed down from one generation of workers to another and further developed through the individual worker's experience. "Practically in no instance have they been codified or systematically analyzed or described" (32). Two assumptions enabled the substitution of this "rule of thumb" knowledge with "scientific" knowledge. First, Taylor claimed, common sensically of course, that "there is always one method and one implement which is quicker and better than any of the rest" (25)--Foucault's pure use of time.[11] Second, no matter what the task--from handling pig iron to working with complex metal-cutting machines--the worker best suited to carry out the task in practice is

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[10]Taylor's repeated use of "rule of thumb" is interesting given the history and ideological affiliations of the phrase. In 1866 the legal right of a husband to beat his wife was restricted, giving him the right to beat her "with a stick as large as his finger but not larger than his thumb" (Browne 167). Although Taylor disparaged "rule of thumb" methods in the workplace, the lack of any irony in his use of the term is astounding given the historical proximity of its literal usage. Taylor, I would imagine, favored a somewhat more rational and efficient means of controlling his women folk.

[11]Taylor's emphasis on "the one best way" is a central theme in Banta's interesting and wide-ranging analysis of the role of Taylorism in the twentieth century U.S.

incapable of understanding the science behind the task. The purpose of time and motion studies was to make absolutely uniform the specifics of what was to be done, how the task was to be carried out, how long each movement should take, et cetera. This constituted, according to Taylor, "a far more equal division of the responsibility between the management and the workmen" (26). Under his system, the management would finally be doing their fair share of the work, helping the laborer not only earn more pay but to achieve "the greatest prosperity" that can exist for any individual--"his highest state of efficiency" (11).

According to Edwards, however, Taylorism failed to accomplish the fundamental goal of the capitalist: the transformation of purchased labor power into labor. Workers continued to "soldier" and, quite simply, "fought it [Taylorism] to a standstill" (103). It did, however, introduce the advantages of keeping knowledge about the production process out of the province of the workers. This resulted in the continuation if not an increase in the fragmentation of labor processes under Fordism. As Ford himself put it, "The man who places the part does not fasten it. . . . The man who puts in a bolt does not put on the nut; the man who puts on the nut does not tighten it" (83). The vast majority of work became unskilled and the complete alienation of the laborer from their labor was achieved.

Fordism advanced from the groundwork laid by Taylorism in several ways: increased surveillance and control of workers' behavior outside of work, an awareness of the need to increase wages to create the conditions for mass consumption, increased standardization and interchangeability, et cetera. A simple and accurate, albeit incomplete, description is that Fordism is Taylorism with an assembly line. Taylorism rationalized the labor process and instrumentalized the worker's body but failed to solve the control problem. The assembly line was needed to accomplish that.

Doray explains that the table system imposed a uniform discipline on the

workers yet remained "an expression of living labour": the work originated from the workers, and them alone, albeit under the constraints of punitive discipline.

> With the mechanized assembly line, matters are very different. Its pace is set in advance, and it is external to the workers: it is an expression of a machine-system. From this point of view, the line is far from being an automated handling device; it is part of a homogeneous system, and a means of incorporating the activity of men into that of machines. (65)

An assembly line "gears" living labor to its own rhythms and those rhythms are uniform. Workers must not only work as fast as the line, restrictions on their workspace and movements means that they must also work as slow as the line: only one pace is allowed. The assembly line becomes, in the words of a 1915 book about Ford plants, "a very great improvement. . .an all-around adjustor and equalizer" (quoted in Edwards 118). In Foucault's terms, this form of discipline creates a "body-machine complex" (Discipline 153).

A second implication is that power and control are transferred from the foreman to the line itself. Social violence is displaced into the technological field:

> The line established a technological presumption in favor of the line's work pace. Struggle between workers and bosses over the transformation of labor power into labor was no longer a simple and direct personal confrontation; now the conflict was mediated by the production technology itself. Workers had to oppose the pace of the line, not the (direct) tyranny of their bosses. (Edwards 118)

The means of control is no longer simple--that is, personal--but structural, technical. "Power was made invisible in the structure of the work" (110). This is Attali's repetition: silenced in front of the monologue of mass

production. The worker--at least the part of their body involved in production--is instrumentalized, objectified. The machine "infiltrates the space-time of living labour, reifies it, and incorporates it into its own system" (Doray 82). With the assembly line, the cyborg as a productive entity is born.

Ford commented that "a great business is really too big to be human. It grows so large as to supplant the personality of the man" (263). The reification made so blatant, yet the technological element conveniently left out, Ford has no qualms about making the implications clear: "The organization is so highly specialized and one part is so dependent on another that we could not for a moment consider allowing men to have their own way" (111).[12] Machinic, rhythmic uniformity has been achieved. Humans are mechanized and machines are given life. Both processes are fundamentally (though not solely) rhythmic.

The assembly line is the mechanism by which this was achieved. It is a technology of power--a faceless, decentered power.

> "For us, the line is the boss" (car assembly-line worker). This is because the line is only the external face of the real yoke which remains invisible. Every worker internalizes the speed it sets by internalizing a sequence of mental actions which go hand in hand with the serial operations of the operational cycle. Standardizing this sequence in order to optimize the efficiency of the worker's movements means that the innermost workings of the human body have to be viewed as if they were the workings of a machine. In other words, a technology of the productive human body must be elaborated. (Doray 71; emphasis added)

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[12]In the context of these statements as well as the importance of the clock and watch in the development of the puritan ethic of time, it is of no surprise that one of Ford's earliest interests was tinkering with watches and his first job was repairing them. He reports that in his late teens he possessed 300 watches.

In this instance, as the specific link between muzak and work and the general link between music and order indicate, that "technology" at least partially takes on the form of an aesthetic. Before I take up that idea in greater detail, let me demonstrate how the critiques I have so far elaborated are embodied in Charlie Chaplin's 1936 film Modern Times.

"Modern Times" as Radical Critique

Modern Times is a sustained critique of the industrialization of North America and all that came with it, from the conditions of the workplace and disparities in the distribution of material goods to labor movements and police repression to urbanization and homelessness. The film's ironies are just unstable enough to create room for argument as to whether its politics are "merely" progressive or relatively radical.[13] Take the film's subtitle: "A story of industry, of individual enterprise--humanity crusading in pursuit of happiness." Many read this as well as the film as a whole as a straight forward statement of a romantic humanism that bemoans the crushing of the individual by technology.

Yet the linking in the subtitle of "individual" with "individual enterprise"--and therefore with the ideology that justified the concentration of wealth under industrialization--complicates this view (Maland). In addition, although both Charlie (in his last manifestation as

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[13]The distinction was unimportant to conservatives--either way they were convinced Chaplin was a "parlor pink." For a summary of Chaplin's run-ins with the House Un-American Activities Committee and other events leading up his 1953 move to Switzerland, see Maland. Ironically, while they favored some of his other films and statements, the official Soviet apparatus very much disliked Modern Times--its critique of the rationalization of production is not specific to the capitalist system, after all.

the "little tramp") and the gamin (played by Paulette Goddard) continually strive for happiness, they are thwarted at every turn and, in one scene at least, the ideal middle class life they strive for is strongly parodied. Throughout the film the gamin encourages their collective striving for something better despite each setback, but at the end of the film she has given up. When the tramp encourages her--"Buck up--never say die. We'll get along."--she responds "you betchya" and they walk down the road and away from the city together. At this point, taking their optimism seriously is difficult for it seems inevitable that it will do them no good. At the same time, that utopian impulse, linked with a move out of the city (and presumably into "nature"), is difficult to resist.

In the first 20 minutes of the film, Charlie is a worker at the Electro Steel Corp. who is beset by problems brought about by the assembly line and the unending greed and insensitivity of the corporation's president. Chaplin's economically-underprivileged childhood in London, his own early experiences in the film industry in which actors and directors (he soon became both at Keystone) were pushed to produce a largely improvised one-reel film devoid of plot and character almost every week, and his consistent comedic jabs at authoritative institutions such as the police established a certain credibility with "the people" with whom he was so popular. Although one of the richest men in the country whose life was often framed as a rags-to-riches story that buoyed the dominant ideologies of the time, Chaplin's background, films, and politics indicate a strong (albeit contradictory) organic connection with the conditions of the working classes.

By far the harshest and most unambiguous critiques in the film are those directed toward the mechanization of the workplace.[14] These are also the

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[14]The episode of the recent PBS series The Great Depression regarding Upton Sinclair's "production for use" campaign to become the governor of

most relevant to my discussion about rhythm and industrialization. Modern Times opens with a series of images before focusing specifically on Charlie. During the opening credits the sole image is a close-up of a clock-face with its second hand moving in "real time." After the credits end, the clock image is replaced by what Eisenstein termed an "intellectual montage." The first image in the montage is of sheep crowding together, apparently into some kind of chute. This is followed by a series of shots of crowds of men: coming out of a subway, walking toward and into the factory, punching in, hurrying to their work stations. One of the sheep in the first image is black, a somewhat subtle foreshadowing of Charlie's character in the midst of a blatant yet effective transposition of images. Despite its heavy-handedness, this montage carries with it, intentionally or

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California made a number of interesting connections to these themes. A particular focus of the episode was the role of the conservative and progressive elements of the Hollywood power structure in the campaign. Although not discussed in this episode, Chaplin supported Sinclair's campaign and Sinclair reportedly planned to put Chaplin in charge of film production if he was elected. The conservative forces in Hollywood, headed by the likes of Louis B. Mayer, have been credited with turning the populist tide and defeating Sinclair through the activation of a huge public relations campaign--the first known instance of a formal campaign by a private advertising firm initiated specifically to defeat a political candidate. These conservative forces produced films to buoy support for the Republicans and hired actors to pose as "common people" whose statements were then used in "news" reels to show popular discontent with Sinclair.

In terms of rhythm, the 1934 United Artists film Our Daily Bread idealized cooperatives, the core of Sinclair's plan. Playing off of a "back to the land" sentiment, this film is very rhythmic, promoting the "collective strength" side of entrainment. According to Karen Morley, who played the female lead, the scenes comprising the climax of the film, showing large groups of men acting together--for example, in digging an irrigation ditch --were shot with a metronome ticking in the background. Fearing that the film would increase support for Sinclair's plan, conservative studio chiefs managed to block its release.

not, additional significance. The inspiration for Ford's assembly line was the overhead trolley used by the slaughterhouses in Chicago to carry the animals, strung up by their hind legs while still alive, from one work area to the next. The distinctions between worker and assembly line, worker and object of production (raw to partly finished material) are blurred.

Charlie's job in the factory is to tighten two nuts on each square piece of metal that passes by him on a mechanical line, a task for which he is equipped with two wrenches, one in each hand. Charlie has difficulty keeping up with the pace: distractions such as itching, sneezing and a bee put him behind. When the foreman yells at him to keep up, Charlie appears to want to protest or at least explain the problem but he cannot--because the line does not stop and he would only get further behind.

At one point another worker relieves Charlie so he can go to the bathroom. As he walks to the restroom his body continues to jerk uncontrollably to the rhythm of the line. Later, when the lunch whistle sounds, the line slows and then stops but Charlie (that is, his body) cannot. Conveniently, the president's secretary is walking by; she stops and leans over to tie her shoe: Charlie's wrenches move from the line to the two rows of hexagonal-shaped buttons on her backside. After she leaves, his body continues to jerk out of his control, in time with the now motionless line. The productive body is geared into the machine; the female body is coded as parallel to the objects being produced. The worker's body, the female body and the raw materials are all matter to be appropriated and manipulated. Charlie, significantly, is by far the smallest of the workers in terms of height and weight as well as obvious physical signs of strength. This is one of many ways he will be coded as feminine in the film.

The president sits in his office putting together a jigsaw puzzle and reading the comics. With the aid of a system of surveillance screens he

both watches the activities in the factory and transmits instructions. For example, he sees Charlie in the bathroom sneaking a smoke and yells at him to return to work. Periodically throughout the day he issues orders to increase the speed of the line.

At one point, three men are ushered into the president's office to demonstrate the operation of a newly-invented machine. They set up a phonograph that plays the following speech:

> Good morning my friends. This record comes to you through the Sales Talk Transcription Company, Inc. Your speaker, the mechanical salesman.
>
> May I take the pleasure of introducing Mr. J. Willicomb Billows, the inventor of the Billows Feeding Machine--a practical device which automatically feeds your men while at work. Don't stop for lunch. Be ahead of your competitor. The Billows Feeding Machine will eliminate the lunch hour, increase production and decrease your overhead. Allow us to point out some of the features of this wonderful machine:
>
> -Its beautiful aerodynamic streamline body.
> -Its smoothness of action made silent by our electro-porous metal ball bearings.
> -Let us acquaint you with our automaton soup plate, its compressed air blower--no breath necessary, no energy required to cool the soup.
> -Notice the revolving plate with the automatic food pusher.
> -Observe our countershaft, double-feeding action corn feeder with its synchro-mesh transmission which enables you to shift from high to low gear by the mere tip of the tongue.
> -Then there is the hydro-compressed sterilized mouth wiper. Its factors of control ensure against spots on the shirt front.
>
> These are but a few of the delightful features of the Billows Feeding Machine. Let us demonstrate with one of your workers, for actions speak louder than words.
>
> Remember, if you wish to keep ahead of your competitor, you cannot afford to ignore the importance of the Billows Feeding Machine.

Clearly, this speech parodies and critiques the push to regularize work rhythms--in this case, to avoid the need for breaks to replenish the worker's "energy," a natural and inefficient rhythm (i.e., costly to the capitalist who has purchased the worker's labor power and whose machines sit idle). The demonstration of the Billows Feeding Machine on Charlie points to some additional implications.

Charlie is held in place with a headrest and two sidearms as the machine goes through its paces. At first, the tilting soup bowl and automatic food pusher with rotating plate work fine. Soon, however, the machine becomes increasingly out of control. It spills the bowl of soup on him; they fill the bowl up again only to have the machine spill it on him again. The automatic mouth-wiper begins to slap his face harshly and repeatedly. The corn spins too fast and hits his face. While the machine continues to malfunction the inventor and his assistants work to repair it, resulting in the automatic food-pusher cramming two large metal nuts into Charlie's mouth. Not only does this demonstrate the inhumanity of the inventor and the president through their complete lack of any concern for what is happening to Charlie. (The President's evaluation is a pragmatic "It's no good--it isn't practical.") Charlie, whose body is already entrained to the rhythm and movements required by the line, is further placed within a machine and is then fed machine parts--the very parts (nuts) it is his job to manipulate. The implications of the cyborg come full circle--the machine infiltrates his body both materially (the nuts) and rhythmically (the palsies). This scene goes on far longer than the needs of humor would dictate. The machine continues to slap, hit and otherwise torture Charlie beyond the point at which the gags have achieved their comedic function. The belaboring of the abuse makes clear that this isn't all that funny, much more than a ploy for laughs.

This sense of the body-into-machine, the gearing of the body to the

machine's rhythms and the body's definitive subordination to the machine, is demonstrated in the events of the afternoon. The president has continually ordered the line's speed to be increased until it is at its maximum setting. Charlie eventually goes crazy from the pace of the work --the rhythm pushes him over the edge. In his insanity, he jumps on the line as he continues to tighten the nuts and he enters the interior of the machine. As he goes through the machine's interior gears--literally, he is being "geared to the machine"--he continues to tighten any nuts and bolts within his reach. The other workers reverse the machine and get him out.

Extracted from the machine (at least literally), Charlie continues to tighten anything resembling a nut--the noses of those around him, the breasts of an overweight coworker. At this point, the president's secretary walks by again. She pauses as he stares at her then puts the wrenches to the sides of his head and wags them up and down. Charlie chases after her, apparently to tighten her buttons. Outside the factory, he is distracted by the nuts on a fire hydrant. The secretary escapes but another woman comes walking down the street. She has hexagonal-shaped buttons on her dress, one placed over each breast and two more on her waist. Charlie chases her down the street, but turns and runs when she encounters a police officer.

The cop chases Charlie back into the factory. Although being chased and in an insane state of mind, Charlie stops on the way in to punch his time card. Once back in the working area of the factory, he begins turning knobs, pulling levers and spinning wheels at the control station, creating explosions and otherwise wreaking havoc on the factory. He grabs an oil can with a long spout, wielding it like a sword and squirting people in the face. The workers turn off the line in order to chase him, but he keeps turning it back on so they have to return to their tasks. During these last scenes Charlie dances almost constantly. His rhythmically-induced state of

altered consciousness, his dancing, his sexual desire for women (absent in the rest of the film), his apparent joy in disrupting the rationalized system of production, his placing of the wrenches against his head (horns perhaps?) suggest some kind of modern bachanalia.[15] Eventually an ambulance comes and Charlie is taken to the hospital.

Throughout the film the humor of Charlie's character comes from gags that almost inevitably result in a delay or reversal of the production process. Clearly, in the factory he is an impediment to production. After being released from the hospital, cured of a nervous breakdown, Charlie picks up a red flag that falls off the back of a lumber truck and waves it to get the driver's attention. Before he knows what is happening, Charlie is arrested as the leader of a communist demonstration. In prison, the regularity of the factory is reproduced. Whistles are used to control the movements of the inmates: at the first whistle, the inmates leave their cells, at the second they turn forward, at the third they march in place, at the fourth they begin marching. Similar routines take place when entering the dining area and when leaving and returning to their cells.

Through another series of mishaps involving cocaine and a thwarted prison break, Charlie is rewarded with a comfortable cell, food, newspapers--everything he could want. This is Charlie's ideal: he may be in prison but he has the basic comforts of life without having to work, to participate in economic production and the appropriation of this labor. Unfortunately for him, his good deeds in helping thwart the escape result in his release and a letter of reference to help him get a job. He gets a job at a shipyard, only to "accidentally" launch a half-completed ship. At this

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[15]Several critics read this as an indication of horns, which they further connect, in combination with the dancing, to the god Pan. Bamps and Heyndels, more generally, see Charlie as a signifier of the archaic, a force which disrupts the continuity of the machine, "destabilizes the social totality" and makes visible "the scandal of reification" (121).

point Charlie sets out to intentionally get himself thrown back in prison.

Charlie's desire to return to prison changes upon encountering the gamin. Motherless, her father recently killed by the police during a demonstration by the unemployed, her younger siblings taken away by the juvenile authorities, she instills in him a desire for a better life. Sitting beside a street in the suburbs, they dream of a parodied cross between the middle class ideal and the garden of Eden: apples and grapes available outside every window, a cow that walks up to the back door to be milked, the gamin preparing dinner in the kitchen. Returning from their daydreams, Charlie says "We'll have a home like that even if I have to work for it."

Yet the daydream is somewhat misleading: the gamin is the productive partner in their relationship. Charlie had managed to get them a place to stay and something to eat by using his letter of reference to get a job as a night watchman at a department store. He lets the gamin in, feeds her and puts her to sleep in a bed. Then, when some burglars turn out to be old coworkers, he gets drunk with them. Discovered in the morning, Charlie goes to jail. When he is released, the gamin has found them a run-down shack to live in and she steals food for them to eat. Reading in the newspaper that the factories have reopened, Charlie once again sets off to become economically productive, but a strike is called on the first day and Charlie once again goes to jail because of an accidental incident with the police. Meanwhile, the gamin gets a stable job dancing and waiting tables.

The gender roles are clearly reversed. While Charlie appears feminized in the context of the factory and overall is unable to "bring home the bacon," the gamin is a successful provider. Before meeting up with Charlie, she is seen stealing bananas from a boat at the harbor. She cuts bananas off the bunch and throws them to the waiting children, holding the knife in her teeth in the style of Douglas Fairbanks. She openly laughs at the

incompetence of the men who pursue her, standing with her feet wide apart, defiantly eating a banana. There is also never any indication of a sexual relationship or sexual desire between her and Charlie. Although this could be attributed to her status as a minor, such a reading is contradicted by her dominant role in their relationship.

Later, having achieved stable employment at the cafe, she gets Charlie a job as a singer and waiter, two skills he lacks. Trying to deliver an already late roast duck dinner to a customer, the crowd on the dance floor prevents him from doing so and Charlie once again fails at a job. Later, the gamin helps him rehearse his singing but he is unable to remember the words. She writes them on his cuff, which of course falls off, leading him to make up the words as he goes.

Chaplin decided, against the prevailing sensibility that they were long dead, to make Modern Times a silent picture. He did make a few concessions: Modern Times had sound effects and a small amount of spoken discourse. The latter, however, was employed only when it was electronically mediated (and, in that sense, was a sound effect rather than true dialogue): the president's commands to speed up the line or return to work and the phonographic salespitch for the feeding machine. The exception to this is Charlie's song in the cafe. Yet it is not an exception in that his improvised lyrics are nonsense words, a mishmash of French and English (actually English-derived words made to sound French) that only make sense because of his pantomime. Charlie is a hit with the crowd and the owner is pleased despite his earlier failure as a waiter.

The ironies here abound. Charlie is finally successful at making a legitimate living but his skills are, in a sense, illegitimate: he and the gamin lied about his ability to wait tables and sing. Spoken discourse enters the film but it is necessarily nonauthoritative discourse: it lacks the monologic character of electronic mediation and is "meaningless"

gibberish. He speaks nonsense and is rewarded for it, while at the factory his abnormal behavior earned him the label "crazy." Finally, continuing the pattern of the rest of the film, when Charlie doesn't screw up his job opportunities something else does. The juvenile authorities show up to arrest the gamin so she and Charlie must flee the cafe. As described above, Charlie delivers a short inspirational speech reminiscent of Horatio Alger and he and the gamin walk away from the city to escape the alienation of urban, industrial existence.

A Disciplinary Aesthetics of the Productive Body

Foucault argues that the body lies at the center of modern disciplinary networks. His comments serve both as a review of my analysis thus far and a crucial extension. He points out that the body is not merely the site for punishment:

> the body is also directly involved in a political field; power relations have an immediate hold upon it; they invest it, mark it, train it, torture it, force it to carry out tasks, to perform ceremonies, to emit signs. This political investment of the body is bound up, in accordance with complex reciprocal relations, with its economic use; it is largely as a force of production that the body is invested with relations of power and domination; but, on the other hand, its constitution as labour power is possible only if it is caught up in a system of subjection. . .; the body becomes a useful force only if it is both a productive body and a subjected body. This subjection is not only obtained by instruments of violence or ideology; it can also be direct, physical, pitting force against force, bearing on material elements yet without involving violence; it may be calculated, organized, technically thought out; it may be subtle, make use neither of weapons nor of terror and yet remain of a physical order. (Discipline 25-26)

This notion of a physical discipline that is neither violence nor ideology, coercion nor persuasion, is essential for my understanding of the role of

rhythm, for its nature as a discourse and a form of power.

Antonio Gramsci argues that "a class is dominant in two ways, i.e. 'leading' and 'dominant.' It leads the classes which are its allies, and dominates those which are its enemies" (57n). Leadership is "intellectual and moral" (57)--i.e., ideological. "Domination" is based on "coercive force alone" (276), attained "perhaps even by armed force" (57). It would be overly simplistic to read Gramsci's use of coercion to refer solely to rolling out the tanks, yet quibbling over exactly what Gramsci meant by "coercion" would avoid Foucault's point: "To analyse the political investment of the body and the microphysics of power presupposes, therefore, that one abandons--where power is concerned--the violence-ideology opposition" (Discipline 28). Power is intimately linked with knowledge, and that knowledge is neither a persuasive set of ideas nor an absolute physical force.

> That is to say, there may be a "knowledge" of the body that is not exactly the science of its functioning, and a mastery of its forces that is more than the ability to conquer them: this knowledge and this mastery constitute what might be called the political technology of the body. (26)

These power/knowledge relations "invest human bodies and subjugate them by turning them into objects of knowledge" (28).

Recall some of the ideas covered above. Early studies on functional music were undertaken on almost exclusively female subjects. The essence of Taylorism is the removal of the knowledge regarding production from the workers and locating it with management: knowledge becomes divorced from practice. The mind is removed from the body and the body is objectified, instrumentalized, made an object of knowledge. Remember Taylor's equations concerning the handling of pig iron. The worker is made into a body, a machine.

In short, the worker is feminized. Gramsci points out that "the history of industrialism has always been a continuing struggle. . .against the element of 'animality' in man" (298). In particular, he points to Ford's attempts to discipline the sexual instincts of his workers. While Gramsci does not make this explicit, it is women who have historically been constructed as more closely connected with (their) bodies and, specifically, (their) sexuality; the body and sex are feminine qualities (Schott).[16] Taylorism and Fordism want to make workers into "body-machine complexes"--mindless objects. When possible, they simply hire women (or other "bodies"--immigrants or former slaves).[17] But there is no biological imperative operating here; it is a cultural codification. There is nothing preventing the feminization of (caucasian) male bodies as well, as demonstrated in Modern Times.

Now listen to Gramsci--he gets at least part of this: "The 'aesthetic' ideal of woman oscillates between the conceptions of 'brood mare' and of 'dolly'" (295). In other words, women are valued for their role in

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[16]There is a cluster of meanings here: it is no accident that lower class and non-European peoples are also seen as more bodily and less in control of their sexuality. Are black and working class bodies feminized, are female and working class bodies coded as primitive, are women and people of color classified as essentially manually (re)productive? There is no foundation, though many theorists do posit one of these as a more fundamental framework in the dominant Euro-American culture.

For a discussion of women and Taylorism, see Banta, chapter 5.

[17]Ford was one of the first industrial companies to hire large numbers of African-Americans. As LeRoi Jones explains, working for Ford was a specific motivating factor, a concrete goal for many southern blacks who migrated north after World War One. In Eldridge Cleaver's schema, within the class-divisions of North American society blacks became the "supermasculine menials," the (productive) body. Today, GM and other companies simply move their factories to the bodies, to the "Third World."

reproduction and as objects of beauty. Reproduction here is crucial: not just reproduction of the species, but production ("labor" in both its common senses). This is furthered by the imagery used for this function: brood mare--a horse, a work animal. So the productive and beauty roles for women, seemingly separate or even opposed, are two sides of a coin--they are both productive and aesthetic.

Aesthetics is a form of knowledge. Rationalizing production involves making workers objects of knowledge and this is a feminizing move. With these clusters of concepts in mind, listen to Ford. As a capitalist, he needs to control (the bodies of) his workers, and this is done by making them objects of disciplinary knowledges. In a chapter entitled "The Terror of the Machine" (in which the terror is never directly named or addressed, only implicitly rebutted), Ford writes:

> There are far too many assumptions about what human nature ought to be and not enough research into what it is. Take the assumption that creative work can be undertaken only in the realm of vision. We speak of creative "artists" in music, painting, and the other arts. We seemingly limit the creative functions to productions that may be hung on gallery walls, or played in concert halls, or otherwise displayed where idle and fastidious people gather to admire each other's culture. But if a man wants a field for vital creative work, let him come where he is dealing with higher laws than those of sound, or line, or colour; let him come where he may deal with the laws of personality. We want artists in industrial relationship. We want masters in industrial method --both from the standpoint of the producer and the product. We want those who can mould the political, social, industrial, and moral mass into a sound and shapely whole. (104; emphasis added)

An aesthetics--not just of labor, but of the mass, mass production and mass consumption. Here is how the "house journal" of a French auto company put it in 1954 (the flipside of the cyborg):

> The music sets the steel dancing to its rhythms. With every beat, a machine begins to pulsate, a line starts up hundreds of yards away. The factory is a living organism, and its heart beats at a rhythm of twenty-seven cars an hour. (quoted in Doray 137)

"The logical result of fascism is the introduction of aesthetics into political life" (Benjamin 587).[18] What forms does this introduction take in the context of early- to mid- twentieth century industrial capitalism? Walter Benjamin argued that the

> growing proletarianization of modern man and the increasing formation of the masses are two aspects of the same process.[19] Fascism attempts to organize the newly created proletarian masses without affecting the property structure which the masses strive to eliminate. Fascism sees its salvation in giving the masses not their right, but instead a chance to express themselves. (587)

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[18]This is from the epilogue to "The Work of Art in the Age of Mechanical Reproduction." Recall that Attali's third network is repetition: mass production of music, its unmooring from a specific site (representation), the complete separation of use-value from exchange-value. Attali is getting at the implications of mass production for music as Benjamin was working at the implications of mass production for the visual arts. As Benjamin wrote, "mechanical reproduction emancipates the work of art from its parasitical dependence on ritual" (576). Compare this to Attali's "usage becomes transformed, accessibility replaces the festival. . . . [The work] loses its festive and religious character as a simulacrum of sacrifice" (100). "Music ceases to be a catharsis; it no longer constructs differences" (45). As a result, Attali argues, violence threatens to sweep across the meaninglessness of a repetitive society. War, Benjamin pointed out, is the ultimate fascist aesthetic. Need I mention Ford's antisemitism or Hitler's fondness for quoting Ford's writings?

[19]This parallels the brood mare/dolly distinction: the proletarianization for productive purposes and, as I shall try to demonstrate below, the massification as an aesthetic move.

A specific example of this strategy was analyzed by Siegfried Kracauer. I have been, in a sense, working from the mode of production to understand certain elements of the superstructure (rhythm, muzak, aesthetics); in the "Mass Ornament" (originally published in 1927) Kracauer works from a manifestation in the superstructure to the underlying mode of production. In his terms, "the very unconscious nature of surface manifestations allows for direct access to the underlying meaning of existing conditions" (145). His analysis is of the "Tiller Girls," a revue of female dancers popular in the 1920s.

The Tiller Girls make precise, geometric, nonindividualized movements into an aesthetic. They embody and perpetuate an aesthetic that parallels conditions in the factories of the time, the conditions endured by the workers drawn to these revues or to the movie houses where films of the spectacles were shown. The Tiller Girls "are no longer individual girls, but indissoluble female units whose movements are mathematical demonstrations" (Kracauer 145). Their bodies have been instrumentalized in the creation of the spectacle as the bodies of the workers have been on the assembly line. Their movements are precise, uniform and mathematical, like the pig iron handler whose body is invested with the mathematical computations derived from Taylor's time and motion studies. Rhythm entrains these bodies into a machine-like regularity, a supremely rational aesthetic:

> The ornament. . .must be understood <u>rationally</u>. It consists of degrees and circles like those found in textbooks of Euclidean geometry. Waves and spirals, the elementary structures of physics, are also included; discarded are the proliferations of organic forms and the radiations of spiritual life. Hereafter, the Tiller Girls can no longer be reassembled as human beings. Their mass gymnastics are never performed by whole, autonomous bodies whose contortions would deny rational understanding. (147)

The implications of such a performance are many. The Tiller Girls serve as a reflection of the dominant mode of production that, since it "does not stem purely from nature. . .must destroy the natural organisms which it regards either as a means or as a force of resistance" (Kracauer 147). They are the "aesthetic reflex of the rationality aspired to" by Taylorism and Fordism (148). Further, the Tiller Girls became an international phenomenon with absolute uniformity.

> A system which is indifferent to variations of form leads necessarily to the obliteration of national characteristics and to the fabrication of masses of workers who can be employed and used uniformly throughout the world. (147)

This "fabrication of workers" is the second crucial function of the Tiller Girls. It is the productive aspect of the disciplinary techniques embodied and perpetuated in the form of an aesthetic. This fabrication is accomplished in a number of ways. First, there is the uniformity mentioned above--the obliteration of traditional cultures.[20] Second, the Tiller Girls transform the conditions experienced by workers in the factory--endless repetition, absolute uniformity, a regularity and precision of rhythm and movement, the subordination to a larger whole--into an aesthetic. The conditions of production are thereby made pleasurable (desirable). Third,

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[20]Today, muzak fulfills similar function. The songs of the Muzak corporation alone are estimated to be heard by more than 100 million people in at least 14 countries. Muzak is, according to its literature, "non-verbal symbolism for the common stuff of everyday living in the global village" (quoted in Lanza 46); perhaps it is, as Lanza suggests, "the real world beat" (42). It transmits its uniform, contextless rhythms for workers and consumers around the world as the Tiller Girls did 70 years ago. Only muzak is far more dispersed, further away from the residues of the network of representation.

nature is subjugated into a rational form. Gramsci writes that "the new type of man demanded by the rationalisation of production and work cannot be developed until the sexual instinct has been suitably regulated and until it too has been rationalised" (297). Kracauer claims that the Tiller girls are sexless, without any genuine erotic dimension. Kracauer is right--they represent, however, the displacement of the erotic into a rationalized form. The most obvious feminist critique of a phenomenon like the Tiller Girls would point to the objectification of women's bodies for the male gaze. I would argue that in this context, male spectators--themselves arranged, as Kracauer points out, in "row upon ordered row"--could identify with the dancers, and thus find the spectacle pleasurable precisely because of their common, homologous objectification and instrumentalization. In the Tiller Girls, Ford got his wish: "We want those who can mould the political, social, industrial, and moral mass into a sound and shapely whole" (104).

Jazz

However, as Foucault points out, power relations "are not univocal; they define innumerable points of confrontation, focuses of instability, each of which has its own risks of conflict, of struggles, and of an at least temporary inversion of the power relations" (Discipline 27). Take the case of jazz in the 1920s and 30s. LeRoi Jones indicates that the "jazz age" began in 1920 with the first recording of African-American blues and jazz that began the era of "race records" (99-100). The primary impetus was the commerical possibilities--the profit--in tapping into the rich musical tradition of African-Americans and the new audiences this would open up. Although recorded blues and jazz were therefore coopted, both commerically and culturally, they nonetheless represented the introduction and mass dissemination of a different musical and, importantly, rhythmic sensibility into the larger culture. As Jones explains:

> The most apparent survivals of African music in Afro-American music are its rhythms: not only the seeming emphasis in the African music on rhythmic, rather than melodic or harmonic, qualities, but also the use of polyphonic, or contrapuntal, rhythmic effects. Because of this seeming neglect of harmony and melody, Westerners thought the music "primitive." (25)

Arising from the experience and musical sensibilities of Africans transported into North American slavery and economic exploitation, jazz's sensibility, its will, was perceived as a threat. This different rhythmic sensibility, even if muted due to the assimilation of Western sensibilities and the constraints of commerical recording, contrasted sharply with the uniform and monologic rhythmic sensibility I have been discussing.[21] Critics (intellectuals of the dominant class) linked jazz to crime, suicide, nervousness, "cannibalistic rhythmic orgies" and evil in general. It was African, barbaric, animalistic, even the result of a communist plot to undermine Christian civilization. As one anonymous critic put it, jazz "tends to unseat reason and set passion free" (quoted in Merriam 243). This creates difficulties because, as Gramsci explains, "The exaltation of passion cannot be reconciled with the timed movements of productive motions connected with the most perfect automatism" (305).

Jazz not only introduced a threatening rhythmic sensibility because of the commerical impulse. It also, in a reverse sense from the Tiller Girls, addressed the conditions experienced by many Euro-Americans: "Americans began to realize for the first time that there was a native American music as traditionally wild, happy, disenchanted, and unfettered as it had become fashionable for them to think they themselves had become" (LeRoi Jones

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[21]The contrasts between African and western European rhythmic sensibilities will be developed (and complicated) in detail in the essay "Struggle."

100). The increasing discipline (and thus repression) in production, brought about by Taylorism and Fordism, created a heightened pressure that found its release elsewhere.[22] If not in the Tiller Girls, then perhaps in the somewhat more threatening form of jazz. This reaction against the requirements of the prevailing mode of production provided the basis of jazz's (commerical) appeal. A structure of power, Foucault reminds us, creates the possibilities and conditions for its own resistances.

Muzak

The commercial and "white" versions of jazz to some degree tamed its passions. Muzak completes the taming of jazz or, for that matter, any other popular music form. As a refined version of functional music it regulates and normalizes the rhythms of work in two ways.[23] First, all music translated into muzak is made as bland as possible--it is the wonder bread of music. Muzak is the ultimate in the musical network of repetition: all songs turned into muzak sound the same whatever their original genre. It is anonymous music:

> Muzak's programs, from their inception, consisted of tight rearrangments of standard popular songs as well as classical and light dance music. Care was taken to remove any unique or

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[22]Freud's concerns about the excessive sublimation of the pleasure principle to the reality principle, written in 1929 and published in Civilization and Its Discontents, take on a crucial accent as a response to the rationalization of production and its corollaries: rationalization of the erotic, sublimation of the body's "natural" instincts, et cetera.

[23]"Muzak" is both a generic name for functional music and the corporate name of the dominant dispenser of this "aural cologne," founded in 1922. In the following discussion, it is the Muzak corporation's techniques that are described. I know of no reason to hear their methods as atypical.

> potentially distracting rhythmic, melodic, or harmonic features found in the original versions. Dramatic shifts in volume or tempo were smoothed out. Atonal passages, sudden changes of key, or any features that might startle or confuse potential listeners were eliminated. Improvisation and spontaneity were highly restricted or nonexistent. (Jones and Schumacher 160)

In the words of the chair of the Muzak corporation's scientific advisors, "Muzak promotes the sharing of meaning because it massifies symbolism in which not a few but all can participate" (quoted in Yelanjian 94).

Second, muzak controls the rhythms of work through "stimulus progression." According to one of the Muzak corporation's executives, "We do not sell music; we sell programming." Each tune is assigned a "stimulus value" that numerically indicates the degree to which it is bright and upbeat or slow and mellow. Computers then select a progression of tunes according to the needs of the environment. For example, David O'Neill, a muzak executive, explains that in a workplace

> the current should go against the flow of professional fatigue. When the employee arrives in the morning, he is generally in a good mood, and the music will be calm. Toward ten thirty, he begins to feel a little tired, tense, so we give him a lift with the appropriate music. Toward the middle of the afternoon, he is probably feeling tired again: we wake him up with a rhythmic tune, often faster than the morning's. (quoted in Attali 112)

Edwards, in his discussion of the attempts of employers to transform purchased labor power into labor, points out that nonproduction labor such as paperwork, sales and supervision--what today would be classified as both white and pink collar work--resists the technical control made possible by the assembly line. It can to some degree be routinized, but resists absolute (machine-like) rhythmic uniformity. Muzak, so prominent in office environments, can be seen as a response to this need. It helps

even out the natural, uneven rhythms associated with blood sugar levels, attention spans, and so forth. According to Muzak's own studies, stimulus progression programmed muzak increases productivity by up to 17 percent (Rosenfeld).[24]

Having firmly ensconced itself in the workplace, muzak quickly found its way into the realm of consumption. In restaurants, muzak is programmed according to the meal being served. Rhythmically faster tunes can help speed up customer turnover during peak hours. In supermarkets, slow, easy-listening tunes are played in the aisles to slow customers down. Faster tunes are played in the check-out area to create the illusion of a speedy check-out (Rosenfeld). (This consumer muzak, of course, doubles as workplace muzak for the employees.) In malls and department stores, muzak programming is coordinated with traffic flows, displays, department demographics (e.g., the young men's clothing section), video terminals (often showing music videos), and motion sensors that can trigger the release of aural, visual or olfactory stimuli when someone walks by.

Until the recent introduction of "foreground music" in department stores and other settings, a prime rule of muzak was that it "be heard, not listened to." In addition to its bland nature, this was accomplished by a very low volume. In one study, 29 percent of shoppers leaving a supermarket with muzak flatly denied its presence (Rosenfeld). When people become conscious of muzak they often become annoyed with it. This "subconscious" nature of muzak is not only crucial to its function; it points to a key problem in the treatment of rhythm as a form of discourse.

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[24]To return to the rhythmic context with which I began this essay--the military--much of Muzak's research comes from the U.S. Army (Rosenfeld).

Discourse, Mind and Body

Part of the programming of traditional muzak is the elimination of all lyrics and other vocal elements. In addition to calling greater attention to the muzak, Muzak's Jane Jarvis explains, "The minute you use words you call up contemplative thinking and people begin to have opinions" (quoted in Radano 450). Words would change the context to Burke's realm of action and what is required is the realm of motion. Muzak is an exemplar of the application of behavioral social science, "programming" based on a biological stimulus-response model. By extension, the use of rhythm to discipline bodies can be heard as falling within the same realm. This complicates, from many traditional perspectives, my argument that rhythm is a discourse.

The mind/body split manifests itself (one could say hides itself, though it is so blatant) in a wide variety of social, cultural, epistemological and communicative philosophies. In Plato, of course, it is mirrored in the split between spirit and matter. In Descartes it takes the form of intellection versus sensation. In Gramsci it manifests itself as leadership, which is based in ideology (ideas) and persuasion, versus domination, which is based in physical coercion (incarceration, extermination, et cetera). He, as do many other theorists such as Freud, contrasts human beings' animality and sociality. Animality, sexuality, the instincts are generally constructed as something harnessed and subjugated by the social.

The split takes on another crucial form in marxist theory in general and Gramsci in particular: theory versus practice. This creates the possibility of alienation, wherein my conception of my activity is divorced from the reality of that activity--the world I conceive and the world I enact are different, perhaps contradictory. According to Gramsci, a "critical understanding of self" comes about through an explicit, conscious struggle

"to arrive at the working out at a higher level of one's own conception of reality. . .in which theory and practice will finally be one" (333).

Kenneth Burke's version of the mind/body dualism takes a number of different forms. In putting forth his definition of man as the symbol using animal, he proposes that "some of the motivation must derive from our animality, and some from our symbolicity" (Language 6). In Burke's scheme, symbolicity replaces mind and cognition as well as Plato's spiritual/formal realm. He writes, for example, that "an 'ideology' is like a god coming down to earth, where it will inhabit a place pervaded by its presence. An 'ideology' is like a spirit taking up its abode in a body: it makes that body hop around in certain ways" instead of others (6). Burke's more elaborated and consistent form of the opposition is action versus motion. Motion is the realm of animality, of "sheer physicality," of billiard balls and stimulus-response. The key distinction between it and the realm of action is that symbols make possible choice and therefore ethics (both as a result of the negative). Burke admits that the categories can blur, as in the cases of psychosomatic illness, culturally-induced revulsion toward a certain kind of food, or phenomena such as "voodoo death." In these, he argues, "the realm of the natural. . .is seen to be pervaded, or inspirited, by the realm of the verbal, or symbolic" (Rhetoric 17). In addition, Burke and semiotics both hear language as necessarily composed of both animality and sociality: signifier and signified, expression and meaning.

Where does rhythm fit? Entrainment seems to be "sheer motion," a physical and biological process. Two proximate pendulums do not "choose" to synchronize their movements any more than college roommates "choose" to synchronize their menstrual cycles. Yet rhythm seems to pervade or inspirit, "inhabit" the body as does ideology, making it hop around differently than it would in the presence of another rhythm. On what basis

can ideology and rhythm be distinguished?

Ideologies are systems of meanings for making sense of our conditions of existence. They are composed of signifiers and signifieds. They are terministic screens that affect our perceptions of the world, and thereby our actions. Do rhythms mean? Does the drumbeat used to coordinate marching or rowing mean? Does the metronome's ticking mean? Ideology obtains our consent. Does muzak gain our consent? Not really, at least not through "persuasion" in the conventional sense--but neither does it exactly "coerce." But ideology and rhythm are both a means to reproduce (or transform) a social order.

Burke distinguishes between the scientistic and dramatistic notions of language. The scientistic view hears language as definition, as the representation of a preexisting world. Its primary verb is "to be": propositions such as "it is" or "it is not." The dramatistic view sees language as action. The essence of language is embodied in hortatory statements such as "thou shalt" or "thou shalt not."

Rhythms may or may not be representational. In contrast to the above examples, specific rhythms can have referents: in posession cults a particular deity may be associated with a certain rhythm or in the rudiments a particular drum roll can stand for a military maneuver. These examples, of course, can also be heard dramatistically: as a call to a diety or as a command (the drummer on a galley is called a "hortator"). At a different level, following Attali, any rhythm--as a form of music--is a representation and an enactment of order. No specific referent is required for a rhythm to be "symbolic."

Rhythms are natural and biological as well as symbolic--both in the sense of being representational as well as a form of (ethical) action. They can mean like language does, they can "cause" a stimulus-response chain, they can be hortatory. These three functions may or may not coincide in any

specific rhythmic performance. Sometimes rhythms are discursive, sometimes they are not. Rhythm can be heard as something that simply crosses the lines between these realms or functions, or as something "appropriated" in different ways, infused with a different quality of force. Although those are arguable positions they conveniently avoid the issue: the binary itself.

Following Foucault, I would use rhythm to question the very nature of the violence/ideology opposition, to question our common senses regarding the nature of discourses vis-à-vis the mind/body split. I am not surprised that I have not found many communicative or even cultural and sociological discussions of rhythm (or that those few I have found are only marginally "academic" if they are at all). There are a lot of musicological, literary and physiological discussions of rhythm. These are generally narrow, decontextual, depoliticized technical (formal) treatises. To take rhythm seriously as a sociopolitical, discursive phenomenon means to blur the body/mind, motion/action barrier that we are so willing to name and so terrified to transgress. You study the rhythms of language physiologically and I will study the meanings of language sociologically--but let not the two come together![25]

I suspect rhythm is generally absent from the dominant discourses of rhetoric and communication due to precisely the same motivations that resulted in the banishing of the drum by the Christian West. It is bodily yet affects the mind! It is sensual yet is a form of knowledge! It is of the earth yet moves the spirit! It is primitive yet underlies civilization! It is a

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[25]Julia Kristeva and Roland Barthes are two key exceptions, and there are certainly others. I will return to these two theorists in a later essay, but it is no accident that their theories have not been adopted by mainstream communication theorists and critics or even by many of those on the margins.

necessity we do not want to admit, a power about which we would rather keep quiet (for a multitude of complex and contradictory reasons). We are so afraid of it that we have systematically expunged it from our language along with sound in general. We are of a visual culture.

To discuss rhythm as a discourse is to confuse not only mind and body but a cluster of related structures--holy and mundane, male and female, civilized and primitive, nature and machine. Boundaries would be transgressed, the imagined purity of a realm sullied. It would be cultural miscegenation and blasphemy against (need I say "the platonic"?) tradition. It is to re-call and push to the fore the re-cognition that rhetoric is a harlot after all (or perhaps simply feminine--only a harlot to the extent that all women are seen as such). Dare we embrace that?

"Supposing truth is a woman--what then?" (Nietzsche, Beyond 2)