



CHAPTER 8

THE SOUND OF THE VIOLIN

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SOME INTRODUCTORY REMARKS

What, you may ask, motivates me to choose such an outlandish topic for this paper? The topics respectable in psychology are conventionally standardized, and although ecological and cultural psychology have in recent times introduced the meaning and function of objects into the range of problems the psychologist might consider, the *sound* of a violin would only hesitatingly be claimed to be an object.

Yet, it undoubtedly is the intended result of an action, in other words, it constitutes a *goal*. This would make it relevant to *action theory*, but this relevance might be questioned by its being an ephemeral and certainly not very profitable goal. Yet, such goals confront action theory with particular and challenging difficulties. Actions pursuing goals like eating, clothing, constructing, quarreling and so on could all claim to aim at some specifiable result, useful within some wider context; their motivation can be understood in view of some benefit. But there are actions whose meaning is less obvious: What kind of an action is “contemplating a flower or a landscape,” what is the function of actions like skiing, reading a poem, collecting stamps or Picassos—or of playing music? It is the challenge of

Discovering Cultural Psychology: A Profile and Selected Readings of

Ernest E. Boesch, pp. 177–195

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demonstrating the relevance of action theory even for apparently useless actions which made me consider topics of this kind.

Yet, why choose the violin? I am not a violinist myself, but was a fairly competent flutist; although the questions I want to raise apply also to other musical instruments, I feel that the violin allows most clearly to point out certain phenomena, and having collected a good amount of experience with violinists, I hope to be sufficiently familiar with the features relevant to the intended discussion. However, let me clearly say that this is an essay—it might be a conceptual outline for a research project, but it still lacks confirmation by actual research.

In the following I shall first consider the violin as an object, and more particularly its “phylogenesis,” i.e., its evolution to a “species.” I shall then look at its “ontogenesis,” i.e., how it becomes an instrument to be played. Third, I propose to focus particularly on this strange goal image of the “*beautiful sound*.” These three points will amount to a study of a specific aspect of a “culture-object-subject” relationship, and to finish I shall discuss the relevance of this example for cultural psychology.

The “Phylogenesis” of the Violin

A violin, of course, is an object, but it is an object which in no way can be related to a natural model or antecedent: it is essentially, although consisting of natural materials, a man-made object. As such it has a long history. According to historians the first instruments with strings were of the type being plucked, like the zither or primitive kinds of harps. The bow would have been a later addition. Although the actual origins of these instruments remain unknown, they must have been complex inventions. We may imagine that a primitive hunter noticed the peculiar sound on plucking the string of his bow; another would have observed that strings of different length and tension produce different sounds; playing with such bows, someone would then have found that their sounds could be amplified by connecting the chords with a hollow object, and thus the plucking string instrument would have been invented. Somebody still would have had to discover that stroking a string with a stick or another taut chord allowed to draw out the sound produced by a string to last for a while. These three discoveries, then, were essential to the invention of the violin: the result of different string tensions and lengths, the effect of a resonance body, and the stroking bow.

The result, we can imagine, was a very crude violin, but such instruments still exist and are played in many parts of Asia. Thus, the Siamese *soo uu* still consists only of half a coconut shell covered by a piece of skin to which a simple stick of hardwood is attached, with two strings fitted to

the contraption (the *soo sam sai*, as says its name, has three strings). The *soo duang* and the Chinese *hu* are similarly constructed, but their body (or head) consists of a hollow piece of a large bamboo stem. It is interesting to note that in these instruments (as they are known today) all the essential elements of the more developed violins are already present: the strings are supported by a *bridge*, tightened by *tuning pegs*, the sound box (coconut shell) is pierced by holes, the function of which is similar to our f-holes, and even the internal sound post of the violin (a small inside “pillar” between the upper and lower surface) finds its functional equivalence in the *thuung*, a small weight attached to the skin of the three-stringed *soo* which softens too excessive vibrations. I do not know at which time these elements were added to the primitive instruments, but I am convinced that they did not result from Western models; their presence is much more likely to indicate that controlling the sound led to similar technical solutions.

Historians say that the two types of bow-string instruments known in early Europe were imported from the Near East in the 11th century or before; the first was Arab, called *Rabab*, which engendered the European *Rebec*. It consisted of a sound box of hollowed-out wood covered with parchment; at one end the body was extended to form the neck. It was fitted with one or two strings, and thus was basically similar to the mentioned Far Eastern forms—which, as we have seen, still exist, while the *Rebec* has disappeared.

The second type of instrument imported to Europe is said to be a *fiddle* from Turkistan, consisting of a spade-shaped sound box with added neck, fitted with two to three strings. From these two initial forms historians derive a bewildering range of instruments with different names in spite of apparent similarities, varying in shape, size, and probably in every other detail which can be altered. For the moment let us simply retain that the original instruments from which the violin ultimately developed consisted of some kind of crude sound box with attached shaft and a small number of strings. From these started the search for improvements, lasting for several centuries, experimenting with changes of the sound box, the shaft or neck including the kind and number of strings and their tuning, and the bow, these three elements becoming variously combined “across species.” This long sequence of transformations of the instruments seems to be particular to Europe, and at any rate contrasts strikingly with the Chinese-Siamese violins which, as far as we know, preserved their present forms over centuries.

In this process, of course, much *bricolage* took place, empirical trying out of different woods, their shapes, curves, thickness, the size, place and form of the sound-holes, the kind and location of the inner stabilizers, i.e., the bass bar and the sound post, the glues and lacquers to be used,

the number, material, thickness and tension of strings, form, length, hair and construction of the bow; similarly, various positions for playing the instrument were tried out. By the 17th/18th century this experimentation had apparently about exhausted the available options and became limited to variations in details; from now on the typical violin as we know it, with four strings tuned in fifths (g-d-a-e) remained constant, while the competing forms, mainly the fiddle and the gamba, were abandoned. Of course, this *bricolage* often led to individual solutions—the formulas for glues or lacquers for instance—which the violin-builder tried to keep secret. Of particular interest were the constructions of violin or gamba type instruments of different sizes (resulting in the now standard set of violine, alto, violincello and contra-bass); they made possible to cover the whole tonal range by instruments of similar sound quality and thereby allowed the volume and homogeneity of sound we know from the string orchestra. It seems that this construction in different sizes of similar types of instruments constitutes another particularity of European development.

The progressive construction of the violin, of course, was guided by the available materials on the one hand, and human possibilities of handling on the other. Both, however, were not a priori determining parameters; the materials were tried out and selected, and so were different ways of playing the instrument, which in turn had an impact on its form and size. Thus, the size of a viola held on the thigh is less restricted by the length of the human arm than is a modern violin held under the chin. The latter way of playing is in fact more difficult than the former; hence, it was not always ease of handling which directed the choice of solutions. Look at the particular curve-angle shape of the modern violin: In order to allow the bow to stroke the peripheral strings, the sides of the body had to “cave in” which produced the narrow “waist” of these instruments. Therefore, a kind of 8-shape, functionally quite appropriate, was already present in some old fiddles (and tried out again on violins in the late 18th century). Thus, the practical handling cannot alone explain the peculiar shape of the modern violin. It seems that the two angular protuberances on the violin’s side give an added support to its “breast” (or front) which, statically, is not indispensable (see the guitar and the fiddle), but *improves the sound*. At the same time, it realizes a perfect aesthetic harmony of the form. Somehow it appears that the old violin-builders felt quality of sound and beauty of shape to be closely related.

This is, in short outline, the genesis of a truly cultural object, invented and perfected by man. We shall have to answer the question what motivated this development. At this place, I shall only frame the question, but not yet attempt to answer it. We believe to understand easily, indeed, the development of a loom from its primitive forms to continuously higher perfection: it serves ease of handling and, thereby, higher output. The

development of violins, of course, also aimed at easier and more comfortable handling—but what was its output? *Sound*, or to be more specific: *more beautiful sound*. Even the elimination, in the course of development, of older forms like the fiddle or the gamba, were due to this aim, partly even at the cost of ease of handling. Thus, the older gambas had six strings tuned in quarts and a third—similar to our guitars—and the neck was fitted with frets; with only four chords and no frets the violin became less easy to play. As to sound, however, the change made sense: the fretless neck allowed the development of the vibrato which gave the sound more warmth and suppleness, while the homogenization of instruments made the sound of the orchestra smoother and more voluminous.

Let me add another consideration. I think it reasonable to assume that beautifying the sound of the instrument was a main motif for transforming it. Yet, the pursued sound was, of course, unknown. A violin-maker might have changed some aspect of the instrument, but on trying it out, the player could remark: “It sounds better, *but that’s not yet it.*” What would have been this “it?” An intuition, an intangible anticipation, and although such an image became transformed over and again during the century long processes of improvement, it would have remained a “*should-value*” both inducing change and also controlling it.

This “sound-goal image” not only varied over historical periods, but differs also between cultures. Thus, as we have seen, the Siamese *soo* and the Chinese *hu* remained relatively close to a (supposed) initial form of the instrument. Of course, it, too, underwent modifications which, however, had only little impact on the sound: the “head” coconut shell was carved, the “neck” or shaft as well as the tuning pegs were partly or wholly made of ivory. Such beautifications by material or inlay were also applied to European instruments, but their purpose was one of mere decoration serving goals different from the one of improving the sound. Compare the *bridge* or the *sound post* and its equivalent of the two instruments. The bridge of the Siamese *soo* consists simply of a tightly rolled piece of cloth, while in Europe, although inconspicuous, it underwent multiple variations in form, size and position whose effect was tried out over centuries. The sound-post on the other hand, an invisible inside pillar, varied only in thickness and location, while its functional equivalent on the three stringed Thai *soo*, consisting of a small weight on its skin surface, became lavishly elaborated in precious materials, occasionally even diamonds and gold - for, of course, merely decorative intentions. It is true that beautiful sound was also valued in Thailand: it is told from the three stringed *soo*, the sound of which was especially appreciated, that, the special coconut shell needed for the instrument being rare, the owner of a coconut grove able to present such a shell to the Royal Palace was henceforth exempted from all taxes (Morton, 1976, p. 76). Yet, this *soo sam sai* was played only

on special occasions and acquired no place in the Siamese orchestra. What then, we have to ask, was the reason for the long-lasting search for instruments with a more beautiful sound conducting ultimately, in Europe, to the violin? Before attempting to answer it, let us look at the ontogenesis of the violin.

The "Ontogenesis" of the Violin

"Ontogenesis," of course, is not used here as in developmental psychology, meaning the unfolding of a being from its conception to maturity; I would rather understand it in its original meaning, "the coming into being." Indeed, a violin becomes really a violin only when it can be played. Its objectal purpose, so to say, is to produce sound, and this purpose can be fulfilled only by a player.

Our modern violin is probably the instrument most difficult to play, but likely also the one offering the greatest range of expressive possibilities. However, mastering it is a long and frustrating endeavor. It is said that in order to become a good violinist, a child has to start learning at an early age—the opinions vary between six to nine years. The optimum would probably be 7-8 years when the difficulties of sensori-motor coordination have been overcome. The child will of course first be given a small violin, to be replaced by bigger ones as the child grows. At the start the child is likely to be pleased with the new instrument. He or she may see mother or father playing and, as all children do, long to imitate them. Such initial enthusiasm, however, would soon be supplanted by a rather ambivalent attitude, and in most cases it requires much parental coaxing and dragging in order to keep the child from abandoning the instrument. Indeed, exercising the violin provides at first only little intrinsic reward. It is probably fortunate that the ear of the young child lacks fineness of discrimination and that, while it acquires it, the skill of playing improves, too.

To start learning early is, of course, required in order to shape the child's motricity and perception during the forming years. This is precisely of interest to the developmental cultural psychologist: that learning to master an object implies shaping the development of the individual; while, as we saw, the object was formed "phylogenetically," the individual is led to "fit" the object in its ontogenesis.

What is it that makes learning the violin difficult? Three basic problems have to be mastered: The first concerns posture, the second the technique of the left (finger-) hand, and the third the technique of the right (bow-) hand.

Since about the end of the 18th century the violin is held between chin and collar bone. This position, more difficult but also more proficient than earlier ones, requires not only strengthening of the neck muscles, but also precise coordination of their innervations with movements of the left arm for position changes. Since too much contraction of the muscles impedes the flexibility and precision of movements, it is important here, too, that the muscles of the neck and the shoulder remain relatively relaxed all the while exercising the required support of the left arm.

So much as to the main postural difficulty. Considering the finger technique of the left hand, we might point out first that the child's fingers need, particularly at an early age, to gain strength and independence of movement. Second, the violin not being fitted with frets, the fingers have to be able to touch the exactly correct spot for each note, which requires the acquisition of a precise "feel" for distances—particularly difficult since the space separating tone intervals diminishes the more the hand moves upwards. Strength, independence of movement and precision of touch will become particularly important for double stops, i.e., playing two notes at the same time. Finally, the left hand has to master the vibrato, important for giving volume and warmth to the sound.

All this is difficult enough, but will be compounded by the bow work, which is no less exacting. The bow is about 74 centimeters long and consists of a slightly concave wooden staff which holds the stroking surface proper, a "ribbon" about one centimeter large made of white horse tail hairs. The player holds the bow at one end, the "nut," and glides it over the strings. How this is done will principally determine the quality of sound, and is therefore of major importance.

The bow touches the strings in the space between the bridge and the fingerboard. The nearer the bridge, the sharper the sound is said to be, the nearer the fingerboard, the softer. To produce an even sound, the bow should therefore, ideally, move in a steady straight line—less easy than one might believe, because the "natural" horizontal movement of the hand traces an arc of circle. More important for the quality of sound are the speed of the bow movement on the one hand, the pressure of the bow on the other. For an even sound, both speed and pressure need to remain constant. The weight with which the bow rests on the string varies along its length, therefore keeping pressure constant requires compensatory regulations by the bow holding hand, and this, of course, at all speeds. Finally, the sound quality is influenced by the number of hairs which stroke the strings. For this reason the player will hold the bow at a sideward inclination, which, thus, must be kept constant or varied according to the sound desired. Let us not forget that the angle at which the bow is moved differs according to the string played—thus, for the g-string (lowest) it is almost horizontal, for the e-string (highest) it will approach

the vertical. And, finally, the bow movements must of course be coordinated precisely with the fingerwork of the left hand. Any psychologist who has ever tested motor coordination of children will agree that such a complex interplay of movements is very difficult to learn; even advanced learners will often have to concentrate on their bow much more than on the left hand. Smooth bow work will also be hampered by straining the muscles of neck, shoulders and arms; accordingly a quite delicate balance between relaxation and activation will have to be achieved.

Thus, learning to play the violin requires sensory and motor training, development of discrimination, rhythm, muscular strength and coordination. It may astonish those who believe that psychology can be learned in four years to see that learning the violin takes about twice as long - with daily training hours definitely longer than many a psychology student is willing to spend on his books or experiments. Becoming a violinist allows no short-cuts, no jumping of chapters one doesn't like, no skipping of arguments one does not understand; ignorance cannot be glossed over by empty words. In music every negligence becomes cruelly manifest in the performance, and therefore the learner is bound by an unrelenting discipline.

The initial results of learning, thus, would not be very rewarding. The sound remains crude, harsh, often disagreeable, the strings bite the fingertips, the skin of the chin gets irritated, and even social reinforcements, after a while, may become rare—the admonition to “close the door of your room when you practice” is not particularly encouraging. In spite of that, the child will have to exercise daily, often at hours when other children play together. We can thus easily understand that the violin will become an ambivalent object, and we will not be surprised by the fact that many young learners abandon after a while. “My best birthday present would be not to go on practicing the violin,” said the daughter of a friend. The violin somehow becomes an antagonistic object with its inherent discomfort and constraints, a continuous reminder of one's limited action potential, of objectal barriers and social constraints, and it may even represent the “non-I” in general, the external world basically opposed to the “I.”

Yet, some children “catch on.” They accept the frustrations of learning because of the positive valence of some future goal. This future goal may be to conquer an adversity, to extend and confirm the individual action potential; it may also be social—to become a famous violinist, or at least to be able to play quartet in the evenings like father. However, such explanations do not suffice to explain the reason of the child's catching on, but only relegate the problem; indeed, the reinforcement of an action potential would still have to explain why the child strives to achieve this **particular** mastery, and the explanation by social models would have to

understand the motivation of the violinist whom the child wants to emulate. And if playing the violin well would earn social rewards, what then would make the public appreciate music? It is exactly the difficulty of learning to play the violin, the intentness, the frustration tolerance and the perseverance needed which make an explanation by social modeling or some unspecified mastery inadequate.

Learning to play the violin is, in the terms I use, a *dominant or superordinate* goal. Superordinate goals are distant in time but command actions in the present, which—as with violin exercises—may not be pleasant in themselves. It is true that distant goals are somehow reached in steps. The learner's ambition will at first be to play a Christmas carol, later, a Telemann sonata, then a Mozart concerto and, finally, perhaps the violin concertos of Brahms or Mendelssohn; he may at first want to be praised by his family, then by his school-mates, then by the public at a local concert and would at last reach for recognition by a sophisticated audience. No doubt that applause of these audiences will provide encouragements to go on playing, but they do not suffice. The more the player advances, the more an additional audience will have to be satisfied: he himself. He or she will be critical of finger accuracy and speed, but as critically—if not more—will he watch and evaluate “*his sound*.” “**His**,” it is here, and not the violin's. In fact, he may be hurt when a listener tells him “You must have an excellent violin, it sounds marvelous!” He wants to feel that it is **his** mastery which forces the violin to sound well. However if, his level of expectation rising, he feels disappointed with the sound, and may start haunting the violin shops to have his instrument controlled, improved, or changed for a “better” one. Now, it has become—for a moment—the “**sound of the violin**.” But even on this new instrument he will spend hours a day only to improve his sound—to reach that elusive quality of tone which he feels to be moving, “going to the heart,” undefinable and yet inducing a reaction of content and fulfillment, in the happy moments where he feels to have reached it.

Sound and Noise

What then is it which makes beautiful sound to become such a dominating goal? In fact, sound is a very important quality of our perception. Sound says what words don't say. Words remain restricted to consensual taxonomies and are largely unable to express subjective states. Saying that I am angry does not necessarily mean that I *feel* angry. But the tone in which I say it will show my anger clearly. Tones betray the moods of our companions, and, knowing that, we will indeed try to control the tone of

our voice—be it to express, be it to hide. Sound conveys love or anger, acceptance or rejection, joy or fear in a way which “grips” immediately.

But the meaning of sound may be deeper than that. There may be two aspects to be considered. The first is the action of *making objects produce sound*, the second is the *search for perfection of sound*. As a boy I used to tighten a blade of grass between the two thumbs and, by blowing into the thus formed interstice, produce a sharp, oboe-like sound. In spring I cut fresh branches from hazel or ash trees and transformed them into recorder-type flutes. Each time I transformed nature into culture, forcing it to produce a sound which neither existed in “raw” nature, nor would have been possible to create without nature. Yet, the pleasure was immense and can be understood only by the extension of my childish action potential; it made me a creator, albeit in a tiny area. Making objects sound, thus, is a bit like taming animals: it transforms a resistant non-I into a compliant extension of the I.

Such sounds however, although exciting and pleasing, only rarely—and by accident—fulfill any standards of beauty. The *beautiful* sound is moving, it touches our feelings with a particular intensity. Myth stories and fairy tales are aware of the miraculous power of the beautiful sound: it tames wild animals, ghosts, heals the sick and appeals directly to the angels; Orpheus’ voice even opened the doors to the underworld. Could we say that producing a pure, immaculate sound provides the experience of an action potential able to realize—for a fleeting moment—something like a glimpse of Utopia? The experience is perhaps very pointedly expressed—although in the realm of color—by the British artist Ben Nicholson who writes on his seeing a painting by Picasso: “And in the centre there was an absolutely miraculous *green*—very deep, very potent and absolutely real. In fact, none of the actual events in one’s life have been more real than that, and it still remains a standard by which I judge any reality of my own work.” (Summerson, 1948, p. 7). And Gauguin to write: “The sound of my wooden clogs on the cobblestones, deep, hollow and powerful, is the note I seek in my painting” (TIME, May 9, 1988, p. 49). The statements are surprisingly similar—a certain tone of color or sound, experienced as potent and powerful, become standards, should-values, goals of aspiration.

Utopia is the imagination of a world entirely in harmony with our fantasies, of reality entirely in tune with inner experience. In other words, Utopia abolishes the “I”-“non-I” antagonism. The beautiful sound, an external phenomenon, yet produced by our mastery and corresponding to—or even surpassing—our ideal standards, thus becomes a proof of our potential to create a phenomenon which, by its appeal, symbolizes Utopia. This is, of course, not true for the beautiful sound alone, but for any

creation of beauty; hence the high valence of art. Beauty bridges the chasm between I and non-I.

Beauty, however, is neither the same for everybody, nor in each culture or historical period. For a Thai musician the beauty of sound differs from the one of an European, and at the time of Bach the sound of our modern violins might have shocked rather than pleased the listener, while his string instruments, although pleasingly soft, yet appear to us weak and subdued, lacking possibilities of expression. Today we might say that a beautiful sound has, above all, to be *pure*, meaning, on the one hand, free of noise frequencies, on the other, accurately in tune. The first sounds a beginner tries to elicit from a violin or a flute will be noisy, scratchy, raw, and tend to be out of tune; in learning to play a main effort consists in eliminating these impurities from the sound. In addition, the sound must be *firm*, i.e., of constant volume. An uneven bow movement (or in wind instruments, and uneven blow) produces an unpleasantly vascillating tone. It should, furthermore, be *appropriate to the music played*. Thus, the tone of a jazz clarinet or of a Gypsy violin would not be appropriate to Mozart’s concertos, but neither would a Mozart clarinet fit into a Swiss yodel band. Finally, beautiful sound has to express *subjective standards*—whatever they be. The one will aspire towards more warmth, the other towards more strength and clarity, the one will accentuate his vibrato more than the other—there will be subtle differences between players which sometimes only the initiate, or the player himself, will be aware of.

Purity of sound has obviously been of long lasting importance in European musical culture. Thus, the violin is tuned in quints which are the purest intervals, neither consonant nor dissonant. Until the romantic period, European music favored consonant chords; dissonances, of cause, occurred (as often in Bach’s polyphony), but were transitional, not “standing” chords, having to be resolved in harmony. Although the romantics began to use dissonances more freely, it is only in the music of our century that dissonance has acquired an independent standing. In contrast, in Thai music consonant chords are of no importance; Thai music is structured melodiously, it is linear, not harmonic. Consequently perhaps, the purity of tuning appears to be of lesser importance; Morton gives another reason, and both may be valid: “Since in Thai music only five of the seven pitches occur as principal pitches ..., perhaps the need for great precision in tuning is not felt,” he writes, and he speaks of a “‘rough and ready’ approach to precise tuning” (1976, p. 28). Yet there might also exist a more deeply founded reason: Purity of sound may have symbolic values different from ours—consider for instance the fact that in Thailand, contrary to Europe, religion played practically no role in the practice and development of music.

In *modern* Europe, however, we meet musical styles which not only do not aspire at a pure sound, but on purpose introduce *noise*. Louis Armstrong, in his trumpet, but even more so in his singing, cultivated a hoarse sound, and similarly the shrieking sounds of saxophones and clarinets in modern jazz are intended by their players, and may even also require long learning. They would not sound beautiful in every ear, but they are, in their own ways, congenially expressive.

Such examples might throw additional light on the meaning of sound. In modern rock concerts the hard sounds of metal guitars is combined with the hoarse shouting, screaming, shrieking of singers—they seem to enjoy noise, and their public does so visibly and audibly. But also modern, so-called “serious,” music frequently makes use of various kinds of noise: purity of sound tends, in whole or in part, to be abandoned.

Noise is “sound dirt,” and it seems to be no coincidence that rock musicians at a time also tended to cultivate a dirty look: unkempt, unshaven, ragged—or at least to affect “out of place” clothing, from torn jeans to Madonna’s bras and girdles (“Dirt,” says Mary Douglas, “is matter out of place” [1966, p. 35]). However, noise and dirt are normal contents of everyday life; to keep them away requires discipline, effort, and is related to much social constraint. Cleanliness is required in “good society,” and purity, of body and mind, is needed in approaching sacred things and places—otherwise the approach might even be dangerous. Hence, dirt can become a threat, and so can noise—to oneself as well as to others.

In fact, the meaning of noise can differ widely. It accompanies bodily discharges and thus is directly related to dirt and disease; it marks catastrophes, accidents, disaster, war, aggression; it signals a threat from dangerous animals, and nowadays belongs as well to powerful engines roaring through our settlements. But noise can also herald happy events, the convivial feasting, the exuberant joy, the triumphant success, the exhibition of power—easily, however, degenerating towards the noises of drunkenness. Noise (in the sense of not purified sound) can even possess aesthetic qualities: the rustling of leaves in a breeze, the murmur of water in a creek, the lapping of waves on the shore. [In German one would distinguish here between *Geräusch* and *Lärm*—a difference not existing in English.] Altogether we might say that noise tends to belong to earthly, albeit somewhat out of ordinary events. Pure sound, on the contrary, does almost not occur in nature—with the exception of singing birds. The pursuit of beautiful sound, thus, is a truly cultural endeavor, and the long history of creating instruments able to produce pure sound, as much as the individual efforts at mastering them, prove the importance we attach to it. Pure sound is a *mytheme*, corresponding to a *myth of purity* which relates the individual to a social as well as spiritual order—and which, by the same token, opposes the anti-order symbolized by noise.

Music, often and for a long time, was a means for approaching God. *Soil Deo Gloria*, wrote Bach over his compositions, and even recently Sir George Solti, the famous conductor, confessed that Mozart had convinced him of the existence of God. Introducing noise in music, hence, implies rejecting the cultural mytheme representing purity, including both its social and its spiritual contents. In other words, it means shedding off constraints and becomes the symbolic realization of unhampered freedom—somehow, it too represents Utopia, but of a Dionysian kind (as opposed to the Apollinian—to borrow Nietzsche’s dichotomy). The ecstasy such music can produce in many young and less young people relies on this symbolism which is reinforced by the sensorial excitement. Sound ideals, thus, can cover a wide spectrum. Noise can be pursued as obsessively as purity of sound, but they express different myths and fantasms.

Let us come back to the violin which, as we have seen, is the result of a culturally persistent quest for beautiful sound. It belongs to the ideational realm of purity. Hence, the young learner will from the very outset be caught between the cultural goal of purity and the natural propensity for noise and dirt. The violin, thus, may start symbolizing not solely the resistance of the non-I, but as much the conflict between natural penchants and cultural requirements. Eliminating noise in the pursuit of the beautiful sound will therefore imply overcoming a deep rooted ambivalence.

It will then follow almost necessarily that becoming involved in learning the violin must have an impact on the definition of the learner’s *self*. Somehow, the child will have to side with purity, he or she will veer towards the Apollinian side of Utopia. This, of course, implies renegating those sides of the “natural self” which prefer noise, dirt, disorder, and mastering the violin then may symbolize this fight against the “darker side” of one’s self. However, at the same time the violin, representing the—perhaps only anticipated, perhaps already experienced—potential of producing beautiful sound, will also symbolize the “aspired self.” Thus, over and beyond simple mastering of an antagonistic object, learning the violin would mean both overcoming the rejected sides of one’s self as well as approaching one’s self-ideal.

All this would also influence the learner’s *view of his world*. He would tend to see it divided into a “me-world” and a “they-world.” The “me-world” includes all those who embrace the same values, the other violinists, the other members of an orchestra, and others who appear to be united by the same quest for the pure sound. (I don’t call it a “we-world,” because I want to refer to an individual’s view of communality, and not to a factual social community). The “they-world” of course, are those who either do not care for, or might even loath the pure sound and what it stands for. In this more or less dichotomized world the violin becomes

instrumental—not only in the sense of producing sound, but somehow also for propagating its message.

Sound, indeed, is a signal: it carries a *message*, but it also is the message. In this sense, using Raymond Firth's taxonomy (going back to Pierce), the pure sound is more than a signal, it is an *icon*, i.e. "a sign that represents its object by resembling it" (1973, p. 61). The musician, thus, is more than a messenger, since he or she not only dispenses a message, but represents it. The violinist Henry Szering carried a diplomatic passport and was considered an "ambassador" of Mexico, spreading a specific cultural image of his adopted country; Yehudi Menuhin, if I remember correctly, was a "UNESCO ambassador," wanting to use his violin for bettering mutual understanding. Of course, such an ambassador role cannot simply consist in playing the violin, however well that may be; it is perceived more or less consciously as "spreading the gospel of purity"—whatever values the individual may relate with it. Somehow this "messenger" quality is ritually enacted in every concert: There are, on one side, the musicians, on the other, the public; the latter reacts to the performance with "regulated noise," i.e., applause, carefully controlled as to its kind and the appropriate moment. Note, by the way, that in none of the concerts performed in a church I attended was there ever any applause: noise definitely does not belong to sacred places. In the concert hall, however, the applauding noise appears somehow as an accepting, even submissive response to the enactment of purity of sound and its symbolic meaning; it is true that the applause may also, by its amount or kind, take on a quality of evaluation—when the performance is found wanting. The public is not entirely they-world: by the act of attendance it manifests allegiance, by its applause, its otherness. This ritual, by the way, is distinctly different from the one in rock concerts where noisy music and noisy manifestations of the public somehow create a bond of similarity between both sides.

Sound is more than a message: it may also *carry power*. In "*L'histoire du soldat*" by Stravinsky and Ramuz, the violin not only symbolizes the antipode of material wealth and might, but it conveys to the player the power of a different kind: To heal, to exorcise, to protect from evil forces. This belief in power related to the realm of purity and order is widespread. A magician has to beware of defilements in order to conserve his powers, and the ubiquitous fear of impurity—although differently defined according to culture (see Mary Douglas' analysis of pollution [1966])—is a telling expression of this belief. The power of the sound derives, of course, from its spiritual symbolism, but it also requires purity of the player: Stravinsky's soldier had to renegade his worldly wealth and subdue the devil before being able to use the power of his violin. Purity of sound, purity of

heart, purity of body, thus, all belong to the same myth—although with different connotations.

In this vein, the beautiful sound both is pure, but never as pure as the idea it expresses. Hence, the pursuit of the beautiful sound aims at a goal which will always remain "a step ahead": beautiful sound as experienced is not enough, the *more* beautiful sound is the real goal. It is a sound model, a should-value, never present and yet intuited; Gauguin, of course, did not intend to reproduce the sound of wooden clogs on cobblestones in his paintings, and neither did Nicholson want to reproduce Picasso's green: the experiences implied to them an intuition of a quality which would embody perfect "meaning"—a meaning, however, they pursued without knowing it. Such quest for the "still more perfect," the "still more satisfying" object or action corresponds, I believe, no less to an European myth; it expresses the anxiety of missing fulfillment, of losing power, but also the intuitive anticipation of "realities beyond" the present.

The sound of the violin, thus, is deeply embedded in cultural myths whose impact, of course, goes beyond music—which would be worth some other studies. The individual becoming a violinist will, intuitively rather than consciously, be drawn into the orbit of these myths, will undergo their influence; their meaning, however, will be subjectively constructed and merged with subjective experiences and aspirations. The mytheme of the pure sound will be related by every individual to different kinds of "purity" and order, and the pursuit of the beautiful sound will for each carry different subjective connotations. Thus myths, somehow constituting cultural cadres of orientation, will be filled out with personal relevance and meaning by the impact of the individual's fantasmic aspirations.

Thus, we will now understand the person-violin dyad as a kind of focus within his total "I" - "non-I" relationship, polyvalent and interrelated with various areas of meaning. One aspect, however, appears to me to be of basic importance in the player's pursuit of beautiful sound: to be able, *by himself, to overcome the antagonism of objects*. The violin, we have seen, is a recalcitrant object, and to master it requires profound transformations of the individual. Yet, this accommodation of the player for assimilating the object, in the long run, promises particularly rewarding returns. Indeed, the sound felt to be perfect can be produced only by a perfect fit between instrument and player. Assimilation and accommodation cannot be separated anymore: artist and violin form a symbiotic whole, the I, so to say, blending into the object, and the object melting into the I. As long as it remains imperfect, the sound is experienced as antagonism, as a signal of scission, but when perfect it becomes the symbolic proof of unity, of a cleavage overcome—in other words, it symbolically confirms our potential

to reach Utopia. Sound, now, is the objectified I, in perfect harmony both with the cultural myth and the subject's fantasmic aspirations.

Conclusions

What do such laborious, perhaps even tedious micro-analyses mean for cultural psychology? Let me summarize. We have seen the genesis of a "cultural object," from its earliest beginnings—the plucking of a bow string - to the still primitive forms of the Thai and Siamese "violins," the Arab "Rabab" and the fiddle, up to the final form of the violin. We have seen this, first, as a socio-cultural process, consisting in continuous interactions between violinists and artisans on the one hand, violinists and their public on the other. But my contention was, second, that these interactions must have been guided, over and above a concern for practicality, by a search for the most *beautiful sound*. Culture, in each of its historical stages, would provide criteria of beauty, but to search for a *sound anticipated, but not yet heard* would necessarily require individual imagination. Without such a need, carried over generations by a succession of individual players and artisans, the transformation of the object would have remained limited by practicability on the one hand, fashion or decoration (such as carvings or incrustations) on the other. This was the case of the Thai violins, and for mere practical handling much simpler forms, like the fiddle, would have been adequate, while fashion (as demonstrated by modern rock-guitars) has little impact on the sound, as long as it does not alter structure or material of the instruments. In contrast, the laborious experimentation on kinds of wood, of glues, lacquer, form and position of the bridge and other inconspicuous aspects of the instrument hints at the basic motivation to improve its sound.

I then tried to show that this same goal of the beautiful sound controlled the "ontogenesis" of the instrument, i.e., the individual process of learning to play it. The violin, more than other instruments, imposes a frustrating learning experience, and we found that the maintenance of motivation over the long years to mastery could be understood only by a superordinate goal which had to be more than mere social ambition. The high appeal of the search for a perfect sound became understandable by the symbolic quality of not simply hearing, but producing the sound: it implied the symbiosis of a man-object relationship or, as I said, the bridging of the "I"-non-I" cleavage.

Finding that a basic quality of beautiful sound was its purity, we discovered that its meanings reached far beyond the simple mastery of a skill: It appeared to be a mytheme participating in the cultural myth of purity and its antagonism to "noise." Pure sound, thus, became the carrier of a

message and of power, and somehow implied "partisanship": it had its impact on the self and world-view of the violinist.

Thus, the object is, as Lang has aptly called it (1990), an external memory. The violin as an object reminds man of potential uses, their requirements and advantages. Yet, as an object, it also relates to myths and derived values of the cultural group, and learning to master it, therefore is an action of taking sides. This action, by the same token, implies a *promise*, allowing to anticipate a not yet realized, perfected potential of action. In this sense, the actual object is just the momentary focus of a continuous process of interaction, implying improving transformations of the object as well as transformations of the subject in the process of assimilation.

I have, obviously, considered principally an isolated aspect of playing the violin which, of course, is much more than searching for the beautiful sound—although this represents one of its important aspects. I have neither considered the more complex actions of performing music, nor the extended social fabric within which the pursuit of a beautiful sound takes place. The chains of interaction and feedback stretch, indeed, over a large socioecological-cultural network: The violin builder has to find his woods, the right sheep for good strings (strings being made from lamb intestines), the tool-makers for his craft, the chemists for his glues and lacquers; the violinist will relate himself to composers past and present, to members of an orchestra or other ensembles, to other soloists whose performance he studies and evaluates, to a public which listens, applauds and criticizes, perhaps also to maecens who pay him, maybe even to a dermatologist should the skin of his chin get sore from playing; but, being a child of his time, the violinist will see his skill within a framework of fashions, tastes and, ultimately, myths, and living in particular individual conditions, he will have integrated his instrument and play into personal fantasies and action goals. All this would have to be considered, should we like to make an encompassing study or plan empirical research.

Yet, "the sound of the violin" was a paradigm for more general problems; it exemplifies the cultural as well as individual construction of objects; it demonstrates the extent to which these processes do not simply constitute some isolated mastery, but systems of meaning. Mastery is not independent of goals, and goals are polyvalent and anchored in networks of coordinated action, of thought, belief, rules and values. More than that, objects are in movement, they change with the flow of culture on the one hand, with the progress of individual actions, on the other.

Action and object, thus, concur to form combined structures; mastering the violin, we saw, will ultimately unite man and object in that intimate symbiosis resulting in the beautiful sound, and we are likely to find comparable interactions in man's use of other objects. Already the invention of an object implies objectivation: the subject transforms an idea into

external reality. In mastering the object, it will in turn become subjectivized, while simultaneously the individual will be objectivized by accommodation. In addition, the creation of an object implies its socialization—it will be integrated in common frameworks of action and ideation, and hence the mastery of the object entails an enculturation of the user, but also, by the individual variations in style or ways of handling the object, an individualization of culture. The interaction circle <object-user-object> is at the same time an interaction circle <culture-individual-culture> and implies progressive transformations on all levels. Piaget's model of object construction turns out to be valid not only for physical, but also for cultural objects; the construction processes involved, however, will become more complex, both as to subject-object extensions, and to layers of meaning, and the interaction subject-object will have to include both pro-active (subject -> object -> culture) and retro-active (culture -> object -> subject) influences.

All this, I believe, will lead to much more adequate models of reality than traditional psychology could ever achieve. Cultural psychology, in this vein, would necessarily have to precede all other psychological investigations—not because cultural psychology would tend to claim more importance, but because any psychological research would require to be localized within the total networks which action creates. We may, indeed, study the sound of the violin as a limited phenomenon, yet, only by being able to make evident its multiple implications would such a study become meaningful. Paracelsus coined the maxim "*nihil humanum mihi alienum esse potest*," and it could fittingly be a maxim for cultural psychologists; the *humanum*, however, the human ways of being and acting, constitutes complex systems, and should we go on neglecting these, as traditional psychology does, human reality will indeed remain alien to us.

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