



Free improvisation
is a form of composition.

But I dislike the term free improvisation because it's not all that free, as I will discuss later. So I use the term real time composition to describe my musical practice, a term which acknowledges the compositional aspect of free improvisation. My background and training is in composition, so it has always been my attitude that this form of improvisation is composition — in its purest form. But real time composition is not just an intellectual exercise; rather it is a performance practice involving the design and construction of instruments specifically suited to improvisation. As such, I compose/perform and build my own instruments.

In 1975, while a graduate composition student at UCSD, I started an improvisation group called the ID Project. My written music had become more and more improvisatory, so I finally decided to stop writing music altogether and put my complete attention into the most basic, essential form of music making I could imagine: free improvisation using found objects with musicians and non-musicians (the ID Project). I also made an extensive review of the literature on improvisation throughout the history of western music, and in some traditional non-western practices, to gain a better understanding of the many diverse forms and styles of improvisation, and a historical perspective about what I, and others, are doing. Since that time, I have evolved my performance practice and instrumentation, performing with various other musicians in the Bay Area, some of whom also make their own instruments.

I have come to realize that my instruments are key to my musical thinking and are an essential element of my compositional aesthetic. But before discussing the instruments, I would like to describe more about real time composition.

REAL TIME COMPOSITION

I speak of real time composition in terms of elements or levels of *influence* because the performer/composer is continually and constantly influenced during performance, and on several levels. Not a moment goes by in so-called *free* improvisation that the performer is not articulating the outcome of multiple influential forces. It's not so hard to imagine, is it? The body, the musical ear, the conscious mind, and the instrument itself all contribute to force the performer/composer to do exactly what he/she does each moment. As soon as information has gone out, it comes right back in. This immediate and constant feedback loop allows the body, ear, mind and instrument to work together to form the musical composition in real time. In addition to these four influential elements, I would add a fifth: real time itself, the actual experience. Let's consider these influences for a moment.

The *ear* (musical taste/preferences) determines, first, the general style of the music, and second, during performance, the nature of phrasing (emotional responses to the moment). The *instrument* provides the musical environment or context within which the performer composes, and thus exerts concrete, logical or semi-logical influences. The *body* exerts physiological influences through the formation of patterns and habits. The *mind* exerts its influence in the form of abstract compositional techniques such as those used in written composition. And *real time* provides what I call the *phenomenologic* influence — an interaction of chance with all of the other levels of influence. Each of these levels has an inherent logic; each is a *system* of sorts, with its own interconnectedness, and its own means of shaping the outcome of the performance. These influences do not occur individually, but rather in combination at every moment of the composition/performance. Some are conscious and some are subconscious. But all are operative in any given real time composition.

In addition to those just mentioned, there is another element of influence which cannot be overlooked. In group improvisation, the other musicians exert perhaps the most acute and dynamic influence on an improviser. Each performer is *composing*, adding his/her set of personal influences; thus, the forces involved in shaping real time com-

position are increased exponentially with the addition of each improviser.

Real time composition is a skill and an art; in order to develop it, one must be self-critical. As most other improvisers probably do, I make tape recordings, play them back and critique my work. I listen for clarity of idea, quality (degree of interest) of the sound event, musical phrasing, depth (how well an identity is explored), timing (when to change) and larger sense of form, continuity through skilled transitions, consistency of style and concept, and how well I played the instrument. I often imagine how nice it would be if someone developed the hardware and software necessary to precisely graphically transcribe any sound, and thus give us a *picture* of the forms and structures of real time composition. This would be no simple task, but such a *literature* would be fascinating not only to composers, but to psychologists, psychoacousticians, educators, and other professionals interested in forms of human communication and thought.

THE INSTRUMENTS

Of all the elements/levels of influence, the instrument is the most concrete, static and conscious. Therefore, I have always designed and built my instruments specifically for real time composition. And what characterizes such instruments? It is a balance between known and unknown. This sets up a dynamic interaction between the improviser and the instrument, each *making suggestions* to the other during the improvisation. Creating predictability in an instrument implies a rational, logical system — e.g., one based on tonal centers or sequences. Creating unpredictability implies non-systematic elements — e.g., random pitch sequences, or sounding devices with irrational harmonics or other properties. This dynamic known/unknown in an instrument is what I call *personality*. Over the last several years, I have developed two kinds of instruments with *personality*, *Space Plates* and *Electroacoustic Percussion Boards*.

SPACE PLATES

A *Space Plate* (e.g., the *Crustacean* and the *Fleur d'Esprit*) consists of a stainless steel or steel plate with various length and diameter bronze rods brazed to one surface; the instrument is played by bowing and striking the rods. The plate is suspended on inflated toy balloons in small cardboard