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# eSaz: a non-Western instrument in the context of a live electronic performance system

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**eSaz is a performance system for live electronic music centred around a classical Turkish lute fitted with electronic sensors and linked to a software interface designed in Max/MSP. Placement of sensors and the design of its digital signal processing build upon the physical characteristics, and expand upon the acoustical features, of this traditional instrument. Its design facilitates the integration of real-time recorded, as well as pre-recorded sounds, into an unfolding montage of sound. The system is discussed from both a technical point of view and from the perspective of a Western electronic musician addressing a non-Western acoustical instrument. Relevant questions about cross-cultural borrowing and the impact of electronics on the sounds and performance technique of a traditional instrument are discussed. The author addresses the role played by his Jewish identification, as a member of an ethno-religious group with a historical connection to Ottoman musical traditions, on the choices involved. Technical and aesthetic issues are detailed within the context of a description of the instrument and the author's interest in the development of gestural controllers.**

## 1. INTRODUCTION: CONCEPTUAL FRAMEWORK OF THE ELECTRONICALLY EXPANDED SAZ

The development of new gestural controllers has been one of the most fruitful and exciting areas of development in live electronic musical performance. Building upon early precursors such as the Theremin, these instruments combine haptic devices, including physical gesture tracking systems, real-time digital audio processing computation, and flexible interactive music software (Rowe 1993; Winkler 1995; Chadabe 1997; Paradiso 1998). An area of particular interest to this author is the retrofit of these technologies upon conventional acoustical instruments, combining the unique expressive features of old and new technologies. Foundational examples include Richard Teitelbaum's interactive multiple player-piano performance systems, George Lewis' *Voyager*, saxophonist Bruno Spoerri's adaptation of David Rokeby's video tracking *Very Nervous System*, Neil Gershenfeld and Joe Chung's *hyperinstruments*, designed for Tod Machover's music (Machover and Chung 1989), Dan Trueman and Perry Cook's *Rbow* (Trueman 1999; Trueman and Cook 1999), and Curtis Bahn's *Sbass*.

The author's work in this field has included the multi-sensor *eBoard* (2001), which includes a small home-built four-string harp, *eShofar* (2001), an expansion of a ram's horn, and *eSaz* (2002), an adapted *baglama saz*, a Turkish lute. Each of these instruments draws upon sensors and an I-Cube digitiser (Infusion Systems 2004) to capture hand movements on the body of the instruments. The data is mapped to digital signal processing and algorithmic compositional parameters that alter amplified audio output from the acoustical instruments and trigger and shape pre-recorded sound files, within a Max/MSP (Cycling74 2004) software interface.

The *baglama saz* is a long-necked plucked lute in the *tanbur* family, beautiful and resonant, most often used for vocal accompaniment or ensemble performance. Its seven strings are grouped into three courses, each set tuned to the same pitch. *eSaz* tuning, beginning with the lowest string, is a-d-g, with the bottom pair doubled at the octave, the middle pair doubled at the unison, and the top trio also unison. *eSaz* has nineteen frets per octave, reflecting the mixture of half steps and quarter tones in the Turkish *makam* modal system. Performance technique has the following features:

The *baglama* is generally played with a cherry-bark plectrum, though formerly the fingertips were widely used. The melody is commonly played on the first double course of strings, while the remaining courses are struck open as drones. Sometimes, however, the second and third courses are also fingered. The second finger of the plectrum hand is often used to strike the sound table to add a percussive element to the melody. (Morris 2004)

The author's interest in the *baglama saz* emerged from his study of Sephardic (Judeo-Spanish) music. Jewish life and culture flowered in Spain for six centuries, ending cataclysmically with the expulsion of 1492 (Gerber 1992). While in Spain, Jews adapted indigenous musical forms, creating a vibrant synthesis of Spanish and Jewish musical traditions. This cultural amalgam continued in exile as Jews emigrated throughout what was to become the Ottoman Empire, adapting musical traditions wherever they lived. This adaptation was consistent with the Jewish historical pattern of borrowing, reinterpretation and

incorporation of key aspects of host cultures within the context of inherited traditions. In the late sixteenth century (Seroussi 1990), Jewish poets and musicians began to adapt classical Turkish *makam* modal traditions. In a later period (Seroussi 2004), the *baglama saz* became one of the instruments used in *makam* musical performance.

The adaptation of the *saz* in the construction of *eSaz* distinctly relates to the instrument's function within Jewish culture and the author's interest in electronically expanded instruments. Its origins and primary identity, however, are Turkish, and until recently, exclusively non-electric. Its use in *eSaz* reflects multiple relationships between this composer as a Westerner and as a Jew and this non-Western instrument, which has played a role in Jewish culture.

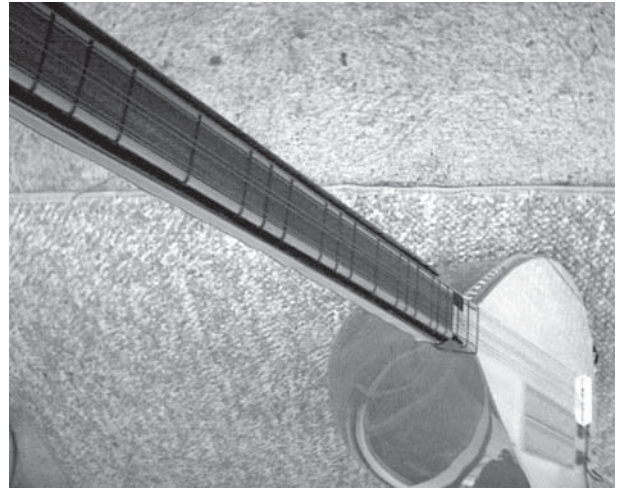
A vigorous and often contentious debate, hallmarked by the publication of Edward Said's *Orientalism* (1978), critiques the practice of cross-cultural borrowing by Westerners. Following a technical description, this article uses *eSaz* as a reference to explore these issues within the context of the electronic and cross-cultural adaptation of a non-Western, acoustic instrument.

## 2. DESIGN FEATURES

The musical goal of the *eSaz* system is to create multi-layered sound collages, interweaving live performance, sometimes digitally processed, playback of sounds recorded in real time, and pre-recorded sounds.

The *eSaz* draws upon sensor technologies to expand on the inherent technical potential and sonic characteristics of the *baglama saz* (sound example 1; all sound examples are included on the *Organised Sound 10(3) CD*), especially its rich, resonant sound, doubled and tripled strings, long *sostenuto*, and the effects of rapid strumming. The physical characteristics of *saz* design are well suited to electronic retrofits. The long, thin neck suggests the possibility of tracking hand motions while fingering the fret board. The flat, oblong body suggests the possibility of sensing movement of the strumming hand. The design thus addressed the use of both hands in motion.

Two sets of sensors are fitted upon the neck of the *saz*: touch (force-sensing resistors) and position-sensitive (slide) sensors are placed on either side of the neck (figure 1). These two function as a unit, allowing the performer to simultaneously actuate both and thus control multiple aspects of the signal processing. The sensors are positioned so that the performer can engage the sensors while holding down strings on the fret board. At every position along the slide sensor, varying degrees of pressure can be exerted on the force-sensing resistor.



**Figure 1.** *eSaz* neck: position sensor can be clearly seen on bottom; outline of pressure sensor can be discerned on top.



**Figure 2.** *eSaz* body displaying sensors within reach of the plucking hand and on the bottom of the neck.

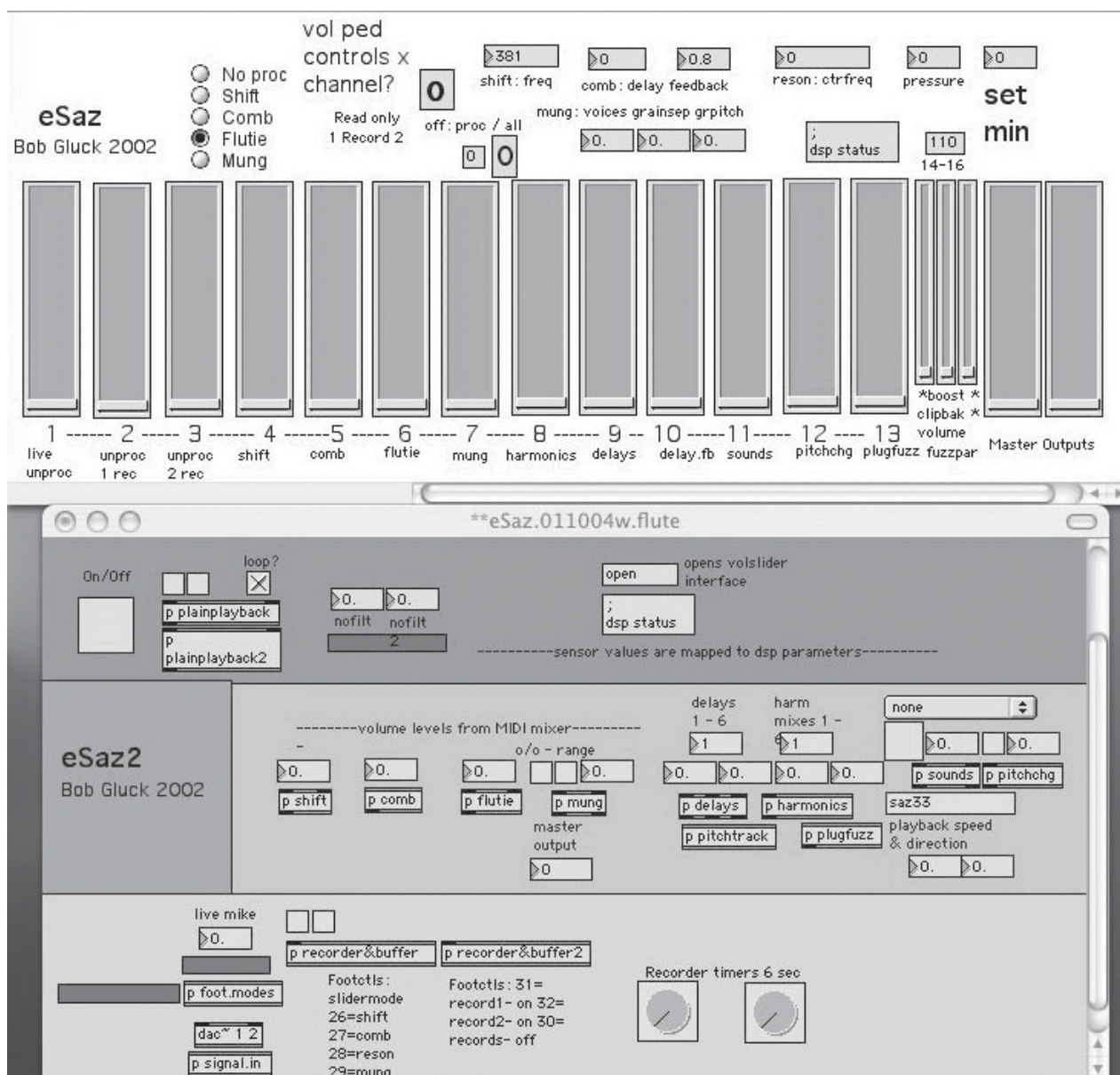
Two additional slide sensors are positioned on the body (figure 2), enacted by the picking hand to shape the playback of live and recorded sounds. A software mechanism senses the audio amplitude level of the *saz*, triggering sample playback when the performer plucks the strings, or taps the *saz*, at amplitudes exceeding a pre-selected threshold.

A pedal board is used to shape the mix and toggle between sensor assignments. I-Cube digitisers convert sensor output voltages into MIDI data, which can be mapped to control digital processing within any one of a series of Max/MSP software interfaces.

Digital signal processors include granular synthesis (sound example 2), comb filtering (sound example 3), pitch shift, octave doubling (sound example 4), additive synthesis of sine tones (the current pitch of a resonating *saz* string provides the fundamental; sound example 5), and multi-tap delay. In addition, a physical model of a flute (designed by Perry Cook and ported for Max/MSP as part of the PeRColate objects; DuBois and Trueman 2004) is sensor controllable

(sound example 6). In all cases, sensor data from the *saz* neck is mapped to values relevant to digital signal processing. For example, for the comb filter, the position sensor controls delay and gain and the pressure sensor controls feedback levels. Each form of digital processing is accorded its own distinct channel and thus, at any moment, can be incorporated within (or excluded from) the overall audio mix (figure 3). An outboard fuzz box, not sensor controlled, is also part of the system (sound example 7).

There are two types of sound sample playback available within the *eSaz* software interface. The first includes two sound files that may be repeatedly recorded and re-recorded in real time during live



**Figure 3.** Top layer of the software interface designed with Max/MSP. Note that at the top each sound and form of digital signal processing (contained within sub-patches on the bottom) is assigned a distinct channel.

performance and replayed at will. These recorded sounds can range from simple unprocessed *saz* sounds to the sum of the entire sonic output of the software interface. In this way, multiple layers of sound may be accumulated and played back, the recording process continuing even as the two playback channels are included within the mix.

The second variety of sound files are contained within six sound banks of pre-recorded sounds, among them *saz* sounds and a variety of other materials. The performer selects from one of six sound banks and using the two position sensors on the body of the *saz*, selects a particular sample within a bank and sets playback speed and direction (sound examples 8, 9)

The performance capabilities of this system, mixing multi-layered amplified, processed and pre-recorded sounds, and combinations of these sounds allow the *eSaz* performer great flexibility and expressiveness (figure 4).

### 3. ACOUSTICAL INSTRUMENTS REFLECT HISTORICAL EMERGING TECHNOLOGIES

The *baglama saz* is an acoustical instrument that embodies long established musical, cultural and performance traditions. Its electronic expansion engages aesthetic, sonic, performance-related and cultural issues.

All historical instruments engage some form of technology, whether this is the intricate system of hammers in a piano or plucked stringed instruments that draw upon sophisticated ideas about string tension and division and knowledge about resonating materials. As the nature of musical performance, its



**Figure 4.** Gluck performing *eSaz* in 2002. Both neck sensors are simultaneously enacted: on top with the side of the thumb and on the bottom with the heel of the hand, while fingering the fret board.

venues, social dynamics and aesthetics have changed, so has musical instrument design. New technologies, in turn, open new possibilities for the nature of performance.

The desire for a louder sound for soloing in the context of 1920s and 1930s jazz ensemble music led guitar builders to use steel strings, metal resonators and subsequently, electrical pickups with, alternately, hollow and solid body designs, leading to the development of the electric guitar (Joyce 2002; McGuire 2004). Today, nylon string, steel string, resonator and electric guitars coexist, each utilised for different purposes and within a variety of musical genres. As often in the past, existing instruments continue to coexist side-by-side with new inventions, offering new ways to perform historical works and pushing to the edge new compositional and performance approaches and aesthetics.

Does this dynamic remain true for new electronic musical instruments? Yes and no.

### 4. ROLE OF THE MARKETPLACE

Today, many new electronic instruments are designed as commercial consumer items that compete with their predecessors in the marketplace. Home digital pianos are designed as space and cost efficient, relatively maintenance-free keyboard instruments that can produce numerous sounds created to replace acoustic pianos in private homes. There are certainly exceptions. A previous, popular adaptation of the *baglama*, the *elektrosaz*, a Turkish-made electrified *saz*, was designed to be incorporated into ensembles with other amplified instruments and voices, and to be heard in larger, modern, concert venues. The traditional *baglama* remains essentially untouched in the process.

The new gestural instruments, with which this article began, are generally designed for, and often by, composer/performers, to suit new ideas for creative expression and not for the mass marketplace. The *eSaz* follows this model. *eSaz* was designed by an individual musician to address his distinct musical interests. It emerged from an existing instrument, but reflects a technological and cultural leap beyond that tradition. It shares only a single feature, microphone pick-ups for amplification, with the *elektrosaz*. It does not seek to improve upon or replace the traditional *baglama saz* and may not add anything to its musical tradition.

New creative vistas can be opened for historical instruments when their performance capabilities are expanded with built-on gestural control devices. Rather than being slated for obsolescence by competing new electronic commodities, these instruments can reach new audiences and cross musical boundaries. Traditional and new technological musicians and musical forms can join in a dialogue, based upon

a shared investment in the value of the traditional instrument. While *eSaz* may ultimately be of greater interest to electroacoustic music aficionados than to followers of traditional Turkish music, its development promises to enrich rather than diminish the instrument upon which it was built.

## 5. COMPARING A TRADITIONAL ACOUSTIC INSTRUMENT WITH ITS ELECTRONIC EXPANSION

Live electronic music using gestural controllers, especially electronic expansions of acoustic instruments, requires a new definition of the term 'instrument'. The *eSaz* incorporates not only the physical *saz*, but also the electronic sensors that track physical gesture, and the software interface that provides digital processing and interconnection between each of the elements. Thus the *eSaz* is a live performance system and is quite distinct from, albeit inclusive of, the *baglama saz*. *eSaz* may be more than the sum of its individual parts, but it is not *eSaz* without all its constituent elements.

The sonic output of the *eSaz* is also distinct from, but inclusive of the sounds of the *baglama saz*. It is a sonic collage, including amplified and digitally processed *saz* (using delays, granulation and a resonant filter), multi-channel playback of *saz* as it is performed during the actual performance and recorded in real time, plus playback of sound banks of pre-recorded sounds, resulting in a texture far more dense, and waveforms far more complex than the acoustical sounds. Although some of the music which the *eSaz* occasionally draws upon are traditional melodies, more Jewish than Turkish in emphasis, the instrument's sound capabilities are crafted within the context of the aesthetics of abstraction and juxtaposition associated with the mid-twentieth century avant-garde.

The technique used to perform the *eSaz* is inclusive of, yet broader than that used to play the *baglama saz*. Sensor placement and design draws upon *saz* technique, including hand movement up and down the neck and finger movement by the hand that plucks the strings. Hand position on the neck is conditioned not only by the demands of the fretboard for particular pitches, but also by the need to generate useful sensor data. The more sophisticated the *eSaz* technique, the more coordinated are these two aspects of technique.

On the *eSaz*, individual fingers on the strumming hand reach out to engage the sensors and at times even move independent of the strings. This is less a departure from traditional *saz* technique than may seem apparent, since Turkish performers use their strumming hand to tap the instrument's body for rhythmic effects. *eSaz* technique is thus both an expansion of *baglama saz* performance practice and something unique and distinct from traditional practice.

From a musical perspective, performing the *eSaz* requires far more attention to the timbral qualities of the instrument than the more melodic-focused traditional *saz* technique. And while density of sound is one of several ways that a traditional *saz* performer creates musical variation (for example, by varying strumming techniques and the number of strings simultaneously played), density is a primary aspect of the *eSaz* sound palette. To sum up, *eSaz* performance technique is a hybrid of elements of traditional *saz* technique, idiosyncratic techniques drawn from contemporary Western music, and features that relate to electronic sensor and gestural controller design and functionality.

## 6. CROSS-CULTURAL BORROWING: RESPECTFUL ADAPTATION OR APPROPRIATION?

The act of cross-cultural borrowing is a hotly contested dynamic in the eyes of cultural theorists. Said (1978) questions the propriety of members of politically dominant groups or societies borrowing music and other cultural forms from non-Western or historically colonised groups or societies. The pivotal term used is *appropriation*. The *Merriam-Webster Dictionary* defines the term *appropriate* as '3: to take or make use of without authority or right'. In the context of cultural theory, the term is taken to refer to the utilisation of an item from another culture, abstracted from its original context and subjected it to the borrower's own cultural meanings, separated from its original cultural fabric.

Many cultural theorists place the issue within a political context, in terms of imperialism and colonialism (Said 1978, 1993), the commodification of culture (Hart 1997) or the loss of the ability of minority groups to control their own representation of self (Hooks 1990). Said links the control of cultural self-expression with the control of land and the building of empire. For Said, resistance to cultural appropriation can be viewed as resistance to imperialism.

Fisher observes that:

most often, it [appropriation] involves a member of a more powerful group mining a minority culture for the jewels of its heritage for their own pleasure or benefit while the voices of that culture remain silent or silenced . . . We commit cultural appropriation, then, when we give voice to a people's culture, religion, or heritage and have not been invited to do so and in doing so are preventing the native culture from speaking for themselves. (Fisher 2002)

Coombe (1997) cites as problematic the Western definition of the artist within the context of Western colonialism. In this view, the Western concept of the Modern autonomous individual is in conflict with traditional notions of the cultural collectivity, which represents itself through its literary forms and art. The Western writer thus

... creates fictions with an imagination free of all constraint. For such an author, everything in the world must be made available and accessible as an 'idea' that can be transformed into his 'expression', which thus becomes his 'work'. Through his labour, he makes these ideas his own; his possession of the work is justified by his expressive activity.

Coombe concludes:

Ultimately, questions of culture and its appropriation are political ... By representing cultures in the image of possessive individuals, we obscure people's histories, their interpretive differences, their ongoing transformations, and the cultural dimensions of their political struggles.

Western musicians and artists have often appropriated cultural images and sounds from other cultures and the legacy of Western colonialism presents artists with a challenging context within which to work. It is of great value for Western artists to adopt a self-reflective stance, allowing those artists to carefully assess the legitimacy of their own cross-cultural borrowing. Indeed, today, it is common for non-Western sounds to be utilised in New Age music, motion picture soundtracks, and elsewhere, to suggest the 'exotic' (di Leonardo 1998) or to allow the Western artist to garb oneself in a cloak of difference and thus gain a certain mystique. Such usages often treat the adopted culture's heritage as a commodity. But is an objectification of other cultures a necessary consequence of cross-cultural borrowing? Among the important questions to ask are these: Must all cross-cultural borrowing be viewed within the context of colonialism? Does borrowing necessarily deprive the culture of origin its ability to represent itself?

There is yet another relevant question to ask: Is it possible to create art *without* borrowing? The adaptation of musical forms, melodies and, to some degree, instruments, from non-Western and local folk cultures has a long history in Western music. Cross-cultural borrowing has long (and probably always) been an integral aspect of musical creativity. Folk traditions evolve substantially around the transmission of inherited traditions and how they are faithfully repeated, albeit with personalised and regional interpretations. Western composers of music in the standard practice ('Classical') period have repeatedly drawn upon folk traditions and, especially in the Baroque era, the works of predecessors and contemporary colleagues. Johann Sebastian Bach continually recast church hymns and other melodies. During later periods, Bartok recast Eastern European folk melodies and rhythms, and Ives famously interwove American patriotic tunes and church hymns within his works.

During the eighteenth and nineteenth centuries, Mozart, Grieg and others drew upon melodies from Turkey. In the eyes of eighteenth-century European court society, Turkey represented a new frontier,

an exciting new musical horizon that could enrich Western music. Turkish music pervaded the European royal courts, influencing composers of opera and other musical forms (Mitchinson 2002), who treated it as 'grist' for their creative mill. It would be difficult to argue that the adaptation of Turkish influences in Europe rendered traditional Turkish culture unable to represent itself. Just as musical instruments from the bagpipes to the banjo travelled from their culture of origin to new lands, so did musical forms travel, emerging as both yeast and content for new cultural syntheses.

Musical creativity would be greatly diminished without borrowing. Does not every student borrow influences from her or his teachers? Are not most composers and artists profoundly influenced by everything that they experience? The work of Van Gogh (McQuillan 1989) and other French impressionist painters (Leymarie 1968) was influenced by their exposure to Japanese prints; Picasso drew upon African masks in his work (Jaszi, Woodmansee *et al.* 2004). Borrowing allows an infusion of new aesthetics and ideas, spurring innovation and creativity. It strengthens the renewal of existing traditions (for instance, the influence of jazz on Ravel and, subsequently, of Ravel on jazz) and ideally helps build bridges of cultural understanding and appreciation. Ideally, cross-cultural borrowing can help build respect for traditions other than one's own, as well as debunk the notion that one's own cultural tradition is superior or universal.

The question of legitimate borrowing is indeed complex and not resolvable beyond a few core clearly identifiable requirements: showing respect, causing no damage to a culture's ability to sustain itself, not interfering in a culture's ability to transmit its ideas and expressive forms to a new generation, or its ability to represent itself to the outside world. Yet, the very definition of respectful treatment can be hotly contested. Some members of a culture, whether or not they speak for others, may view any deviation from exact repetition of inherited musical forms, genres and instrumentation as disrespectful, if not heretical. But at some point, did not the very cultures being preserved themselves draw upon precursor and neighbouring musical influences to establish their expressive language? Is there truly such a phenomenon as music and art without at least some degree of borrowing?

Certainly, it is important for artists to acknowledge sources and to consider finding ways to contribute to the sustenance of the culture from which they borrow. Rock musicians such as Eric Clapton, Led Zeppelin and the Rolling Stones often credit the African-American blues musicians who influenced and inspired their work. Stones bassist, Bill Wyman recalls the first time when he heard 'Boogie Chillen', sung by John Lee Hooker:

I was picturing him, sitting . . . with a piece of plywood on the floor, stomping his foot on it, producing a sound somewhere between clapping and drums. He just did it stamping with his foot and just sitting very proudly and playing that rhythm that influenced so many bands afterwards like Canned Heat. And many bands just took that on and created careers for themselves with the rhythms he created. He wasn't a great musician as such. He tuned his guitar in a special way, but he had this wonderful voice and when he sang, you really believed what he was saying . . . There were a few people in London who swapped (blues) records, borrowed from each other. They were like gold dust. You had to import them from America. You couldn't buy them in the shops . . . (Montagne 2001)

Acknowledging influences is one thing. Addressing economic imbalances, however, is another. A musician from a politically dominant society or culture may have greater access to commercial audiences and opportunities, which can overshadow the work of traditional musicians (Hall 1997). Sensitivity to this dynamic may help address the distinction between respectful borrowing and exploitation. The problem here is situated more in the domain of commercial enterprise than in the work of creative artists, but artists can engage in efforts to correct misattribution and the lack of financial/institutional recognition many traditional artists have suffered.

The question specific to *eSaz* is whether it is legitimate to utilise a traditional instrument in a manner different from the performance techniques and musical materials for and within which it was developed. Is it legitimate in broader terms for a Westerner to adapt a Turkish instrument? What constitutes respectful engagement with the instrument rather than exploitative appropriation of its design, attributes, sounds and performance techniques? It is this author's contention that *eSaz* is indeed a respectful treatment of the *baglama saz*, although it might discomfort those who believe that one should never tamper with inherited instrumental design. *eSaz* in no way interferes with the viability of Turkish musical culture and its transmission or reputation. While it was designed as a new hybrid instrument that alters traditional definitions of the term 'instrument' relevant to the *baglama saz*, it has the promise of opening a fascinating dialogue with Turkish musicians, one that has not yet taken place.

## 7. ASSESSING THE NATURE OF CULTURAL BORROWING WITHIN THE PRESENT WORK

The author's engagement with Turkish traditions is clearly distinct from traditional Turkish musical expression. He does not view himself as an expert or performer of classical Turkish music. *eSaz* was developed fundamentally as an exploration of the author's Jewish traditions rather than those of Turkey.

The *eSaz* engages no indigenous Turkish musical traditions beyond the use of the physical *saz*, some *makam*-derived melodies and classical Turkish sound samples within a broad sound palette. The author freely integrates what he knows about the *baglama saz* within the context of his own personal musical palette and vision, integrating materials from various Jewish musical traditions (from descendants of Ottoman and other Judeo-Spanish Jewish communities, and European *Ashkenazi* Jewish musical traditions) and from the mid-twentieth-century European and American avant-garde. A wealth of pre-recorded sounds are also incorporated within *eSaz* performance, triggered and shaped using physical gestures enacted upon the sensors.

It is the author's contention that cross-cultural borrowing can be respectful and legitimate, if not invaluable. Granted that borrowing is inescapable, three elements must be present to achieve respectful adaptation: an appreciation of the contents and value of the other culture on its own terms; a desire to speak from one's own personal artistic voice without mimicking the other culture, and an awareness that can be articulated to an audience of the fine line between creative borrowing and disrespectful appropriation.

*eSaz* is better considered an 'adaptation' than an appropriation. The composer/performer seeks to become and remain informed about authentic Turkish *saz* music, makes no claim to be an authentic performer of this tradition, and tries to remain consistently clear with audiences about his relationship with the instrument and its host culture. He strives to maintain a respectful relationship with Turkish tradition, whenever it is referenced in performance and attempts to remain sensitive to the potential for the assimilation of *saz* sounds and techniques to cross a line into disrespectful appropriation. A weakness in this endeavour is the limited response to this work solicited, so far, from Turkish musicians.

## 8. HYPHENATED MUSICAL IDENTITY

The author approaches the *saz* not as an entranced Westerner, but as a Jewish musician with deep personal connections to historical Jewish musical cultures. In a sense, this adaptation of Turkish traditions is not dissimilar from the age-old reinterpretation by Jewish communities of forms and materials from the host cultures within which they have lived. The goal, both historically and in the present work, is an integration of 'foreign' musical traditions within a new Jewish cultural synthesis.

A Jewish musical synthesis that engages electronic technologies is certainly a new phenomenon. The use of sensors placed upon the body of the *baglama saz*, and the implementation of digital processing algorithms in software interfaces, is novel. Nonetheless,

creating a technological bridge is central to the new integration sought in this work. The goal is the development of a new digital instrument and an accompanying aesthetic and technique that bridges several traditions, most significantly Jewish and live electronic music, and quite secondarily, Turkish.

The multifaceted nature of this work mirrors the hyphenated nature of Jewish identity. The author's identity is simultaneously American and Jewish. The communities to which he is most profoundly connected are not only American and Jewish, from Eastern European ancestors, but also musical, North American and global, simultaneously particularistic and universalistic. His musical background merges European standard practice, traditional Jewish, electronic, rock and roll, and free improvisatory. His creative work is often an expression of these multifaceted and hybrid identities. In the present work, the author seeks a vehicle to express his distinct musical voice, while celebrating the various traditions from which *eSaz* emerges.

The author's identity is in some ways a microcosm of broader issues of cultural, ethnic, religious, racial and other identity (Rogin 1996; Guanipa-Ho and Guanipa 1998; Gauntlett 2003). Constructions of identity have become increasingly complex in recent decades, due to mixed parentage (Walker 2001), freedom of choice to select or change one's own identity by conversion, intermarriage or other means (Kukoff 1981; Fink 1997), the availability of artefacts of a tradition for others to adopt by choice, such as the non-Jewish singer Madonna's adoption of a Jewish name and certain aspects of Jewish mysticism (Berger 2004) or the involvement of non-Jewish Germans and Poles with klezmer music in the absence of Jews (Gruber 2002), the ability to search for one's authentic identity (Cowan 1982; Lester 1988), the consequences of political conflict (Hylland Eriksen 2001), or other factors.

What is distinct about the author's identity, relevant to *eSaz* is that it is firmly grounded in a traditional culture, albeit one that is multi-level, owing to the multiplicity of communities to which he is connected. *eSaz* is an expression of the ways by which a person may be flexibly but authentically rooted in a tradition, in this case Jewish, whose inherent nature is to borrow, assimilate, re-contextualise and attribute new meanings. The complex reality modelled here is, in fact, increasingly the nature of contemporary culture, as the world simultaneously grows and shrinks in size. The challenge for the composer in a world of fractured and multifaceted identity is to craft expressions of an authentic, integrated self, yet expressing the complexity of that self and of the world within which one lives. In such a situation, works that address this multiplicity and complexity in an honest and reflective manner can contribute to a greater understanding of the nature of

contemporary life (Featherstone 1990; Giddens 1991; Hannerz 1992).

## 9. CONCLUSION

*eSaz* is no longer a *saz*, it is a new, hybrid acoustic/electronic instrument. It is a distinct instrument designed for the performance of a new Jewish music grounded equally in the aesthetics of historical Jewish traditions and in the musical mid-twentieth-century avant-garde. Despite its physical origins in the *baglama saz*, the *eSaz* is in reality a live electronic performance system, one that respectfully acknowledges, but does not primarily depend upon, the history and traditions of the *baglama saz*. It dwells half way between an electronic enhancement of a traditional instrument and an all-electronic controller, bearing features of both. Created during a time of enormous inter-cultural exchange, the *eSaz* hopefully represents the promise of respectful borrowing and the exploration of new musical technologies.

## 10. POSTSCRIPT

The composition of this article occasioned a serious reflection about the contested ideas driving the debate about appropriation. The author began the writing process with a view that was sharply critical of even his own efforts, but resulted in a sharp reversal and an appreciation of the positive value of musical cultural cross-pollination. Indeed, such exchange reflects the poly-cultural nature of the Western social blend that offers so much to be celebrated. As a Jewish musician, I am sensitive to the fragility of a minority culture within a blended environment, yet appreciate that Jewish culture has historically found a balance between assimilation of influences and the survival of its cultural distinctiveness. It is the challenge of this balancing act that drives the reflective side of the development of *eSaz*. I am grateful to friends and colleagues who have been generous with their time and have respectfully and at times forcefully challenged many of the preconceived notions with which this writing project began.

Special thanks go to Milton Schubin, Tony Puryear and Mitchell Abulafia for their thoughtful critique of this text and the ideas represented within it. Each of the original instruments discussed in this article, including *eSaz*, is documented on the web (Gluck 2004) and performances included on the author's *Electric Songs* CD (EMF CD 051, 2003).

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