

Creating Collaboratively with Technology: The Ideas and Process of *Gilgamesh*, a Multimedia Concerto

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1. Abstract

In this article we describe the collaborative process leading to the creation of *Gilgamesh*, a 70-minute multimedia theater work for violin, eight channel electroacoustic music, installation, acting/*Figurenspiel*, and film created in 2000-2002 and premiered in June 2002 at the *Theater an der Sihl* in Zürich, Switzerland. The cornerstones of this work are a musical composition and an installation, both of which can stand independently but which, when combined, become the setting and the driving force for enacting a stylized depiction of the epic of *Gilgamesh*. Three dramatic agents—a violinist, computer musician, and actor/*Figurenspieler* (object actor/puppeteer)—bring the world of *Gilgamesh* to life by animating the objects of the installation while performing the music live. In the following, we will trace the various stages in the collaborative creative process of this work, from the original conception to its premiere performances. It is our intention that documenting our process, including both its successes and mistakes, will provide others with insights into how they might organize future creative collaborations.



Figure 1: Scene from *Gilgamesh*: Maja Cerar (left) operates character of Gilgamesh while Pippo Siegel plays character of Enkidu.
Photo: A. Lorenz/M. Neidhart

2. First Collaborations: *Turnstile* and *Invisible Arms*

The impulse towards *Gilgamesh* began in 1999, when we (Geers and Cerar) worked successfully in realizing two works composed by Geers: *Turnstile*, a short concert work for violin and fixed media playback, and *Invisible Arms*, a multimedia work for instrumental quartet (violin, electric bass, and two percussion), eight-channel electroacoustic music, dancers, and video. Although both of these works were successful, the requirements of the musicians in them was essentially conventional: Stand or sit, and play.

However, during rehearsals for *Invisible Arms* Geers learned that Cerar also had experience performing in theatrical and dance settings, including a staged version of Vivaldi's *Four Seasons*, where she had performed the solo part and simultaneously embodied a key role in a theatrical plot. With particular interest to exploit Cerar's uncommon talents, Geers convinced her to collaborate on a third work.

3. Enter the Robot Orchestra: *Appliance*

Our third collaboration, entitled *Appliance* (see figure 2), was created in the spring of 2000 with French technology artist Thomas Charveriat, through an intense in-studio process in which all three of us were active in shaping aspects of the final work, both visually and sonically. The result was an improvisatory performance environment in which Cerar and several electromechanical “sculptures” performed together, premiered in May of 2000 and successfully played several times in New York City that year.



Figure 2: Maja Cerar performs *Appliance*.
(Photo by Alojz Cerar.)

The “sculptures” of *Appliance* consisted of several electromechanical sound-producing objects (mechanical counters, motors, etc.) mounted into burnished aluminum suitcases and networked to a central MIDI foot controller. Meanwhile a lavalier microphone was attached to Cerar’s violin, and she also wore a MIDI control glove built especially for this piece, which sent messages to a Macintosh computer running a Max/MSP instrument that

was able to play samples and process the violin signal. In performance, Cerar improvised both musically and physically, freely moving around and among the suitcase sculptures as she improvised on her violin. In addition she used the foot controller to activate and deactivate each suitcase, and used the control glove to navigate among numerous settings of the MSP instrument. She was, in essence, soloist and conductor of her own improvising robotic orchestra.

Although Charveriat, Geers, and Cerar considered *Appliance* a success, we did not follow up upon it because, unfortunately for the two of us (Geers and Cerar), Charveriat emigrated to Spain in the fall of 2000, making further close collaboration quite difficult.

4. Gilgamesh: Conception and First Stage of Collaboration

As *Appliance* was being created, we began to discuss plans for fourth collaboration. Since *Turnstile*, Cerar had progressed from playing with a completely fixed electronic part to improvising within an interactive multimedia environment in *Appliance*. The next step would be to integrate interactive performance within a more large-scale and formalized composition, also making greater use of Cerar's theatrical skills.

With this basic premise in place, Geers proceeded to further define the work: Like *Invisible Arms* and *Appliance* the new work would be multimedia, as part of his continuing desire to create immersive audience experiences and to present music in settings other than the concert hall. However, unlike *Appliance* the violinist would not be tethered to the computer by a controller

glove and her microphone would be wireless, allowing her to move more freely across the performance space. Formally, the new piece would be based on a narrative, as part of Geers' interest in use of narrative structures in instrumental music, in part to give the work a more directional shape than *Appliance*, and in part to further Geers' desire to write a work that could "reach out" to a wider audience than usual electroacoustic music aficionados. The new work would require minimal set design and cast, to make the production as portable and affordable to mount repeatedly as possible; it would feature elements of puppetry, fueled by Geers' interest in Indonesian shadow puppet performances and to increase cast flexibility; and, finally, Geers determined that this new work would include no spoken or written text whatsoever, in order to channel audience attention to the music and visuals (as in ballet), and to avoid language barriers. In essence, Geers' idea was to create a multimedia concerto with Cerar as soloist and driving force of both a musical composition and theatrical piece.

Given that the new work was to follow a narrative structure, it seemed logical to begin its creation by identifying a story upon which it would be based. After considering several stories as the foundation of the work, Geers eventually settled upon the ancient epic of *Gilgamesh*. He chose this story more for intuitive than practical reasons; and in fact the *Gilgamesh* tale turned out to be a bit problematic to adapt to his predetermined constraints, as will be described below. However, at the time Geers found the story's treatment of fundamental questions regarding ego, power, love, and mortality to be a

rich source of inspiration for artistic expression. Moreover, its renown as humanity's oldest written story and the fact that it originated in Mesopotamia (present day Iraq) increased his interest.

Once Geers had chosen *Gilgamesh*, we both spent time reading multiple translations of the story and commentary about it and the culture from which it arose. Together we discussed the significance and implications of each character and distilled from the plot the elements we found most compelling. We trimmed a small number of scenes and characters from the original *Gilgamesh* story to accommodate our limited cast, because we wanted to tell the story with no use of text, and due to issues of dramatic flow and overall length. With our research and numerous discussions in mind, Geers developed an initial draft of musical ideas and their organization into a large-scale musical shape in November of 2000, and during the next few months we fleshed out the first draft of a scenario for *Gilgamesh*. Meanwhile, Geers also worked to develop an interactive Max/MSP electroacoustic system for the piece, which was completed in the spring of 2001 and which will be discussed further below.

5. The Music Composition: Fundamental Materials

The music of *Gilgamesh* was the genesis for the entire work, and was designed to feature the violin performing interactively with the computer music in a musical dialogue evocative of a concerto. The violin part was written specifically for Ms. Cerar, whose involvement during the process of composition was substantial.

Formally, the music of *Gilgamesh* is based on a harmonic syntax that explores movement among sonic colors exhibiting varying degrees of psychoacoustic dissonance and consonance, including the exploration of pathways between the extremes of the continuum and transition states connecting these. Some moments of the work sound quite consonant--even exhibiting tonal centers--while others are dominated by various colors of "noise." Often the two occur even simultaneously or in dialogue.

More specifically, the music was organized to traverse specific paths through a three dimensional harmonic matrix created by the composer. The construction of this system began with five "pillar chords" that act as sonic landmarks for the piece, chosen and developed to range from being quite consonant to highly dissonant. Each pillar chord was created by manipulating spectral data from recordings of vocal sounds (using the software *Audiosculpt* and *Patchwork*) and consists of 28 unique pitches, spread across a very wide frequency range.

Once created, the pillar chords were placed in the corners and center of a 5x5 grid, and other harmonies were created to interpolate among them (using both pitch substitutions and transpositions), filling the remaining spaces of the grid with a total of twenty-five unique chord types (see figure 3a). This grid was then transposed to the "tonic" of all twelve equal tempered chromatic pitches, yielding a harmonic space of three hundred possible harmonies for the piece (see figure 3b). These harmonies were then used to create and shape both the violin and computer parts in *Gilgamesh*, and

harmonic motion was achieved by traversing this 3-D matrix in all directions (up, down, diagonally, backwards, and forwards), including modulations to “distant” matrix locations both dramatically and through common tone connections (see figure 3b).

Pillar 1	Interp	Interp	Interp	Pillar 2
Interp	Interp	Interp	Interp	Interp
Interp	Interp	Pillar 3	Interp	Interp
Interp	Interp	Interp	Interp	Interp
Pillar 4	Interp	Interp	Interp	Pillar 5

Figure 3a: Basic Gilgamesh harmonic matrix: Five “pillar” chords with interpolating chords connecting them, and a hypothetical journey from pillar #4 through #3 to #1.

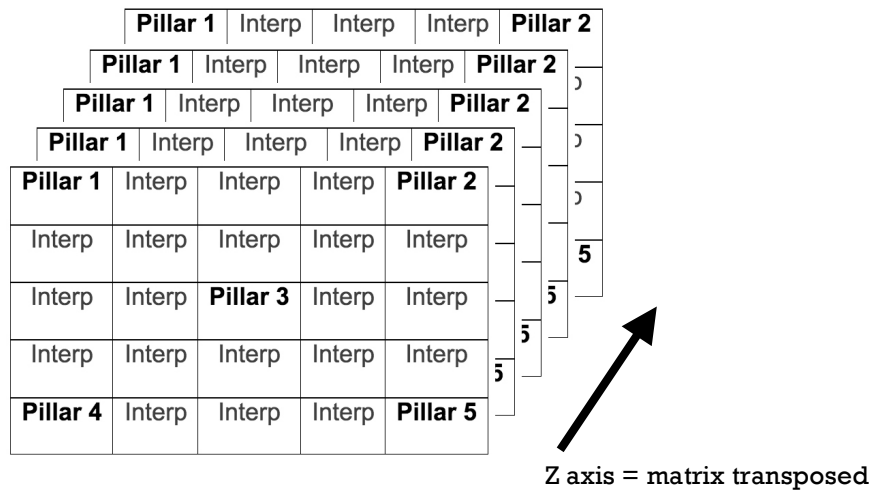


Figure 3b: Matrix is repeated at twelve pitch-class levels, and may be navigated in all three dimensions.

During composition, Geers made no attempt to systematically use all of the three hundred harmonies; instead, he designed tonal centers and chord

types for many specific places in the piece to give the composition landmark arrival points and then "navigated" the harmonic network in order to move from each of these landmarks to the next. Since the 28-note harmonies weren't easily playable manually and to help visualize his chord network and his paths through it, Geers created a Max patch that allowed him to "drive" through the chord matrix and hear the harmonic changes in real time (see figure 4). Geers also devised a number of patterns for stepping through the harmonic matrix, meant to enhance the psychological state desired at different moments during the piece. However he did not create fixed patterns or rules for traversing the harmonic matrix, as he was particularly interested to create a compositional system that was strictly organized but explored intuitively during the process of composition.

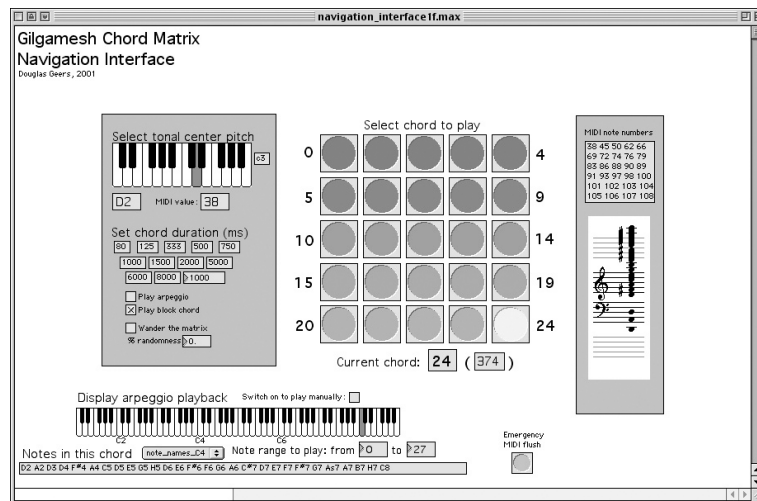


Figure 4: Interface for navigation of *Gilgamesh* harmonic network

6. The Computer Instrument

Returning to the concerto metaphor, the computer sounds in *Gilgamesh* can be understood as taking on a role akin to that of the concerto's orchestra:

answering the violin, accompanying it, and at times leading the music with or without the violin being present. The computer instrument operates via a software system created by the composer in Max/MSP and has three main components: live sound synthesis, live sound processing, and cued playback of pre-composed materials. Cues are located through the written *Gilgamesh* score in the form of boxed labels at specific locations indicating “DSP 1”, “DSP 2”, and etc. (indicating live processing and synthesis settings) and “SF1”, “SF2”, and etc. (indicating cueing short soundfiles to play back) (figure 5). During performance of the piece, the computer musician adjusts parameters and behaviors at each of these designated moments to specific, pre-composed settings.

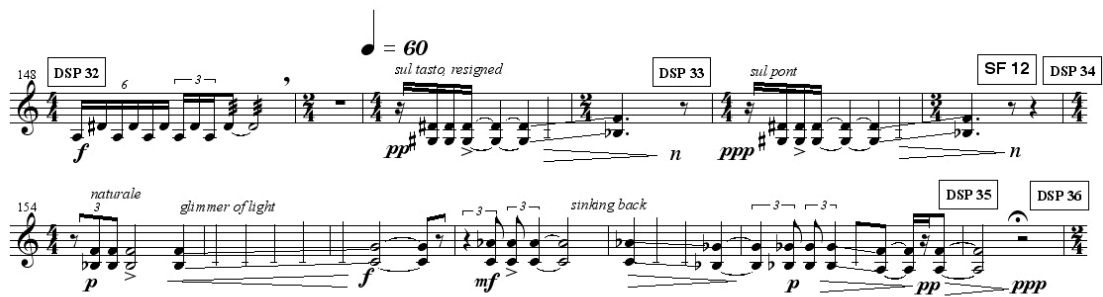


Figure 5: A brief excerpt of the *Gilgamesh* score, including five DSP preset indicators (DSP 32-36) and one soundfile start cue (SF 12).

The computer sounds created for *Gilgamesh* fall generally into two categories: synthesized events and timbral coloring (processing of violin and synthesized materials). However, twelve different electroacoustic modules were combined to create these, and the signal flow through the modules was completely and constantly variable. The computer instrument modules were additive synthesis, granular synthesis, soundfile playback (three of these),

digital delays, waveshaping, flanger, tremolo, reson filter, lowpass filter, and comb filter. Moreover, some of the modules were connected to the MSP fiddle~ object so that they could respond based on particular characteristics of the violin performance.

In performance, a wireless lavalier microphone is placed on the violin and this signal is fed into the computer. The software (led by the fiddle~ object) listens to this, gathers information regarding the violin's pitch and rhythmic patterns, and then uses this data to generate its own material in response. However, not all is automated. As the computer musician leads the computer through its "score" of activities during a performance, he has many controls on the screen he can use to guide or tweak the computer's musical expression, enabling subtle sonic changes and quite precise synchronizations with the violin performance or other events onstage (figure 6a). For reasons of onscreen aesthetics, the interface to the additive synthesis engine (to play the 28-note harmonies mentioned above) is separated from the other modules (figure 6b). When all modules are used together in performance, combining and processing the synthesized harmonies and the captured violin performance data, the violin and computer parts can always be related to each other through both gesture and harmony.

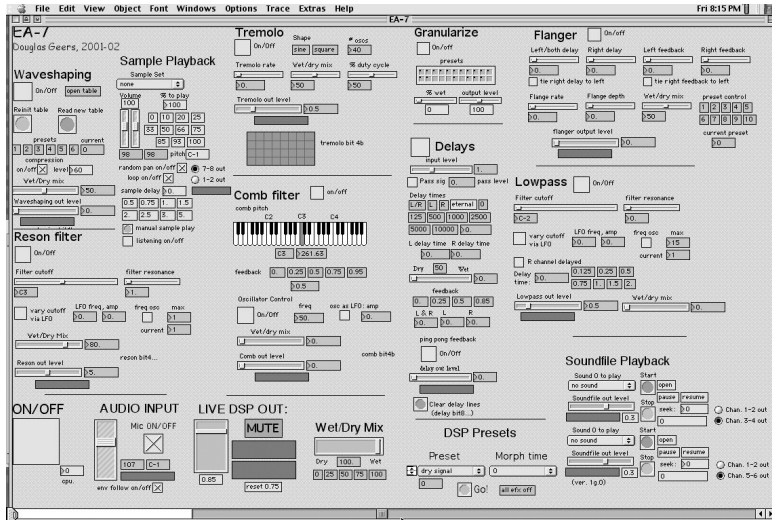


Figure 6a: main *Gilgamesh* MSP performance instrument interface.

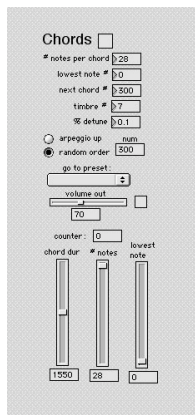


Figure 6b: *Gilgamesh* MSP interface for harmonic playback.

In order to quickly adjust numerous settings at once, an extensive system of messaging and preset values for each audio module allows the computer musician performing *Gilgamesh* to initiate a large number of simultaneous parameter changes with a single keystroke or push of a button (see figure 7). The computer musician can watch the notated score and increment the next numbered DSP setting (as seen in the score excerpt above in figure 5) at appropriate moments in the score by advancing the “DSP Presets” module of the Max/MSP instrument. When the user hits the DSP Presets module’s “Go!” button (or the spacebar on the computer keyboard),

each parameter of every audio module is directed to change its settings to new values, interpolating from the current values over a specified amount of time associated with that preset. To keep the display coherent for the computer performer, all graphical interface objects on the screen visually interpolate over the specified time to display the new values.

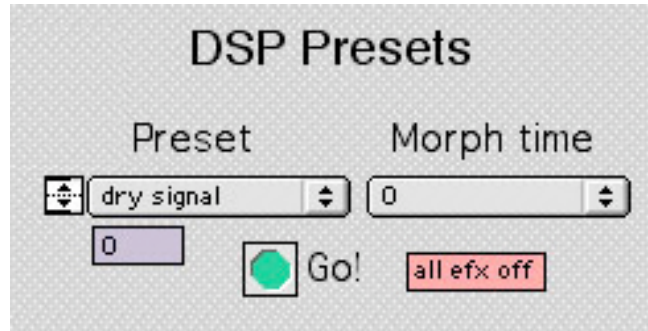


Figure 7: Controls for Automated parameter evolution.

As a side note: Readers may notice the “airplane cockpit” look of the Max/MSP instrument for *Gilgamesh*, as seen in figure 6a above, and wonder how easy it would be to control during performance. However, the use of the DSP Presets module (figure 7) means that most users will not need to operate the myriad controls. However, if one is adept enough, exciting improvisations can happen within the parameters of presets; and indeed, after composing *Gilgamesh* Geers adapted several of the modules here for use in his own live, completely improvised laptop performances. Meanwhile, Geers has arranged several sections of *Gilgamesh* as standalone concert works, and for these he removed the “cockpit” and replaced it with a small number of simple controls, consisting of the DSP preset incrementing panel (figure 7), basic audio I/O faders with labels, and an emergency mute switch (always a good

idea!) so that unfamiliar users would not become confused or intimidated.

7. Second Stage of Collaboration: Refining Concept and Music

After the essential materials of the composition had taken shape, we began to collaborate once more, in order to further refine the musical aspects of the piece. This work began in the summer of 2001 at the Columbia University Computer Music Center, where we met on a regular basis to test the successful integration of the violin writing with the Max/MSP system. During our countless hours testing and rehearsing in the studio, Cerar provided invaluable critique and ideas regarding both the violin material itself and the types, settings, and balances of processing applied to it; and Geers worked to adjust both to increase their effectiveness.

In addition, we collaborated to edit and amend the scenario of the *Gilgamesh* story. Together we met with Peter Lewis, then the President of the New York City Puppetry Guild. Lewis advised us that if we wanted a truly portable work we ought to limit our cast to three: computer musician, violinist/actor, and puppeteer/actor. We had intended to have a small cast, but Lewis' suggestion seemed radical. However, we soon agreed with him that this would serve to keep the piece "lean" and relatively inexpensive. Nevertheless, even with the use of puppetry this required further editing of the *Gilgamesh* story, and we created successive new versions of the scenario, investigating ways to simplify the story without sacrificing its core line.

At this time, several problematic attributes of the *Gilgamesh* story structure became evident: The tale is quite episodic in structure (it was

originally created by combining several shorter pre-existing narratives) and some scenes are weakly related to the main storyline. Moreover, several characters in it only appear in a single scene. Given our intent to trace the story without any spoken text, this large number of locations, situations, and characters seemed quite unwieldy. As a result, during our editing of the narrative we decided to omit additional scenes and characters entirely in order to focus attention on three major characters and their relationships: King Gilgamesh, his friend Enkidu, and the goddess Ishtar. Of the three, the Ishtar character was the most changed from the original story, in which she was one of a pantheon of gods. We chose to represent this pantheon by the single figure of Ishtar, who became Gilgamesh's nemesis in our piece. We would like to note here that we also consulted with Slovene actor/puppeteer Matjaz Loboda in late 2001, and he provided several valuable ideas for how to present the *Gilgamesh* story, including elements of the expanded role of Ishtar.

8. Third Stage of Collaboration: Shaping the Theatrical and Visual Concepts

In the fall of 2001, Cerar discussed the possibility to stage a performance of *Gilgamesh* via collaboration with the *Hochschule für Musik und Theater* (HMT) and the *Hochschule für Gestaltung und Kunst* (HGKZ) in Zürich, Switzerland with Daniel Fueter, Director of the HMT and also a composer and musician. Mr. Fueter agreed to produce *Gilgamesh*, provided a budget, and

helped identify faculty and students of the HMT with whom we might collaborate. The project proposal was accepted in December 2001 for a performance during the summer of 2002. In March, 2002, we traveled to Zürich to present our ideas on the piece and consult with our collaborators. Our main collaborators were: Anne Lorenz, visual design; Mirjam Neidhart, director; and Phillip (Pippo) Siegel, actor/Figurenspieler.

Our March 2002 conversations and work sessions significantly altered our ideas regarding the visual and theatrical realization of *Gilgamesh*, as our new collaborators contributed their imaginations and expertise. Of these, the following ideas were integrated into this production of *Gilgamesh*: First, visual designer Anne Lorenz advocated for a stage environment that would be at least as much an installation as a set for the narrative action. Up until this moment, we had assumed that the performance would be visually related to Indonesian puppet theater, as mentioned above. However, given our experience and interest in performance installations such as our own piece *Appliance*, we were intrigued at this possibility.

Regarding the visual aesthetic, Ms. Lorenz suggested an abstract and minimal design, using everyday objects to symbolically embody some characters and props: For instance, T-shirts stretched over simple frames would represent (at various moments) the city walls, the city's people, the trees of the forest, and waves on the river; a hat rack would be a monster, a glove would represent a magic plant, a sock would represent a snake, etc. (see figures 1 and 8). This would serve our desire for a "portable" piece and

would help us contain costs. Moreover, Lorenz proposed that we and adopt an “exposed” look that did not attempt to hide the artificiality of set pieces, costumes, and props: All pieces would be openly exhibited through the performance, costumes would cover either only the front or only the back of actors, movement of props would be done openly by the two actors, and so on (see figures 1 and 11). This was not at all what we had envisioned, but seemed to open the work up to a much more contemporary “vibe”, which we liked; and this was the moment when *Gilgamesh* morphed from being a conventional theater work to being an installation/performance piece.



Figure 8: violinist Maja Cerar in the *Gilgamesh* installation.
Photo: Alojz Cerar

Next, Pippo Siegel, our *Figurenspieler* (puppet actor), suggested that we use life-size figures and design them so that the actors could

simultaneously animate multiple figures. He also suggested that we consider using figures that could function both as puppets and as costumes, so that the actors could inhabit one and simultaneously manipulate one or more others at any moment, and then change identities by wearing figures as his/her costume at various times during the performance. These ideas increased the flexibility of the figures and reduced the impression of the work being a “puppet show”, which in some circles is assumed to be a work for children. Thus once again a collaborator had introduced a new idea that seemed to increase the work’s sophistication. Lorenz adapted Siegel’s ideas for our production, creating life size figures that could be worn as costumes or be animated as free-standing objects while hanging on wheeled frames (figures 1 and 9).



Figure 9: Pippo Siegel operates Gilgamesh figure (left) while embodying Enkidu figure.

Photo: A. Lorenz/M. Neidhart

Director Mirjam Neidhart suggested that, in congruence with the “exposed” visual design style, that we also explicitly present the act of telling

the *Gilgamesh* narrative. Thus, our production became a dramatic interplay between three dramatic agents, essentially the “gods” of this world, who collaborate to enact characters and situations of the *Gilgamesh* epic. The piece opens with these three agents moving through the installation, proceeds into their telling of *Gilgamesh* (which in fact falters at times), and ends with them shedding their costumes to resume their initial identities. And although we referred to them as “gods”, these agents dressed in rather nondescript gray T-shirts and workers pants (see figure 8), visually matching their primary roles as the technicians of the *Gilgamesh* installation.

Neidhart also suggested that we avoid the traditional proscenium stage orientation of audience and actors and instead place the audience on raised seating on the two long walls of a long rectangular performance space, leaving the short ends of the room for lights and placement of currently unused set pieces (figure 10). Finally, discussions with Neidhart helped us resolve how to present one especially tricky bit of the *Gilgamesh* story: When the immortal man Utnapishtim recounts to Gilgamesh the story of the ancient flood. How could we indicate a flashback without any spoken or printed text? With Neidhart, we decided to tell this flashback story-within-the-story by means of a short cartoon film (later created by artist Elisabeth Wegmann) projected onto a wheeled scrim pulled onto and off the stage as part of the performance.

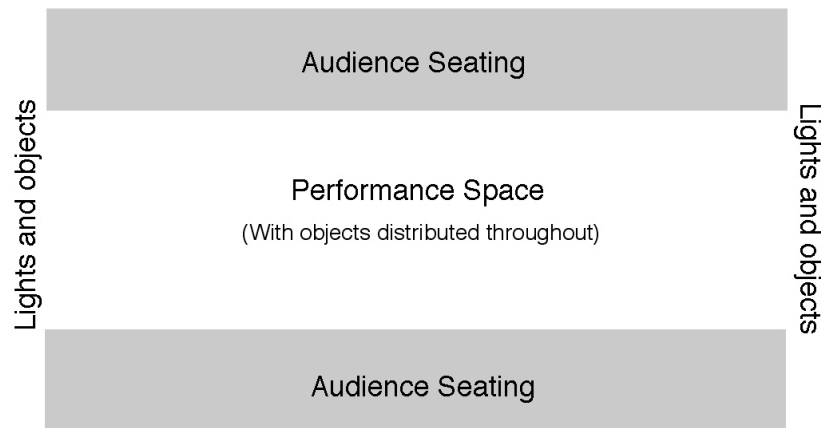


Figure 10: Stage layout for *Gilgamesh* performance

9. Third Stage of Collaboration: Rehearsals

On June 4, 2002, the cast and crew of *Gilgamesh* met at the HMT in Zürich to begin rehearsals. Over the course of three weeks, the final form of *Gilgamesh* was created through daily eight-hour (or longer) rehearsals.

During this process, the arrangement of audience and stage space (figure 10) presented a special challenge for the actor and the violinist, because every movement they made needed to be considered from every angle of view. Developing a common body language between the two stage agents happened partly through choreographed movement and partly through a daily routine of ball games played by the cast as rehearsal warm-ups. The games helped raise awareness of bodies and coordinated movement in space even when the two agents could not see each other.

As the rehearsals proceeded, set pieces, costumes, music, and action were adjusted and completed through a very cooperative process in which Maja Cerar, Douglas Geers, Anne Lorenz, Mirjam Neidhart, and Pippo Siegel

all suggested new ideas, most of which were tried, and some adopted. For us (Geers and Cerar), the process of these rehearsals was quite interesting, because its experimental, trial-and-error method of developing the final presentation was quite unlike the rehearsal process in classical music. In fact, it was much more like our experiments months earlier at the Columbia Computer Music Center, when we spent hours upon hours adjusting details of the violin part and audio processing—Except this time our entire bodies were involved, performing the music, moving across stage, embodying characters, etc.

Of all the elements of *Gilgamesh*, the music changed the least during the Zürich rehearsals, primarily because it was seen as the foundation for the piece around which the other elements would be fixed. Moreover, Cerar was determined to play the entire 70-minute work from memory, and making changes to the music made this harder for her to accomplish. Nevertheless, musical elements did change, including significant parts for the violinist, as late as at the dress rehearsal; and Cerar did play the piece from memory, except one section of 3.5 minutes of fast and complex “battle” music, which was, not coincidentally, the music revised at the dress rehearsal.

During the rehearsals, the greatest point of dispute among members of the ensemble was to what degree the piece ought to depict the *Gilgamesh* narrative versus only using it as a point of reference for a less direct and more symbolic work. All parties understood that the original intent was to trace the narrative rather symbolically rather than explicitly tell the story, but it was not

easy to agree regarding where to draw the line, especially since the piece contained no spoken or written text. In the end, the piece clearly has a dramatic arch and characters that interact and develop, but the reasons that things happen are not explained. In fact, one patron who saw the work all three nights later said he found himself intrigued but that he had wondered about the meaning of the action onstage and interpreted it differently every night. We were satisfied by such a reaction, because we were intending a kind of poetic theatrical expression.



Figure 11: Pippo Siegel (left) and Maja Cerar in *Gilgamesh* performance.
Photo: A. Lorenz/ M. Neidhart

10. Assessment of Results

Gilgamesh was performed three successive nights at the *Theater an der Sihl* on June 26, 27, and 28, 2002, and received a warm review in the *Neue Zürcher Zeitung*. The creative team considered the work a success, and have since initiated work on new collaborations.

Reviewing the piece and the process of creation, a few points come to

mind that ought to be considered when embarking on future work. For instance, Geers' decision early in the process to make the piece "lean" and inexpensive enough to mount on tour had a major impact on what it became, affecting the script, casting, and much of the visual design and staging. Nevertheless, it is debatable where one ought to draw the line between practicality and ambition. This piece seemed to be firmly on the "practical" side to us, but has turned out to be "impractical" enough that our planned tour has yet to happen.

Regarding the aesthetics of the finished piece, we think that in the future we ought to further explore the balance and boundaries between narrative and non-narrative performance art --We want to follow our vision to new degrees of extremity. It could be that we ought to follow the plot line even less strictly, and create a work that does not even attempt to "tell a story" in a traditional sense but instead offer vivid, imagistic impressions.

On a more practical level, in future works of this scope it might be appropriate to include more improvisation for the soloist, to allow for more theatrical flexibility and less note-for-note memorization for the musician(s). This would also allow more in-the-moment creative input by the composer, more on-the-spot action and reaction in the plot, and more impromptu and freely timed expressive gestures, all of which are more common on the theater stage than on a concert stage.

Moreover, it would be very beneficial in future works of this scope to have more time for the entire collaborative group to work before rehearsals

began. As it was, we met our visual/theatrical counterparts for a few days in March and then had to rely on email and phone communication until we returned for rehearsals in June. This led to a feeling among some of our collaborators that the piece was “our” project (Cerar and Geers) that they were assisting with, rather than a truly equally collaborative project. And in fact they were correct. We chose the story, the basic means of realizing it, and the music was the groundwork for the entire piece. Although we felt very willing to adjust plans based on their ideas, and know that much of the success of our performances was based on their creative ideas and committed efforts, the fact that the visual and theater arts entered “in the second act” so to speak gave them less power to fundamentally change the work. In future projects, we would like to try a more integrated collaboration again, as we did with Thomas Charveriat in *Appliance*.

Finally—and related to the last point—We mentioned that we enjoyed the experimental process of rehearsals with our director, actor, and designer. It is worth noting that in the “classical” music tradition it is generally expected that a composer arrive at the first rehearsal with a finished score; but perhaps composers should more often consider convening working sessions with performers at early stages in the composition process to experiment with their instruments and sonic combinations, or to create ensemble awareness with musical equivalents to the ball games we played as warm ups during our rehearsals for *Gilgamesh*.

11. Gratitude

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12. Information

For more images and some audio and video clips of *Gilgamesh*, please see www.gilga.org.

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