THE TEXT PROJECT:
FRONT, RETRO PROJECTION AND REFLECTION

The collaboration on staging of the Cyborgame started with four ideas. Andrew Sempere, Selena Savic, Shin-Yuan Wang, and Alex Barchiesi were to further develop *Skin as Interface*, *Audience as Enemy*, *Dematerialized Boundaries* and *Re-narcissification*, respectively. The SINLAB team came up with these ideas during brainstorming sessions prior to the intensive collaboration period with Gildas Milin, writer and director of the Cyborgame.

Over the coure of this collaboration, it became clear that only parts of these ideas are to withstand the meandering working process, and the process itself had very interesting turns in respect to what was initially proposed. In the following text I describe my contribution, with references to stage elements achieved by joint effort with Andrew Sempere.

Audience as enemy was supposed to work on inciting the audience to act as an invisible army, yet with an absolutely predetermined outcome. This idea followed on the character of the battles narrated in the script. It externalises conflicts in the mind of the cyborg as she battles against herself. Audience as army was supposed to tackle the problem of involontarily yet purposfully engaging the audience in the play.

Although Gildas was open to the idea of engaging the audience, it was never a priority in the pre-production of the play. This was the reason I transferred to work on an element Gildas was eager to have on stage: plain text.

The work on text initiated a detailed research into the different technologies that would allow display and live manipulation of text, while staying aesthetically neutral and materially light. Principles like POV (Persistence of Vision) and were briefly explored, together with LED surfaces and projections. Finally, projecting on different lightweight, transparent materials became the focus of the project.

The text project had two components: the hardware part made of different projection and reflection principles are explored; and the software part, more specifically a tool for display and manipulation of text.

projection and reflection exploration
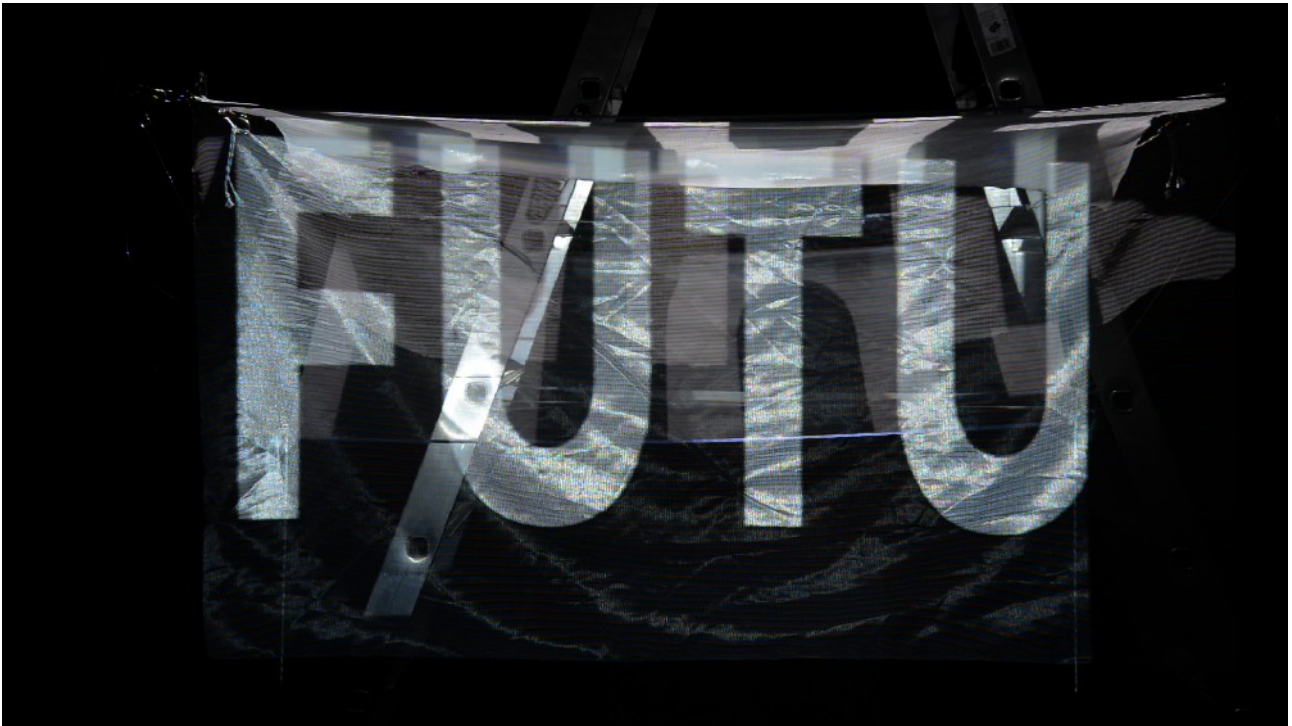
With the goal to arrive at floating words in the space, projection on tulle soon became one of the prefered techniques. The tulle, with its particular absorption of light gradually became the main element of stage design, namely the "Cage". This development lead toward convergence of some of the initial ideas. For example, while working on manipulation of Kinect depth information data, Andrew Sempere developped visuals that used live tracking as an input for character's *re-narcissification* (characters' movements being repeatedly projected on the walls). At the same time, the hanging tulle communicated some of the character initially aimed at by the *dematerialised boundaries* idea. Different video sources were projected on the 'walls' of this cage; three-dimensional shadows of the actors, dialogues, comments, lines, dots, signs, glitches and stroboscopic effects.

In my research in the presence of text on stage, I continued searching for an even less material appearance. I focused particularly on a technique of projection and reflection, known in theatre as the Pepper's ghost effect.

The first projection and reflection system consisted of two parts. One part is the floating text effect created by the projection on a retro-projection screen and its reflection in the plexiglass sheet. The other part is a simple frontal projection on tulle. The two parts are layed over each other, creating an interesting spatial effect.

We set up a mockup of the system in the lab which demonstrated the effects, while allowing us to experiment with materials and installation techniques. The picture bellow shows the mockup with its different parts indicated with numbers.
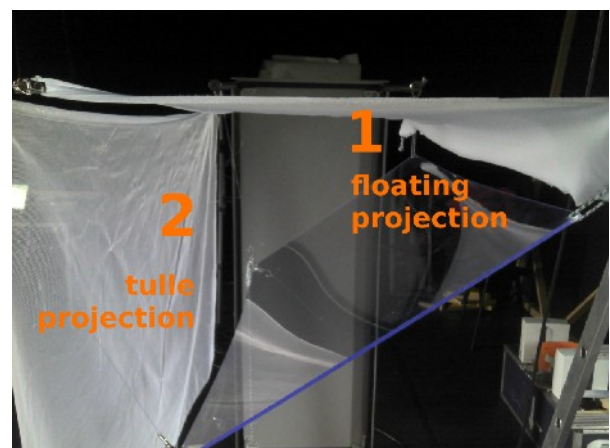
/////part 1: the floating text
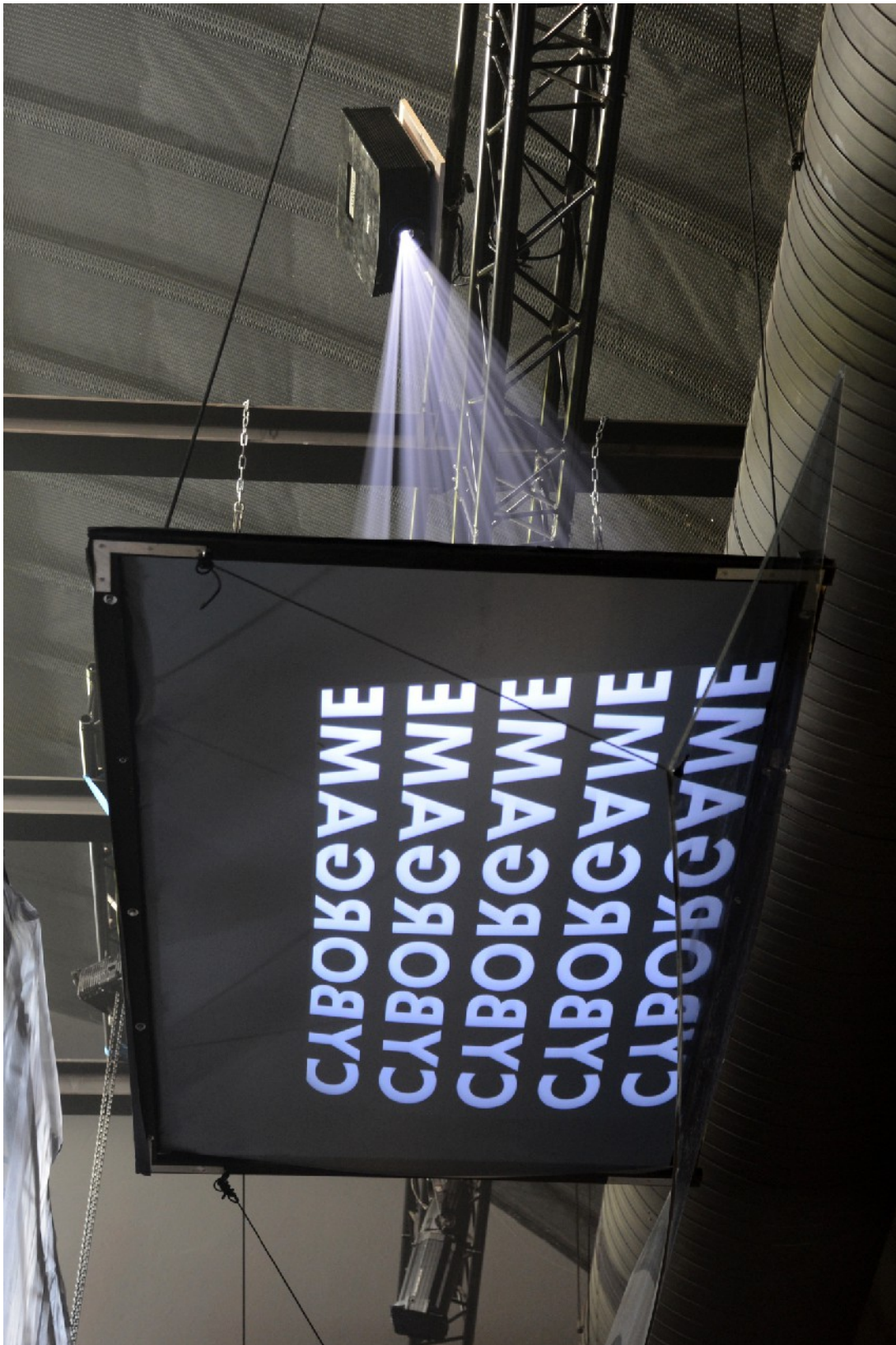
The floating text effect is achieved with a projection from the ceiling onto a horizontal screen, reflected by the plexiglass sheet to appear as if it was standing vertically behind it.

We tested numerous different materials to use as the screen, searching for one that appears lightweight, with a relatively neutral presence in space and optical properties that would satisfy the readability of the 'floating text'. The task here was to catch the light from the projection with a minimal escape through (so no light would appear on the floor). At the same time, the material used as a screen had to be as dark as possible, in order to 'dissapear' above the projection.

We received 7 samples of PVC retroprojection screens from the Rosco company, which we tested with an overhead projection to find the one with the brightest reflection and darkest appearance. Without light they appear opaque, while with the increase of light they receive, they become more transparent. All materials have the ability to catch the light completely, including the translucent screen. Bellow is a photograph of the samples in the following order:

SKY BLUE | GREY | TRANSLUCENT | BLACK | MISTY BLUE | FRONT WHITE | TWIN WHITE

and their reflections in the plexiglass (same order):

SKY BLUE | GREY | TRANSLUCENT | BLACK | MISTY BLUE | FRONT WHITE | TWIN WHITE

We concluded that the Sky Blue and Misty Blue have the clearest reflection without any colour changes, while the Grey and Front White make the white project text appear more yellow; However, the Black's reflection quality is very close to Sky Blue, while its appearance is much darker and less noticeable when suspended in the theatre auditorium. Therefore Black will be the screen of our choice.

/////part 2: the tulle projection

The second part of the projection experimentations is a simple frontal projection on tulle. The challenge here is the material the tulle is made of and the way it reflects light. The acrylic materials absorb more light and the text projected on them appears darkere, therefore less readable. Cotton tulle has a lighter appearance but the text appears brighter on it, more readable and present.

Tulle 01: material found in SINLAB

Tulle 02: acrylic, more dense

Tulle 3: acrylic, less dense

Tulle 04: cotton

the software side

/////Textify

The Textify software developed by Andrew Sempere can display text interactively (typed in the box directly) or read in from a text file. The software allows manipulation of text font, size and colour, as well as the position on the screen, horizontal and vertical scroll and the typing effect.

/////Cyborgame Crawler

In order to allow playful and easy manipulation of the original Cyborgame script, we also developed a tool, Cyborgame Crawler, that parses the text looking for lines of a particular character or specific words that appear in the text. With this tool, it is possible to choose a character like "Le Personnage de Roman" or "Le Colonel" and generate a text with only his/her lines. It is also possible to type in a word like "SLASH" that is used repeatedly in the script, and have the Cyborgame Crawler generate the text with all the lines where "SLASH" appears. This file can then be read into the Subtitler and dynamically updated when the text changes.

This software turned out too complicated for live manipulation of text and the project was abandoned. Live manipulation was finally all done with Textify.

C'est le Colonel qui vous parle…

Les soldats contre lesquels vous allez devoir vous battre… auront une réalité pour votre s
ystème nerveux mais vous resterez seul dans la cage… les soldats et les armes que nous uti
liserons contre vous seront actifs et réels pour vous… mais « déclenchés » depuis une autr
e cage située à une dizaine de kilomètres de vous… depuis un simulateur… une autre cage… c
opie identique… conforme… ou presque à celle dans laquelle vous vous trouvez…

Chaque attaque sera donc non seulement perçue vécue éprouvée par votre système nerveux com
me une réalité… mais sera doublée par une autre attaque… dans la réalité vraie…

La cage est donc à la fois un bouclier pour nous… et un arsenal réel dressé contre vous… t
out autour de vous… chaque coup que nous vous porterons en virtuel sera encaissé en réel p
ar votre système nerveux… et ce coup sera doublé… porté en réel contre votre corps physiqu
e… par des armes réelles… vraies…

Si vous essayez de capturer ou de tuer des soldats… mes hommes… ils seront désimplantés et
 sortis du programme avant que vous puissiez les atteindre en réel… même chose pour les ar
mes que nous utiliserons même si le système de désactivation est différent… vous ne pourre
z donc jamais nous infliger des pertes réelles… l'inverse évidemment… vous l'aurez compris
… ne sera jamais vrai puisque vous n'avez le moyen de vous désimplanter ni du système virt
uel ni du réel… sauf par la mort bien entendu… votre mort… réelle… je vous souhaite de com
prendre ça très vite… et de mourir très vite…

Vous battre contre mes hommes… nos armes… n'aura donc qu'un seul effet… celui de vous donn
er du temps… celui de souffrir toujours plus… le temps de repousser l'inévitable… vous m'a
vez suivi ?...

Je suis moi-même un hybride-cyber mais j'ai toujours gardé le contrôle… de mes capacités r
éelles… de mes pouvoirs… de mes souvenirs… je n'ai pas votre talent…
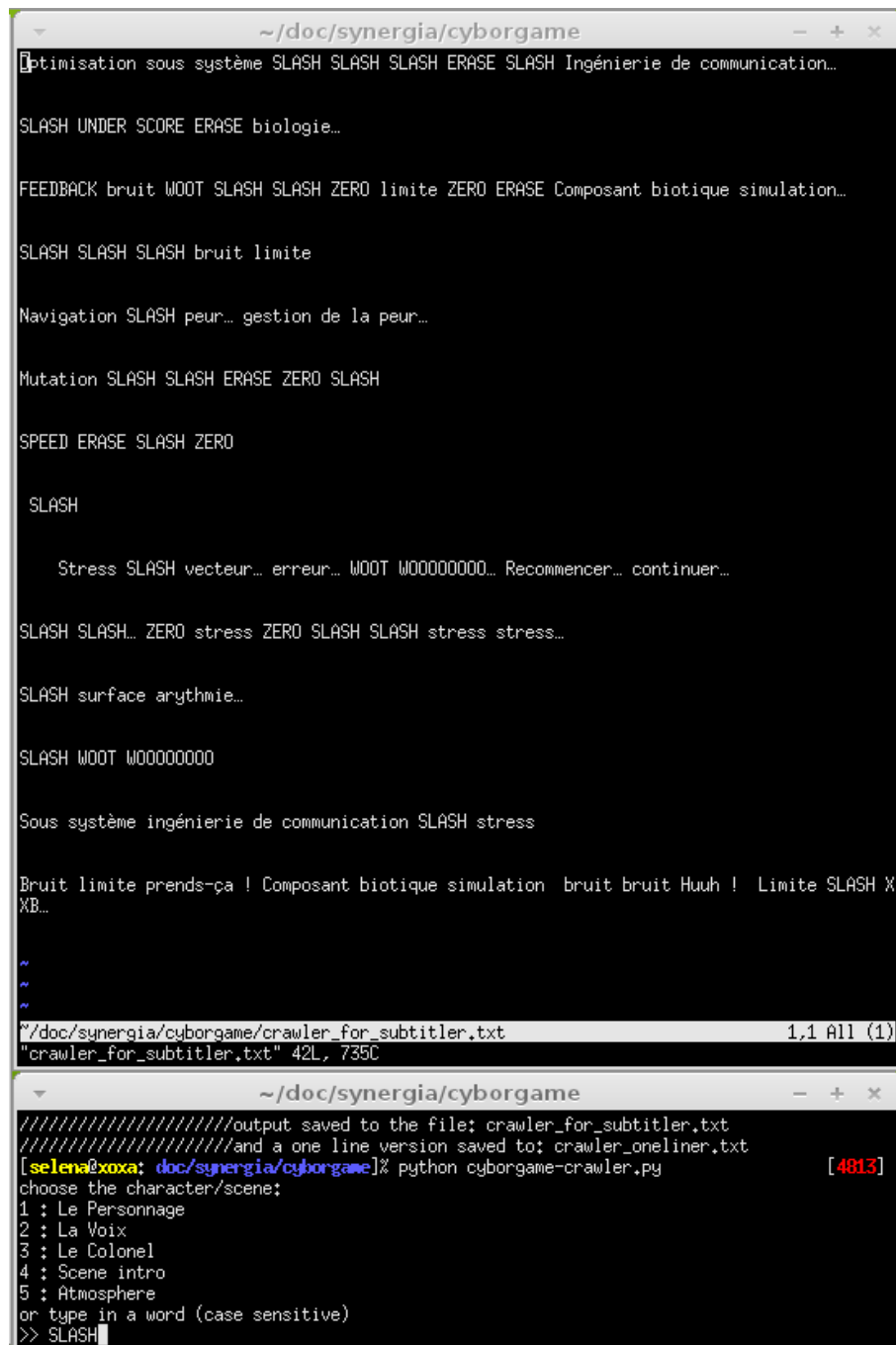
Je ne suis pas non plus persuadé que vous soyez coupable à cent pour cent… mais votre muta
tion est très avancée… et ma responsabilité est plus grande que moi…

Exécution du programme…

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~
~
~
~
"/doc/synergia/cyborgame/crawler_for_subtitler.txt   1,1 All (1)
"crawler_for_subtitler.txt" 18L, 2263C

~/doc/synergia/cyborgame
/////////////////////////output saved to the file: crawler_for_subtitler.txt
/////////////////////////and a one line version saved to: crawler_oneliner.txt
[selena@xoxa: doc/synergia/cyborgame]% python cyborgame-crawler.py   [4813]
choose the character/scene:
1 : Le Personnage
2 : La Voix
3 : Le Colonel
4 : Scene intro
5 : Atmosphere
or type in a word (case sensitive)
>> 3

cyborgame crawler: searching for the lines by Le Colonel

~/doc/synergia/cyborgame

Optimisation sous système SLASH SLASH SLASH ERASE SLASH Ingénierie de communication…

SLASH UNDER SCORE ERASE biologie…

FEEDBACK bruit WOOT SLASH SLASH ZERO limite ZERO ERASE Composant biotique simulation…

SLASH SLASH SLASH bruit limite

Navigation SLASH peur… gestion de la peur…

Mutation SLASH SLASH ERASE ZERO SLASH

SPEED ERASE SLASH ZERO

 SLASH

    Stress SLASH vecteur… erreur… WOOT WOOOOOOOO… Recommencer… continuer…

SLASH SLASH… ZERO stress ZERO SLASH SLASH stress stress…

SLASH surface arythmie…

SLASH WOOT WOOOOOOOO

Sous système ingénierie de communication SLASH stress

Bruit limite prends-ça ! Composant biotique simulation bruit bruit Huuh ! Limite SLASH X XB…

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~
~
"/doc/synergia/cyborgame/crawler_for_subtitler.txt   1,1 All (1)
"crawler_for_subtitler.txt" 42L, 735C

~/doc/synergia/cyborgame

////////////////////////output saved to the file: crawler_for_subtitler.txt
////////////////////////and a one line version saved to: crawler_oneliner.txt
[selena@xoxa: doc/synergia/cyborgame]% python cyborgame-crawler.py   [4813]
choose the character/scene:
1 : Le Personnage
2 : La Voix
3 : Le Colonel
4 : Scene intro
5 : Atmosphere
or type in a word (case sensitive)
>> SLASH

Illustration 1: cyborgame crawler: searching for the lines that contain the word "SLASH"

the results