To confute the primary concepts behind David Khang’s individual exhibitions in two different venues in Vancouver BC, was a challenge. As much of both science and art, we fully appreciate the difficulties as well as the triumphs of bringing the two seemingly disparate fields together to demonstrate that art and science indeed share core concepts and a methodology of approach in the search for essential truths, experimentation fueled by genuine curiosity, and a sense of wonder.

At the core of Amelogenesis Imperfecta (How Deep is the Skin of Teeth) in grunt gallery’s Media Lab is a dramatically staged, laboratory-like setup reflecting Khang’s experimental biological research during his 2010 residency at the SymbioticA Centre of Excellence in Biological Arts, University of Western Australia in Perth, that brought together his commissioned interests and training in contemporary art and dental science.

At the heart of Beautox Me is the other venue, the CSA Gallery, is video portraits of two actors reciting selected excerpts of Shakespeare, before and after specific facial administrations of Botulinum. In 2009, British Columbia became the first province in Canada to license dentists to administer Botulinum type A injections “for oral facial purposes.” An injection of Botulin, derived from the bacterium Clostridium botulinum, into specifically targeted facial muscles temporarily paralyzes them for approximately 3-4 months.

In the Australian preparation for the grunty Media Lab exhibition, epithelial and mesenchymal cells were harvested from an uncorrupted porcine tooth bud to explore the potential of growing enamel in vitro to produce sculptures of dental-origins tissue seeded onto a synthetic collagen-based bioceramic. When the original project fell short of its original objectives, the epithelial cells, which were expected to differentiate into the enamel-producing ameloblasts, were seeded one cell thick on glass slides and artfully glued with a layer with imaging of shark on one microscope slide and plot the following tiny inscriptions, one each on the other two slides: What is the smallest measure of life? And how deep is the skin of teeth?

The first design was the most difficult to execute, as the entire sentence was inscribed within one cell unit. It begs discussions on what constitutes the measure of viability. For example, are prions alive? These infectious agents are smaller than viruses, consist of proteins in misfolded states, and are devoid of both nucleic acids DNA and RNA.

A reference to the second inscription first appears in English in the Geneva Bible, 1560, in Job 19:20, which provides a literal translation of the original Hebrew, meaning “barely.” “I have escaped with the scythe of my fate.” The “skin” reference could well be the thin enamel coating of enamel, the hardest substance produced by the human body, and the thickness of the enamel may account for the phrase’s meaning of “narrowly.”

Sharks have a skin covering of dental denticles that protect their skin from damage and parasites and add to their streamlined form. In reality, individual denticles are minute, modified teeth with an inner core of pulp containing blood vessels and nerves covered with dentine that in turn is encased by hard enamel. With these surface properties, sharkskin was previously used like sandpaper.

An estimated 73 million sharks are killed each year for edible (shark fin soup) and medicinal purposes. The derivation of shark fins held allure; as increasing qi, preventing heart disease, and lowering cholesterol. It was once believed that ingesting shark cartilage was a potential cure as well as a preventive measure for cancer.

Forcing the animation of an autophagic human molar, with these roots gradually spinning and morphing into a shark that swims around and ultimately engulfs the viewer, is projected from the ceiling down onto a pool of black ink in which it appears to be swimming. It also serves as an antithemorphan exemplifying the belief in the aumakua, or shapeshifter. Hawaiian family god, often a shark-man—a defined ancestor that often appears and intervenes to save descendants from harm. Sensationalist shark attack movies draw groups to relive such episodes with irrational shark hunts and shark killing. However, the effective protests against this bloodbath practice, especially in Hawaii, were based on beliefs in the aumakua.

The evolution of the articulated jaw structure and associated facial musculature that reflects emotions, notably the smile, brings both shows together. Incidentally, the jaws of sharks are not attached to the cranium. Shark teeth are rootless and are embedded in the gums rather than attached to the cranium. This is to remove them more easily by sharks that bite and devour anything within close range, including each other. Some reports have a more universal appeal? How did that relate? She pondered. Did her new mask-like frozen visage turn anger to joy?

“I knew it would make me so in Denmark.” — Hamlet Act I, scene 5, 105–109

The subject of the smile embraces the grinning Cheshire cat, the enigmatic grace of La Giacosa, and the ruminations of the Danish prince. The exposure of teeth, which bears a resemblance to a smile, is often used as a threat or warning display. In Bali, bad spirits are forced to smile, will it eventually turn anger to joy?”

It’s little known that the song, The Ballad of Mack the Knife, was originally Die Moritat von Mackie Messer, based on a medieval murder ballad, and composed in 1928 for The Threepenny Opera by Kurt Weill and Bertolt Brecht. The character Mackie Messer was based on the dashing highwayman Macbeth in The Beggar’s Opera who in turn was based on the historical thief and gladiator Jack Sheppard.

The anthropomorph of villains as sharks, cold-blooded and ruthless, is perpetuated in feeding frenzy behavior: delicious feeding by sharks that bite and devour anything within close range, including each other. Some reports describe sharks attacking each other, continuing to feed even after they have been disemboweled and partially eaten by fellow sharks.

In the spare and effective presentation in the CSA space, the contrarily entitled show, Beautox Me, recalls the 1800s research in electrophysiology on the smile performed by French neurologist Guillaume-Benjamin-Amand Duchenne de Boulogne. While this scientist documented his pioneering studies on the physiology of emotion through methodical facial shocks of human faces, Khang deploys video takes to contrast and compare the faces of neurologist Guillaume-Benjamin-Amand Duchenne de Boulogne. While this scientist

As an actor, she felt that the Botox razed her landscape of emotions, saying: “I express myself to smile, will it eventually turn anger to joy?”

The theater is a space for the expression of experience. The central idea of Botox is to paralyze certain facial muscles for extended periods of time, resulting in a frozen facial expression. The mechanics of Botox injections are based on the principle of botulinum toxin for treatment of glabellar lines and forehead creases. The effects of Botox last for several months, and the results are reversible. The decision to undergo Botox treatment is a personal one, and the potential side effects should be carefully considered.

In the last two decades, Botox injections have become increasingly popular, with many people choosing to undergo the procedure to improve their appearance. However, the use of Botox injections is not without controversy, and there are concerns about the long-term effects of the treatment.

The use of Botox injections has been controversial, with some people claiming that it leads to a “frozen” or “tense” look. Others argue that it can be a safe and effective way to improve appearance. Regardless of one’s opinion on the matter, it is clear that the use of Botox injections is on the rise, and people are increasingly turning to this treatment to improve their appearance.
collagen-based bio-scaffolds originally destined to be covered in enamel was the mask of a human face. A self-limited cephalic paralysis occurs with Bell’s Palsy, the most common cause being inflammation of the facial nerve. 

While conducting research on the physiology of facial expressions in the mid-19th century, the French doctor identified two distinct types of smiles: a Duchenne smile involves contraction of both the zygomatic major muscle that raises the corners of the mouth and the orbicularis oculi muscle that raises the cheeks and forms crow’s feet around the eyes. A non-Duchenne smile involves only the zygomatic major muscle. Research with adults initially indicated that the facial expression of joy was characterised by a smile that raises the corners of the mouth by the zygomatic major muscle. More recent research suggests that a smile in which the orbicularis oculi muscle around the eye contracts and raises the cheeks high, a Duchenne smile, is uniquely associated with positive emotions. Using a 31-gauge needle, Khan injected Botox into the glabellar and forehead facial muscles of two actors: Billy, a 35-year-old Russian-Ukrainian male, and Lesley, a 35-year-old Jamaican-Scottish female. They were asked to pose for pre-injection and 2 weeks post-injection video footage while reciting highly emotive and affective Shakespearean monologues that maximally and dramatically impacted their facial expressions, with the goal of understanding the affects of the paralyzing toxin. Lesley, the female actor, receives Marcus, Titus’s brother and the troubador of Rome. From Shakespeare’s Titus Andronicus, the Bard’s first tragedy and his most graphically grisly work. The cycle of violence and revenge in the play is endless and marked by cannibalism, rape, mutilation and other atrocities.

Billy recites the porter’s speech from Macbeth, a clumsily, drunkenly delivered discourse providing comic relief while underscoring its tragic significance. The similarity of the name of the aforementioned Threespey Opera’s Mac the Knife character, Macbeth, to Shakespeare’s Macbeth does not go unnoticed. Billy takes on a second persona a Voltaire from the play’s opening speech in Richard III, where the king reflects on the facial contortions that mirror his own inner disarray (not included in this exhibition). Richard tells us he was born…

“Cheated of feature by dissembling nature, Deformed, unfinish’d, sent before my time Into this breathing world, scarce half made up…”

In the two-channel installation of Beautox Me, the HD video portraits are presented on large opposing fixed screens in the narrow and intimate gallery space. Separated by a two-week period, the images are pre- and post-Botox injections. In the second delivery of the passages, the induced facial muscle paralysis ironed out and flattened the crown’s feet and prevented narrowing of the palpebral fissures of the Duchenne smile, stopping the upper faces of emotive creases, leaving the voice inflections alone to transmit the ranges of affects. The viewer is flanked by the seemingly moribund large video images of the male and female actor presented successively, until ultimately realizing the contrasting physiognomic differences between the simultaneously presented images of each actor speaking his and her lines.

As published in Forbes and originally in the Journal of Social Psychology and Personality Science, Botox takes away or dampens the emotional feelings in a particular situation: “The mental effects of Botox may extend beyond emotional feelings to the ability to understand language about emotions.” An experimental study suggests that cosmetic use of botulinum toxin for treatment of glabellar lines affects human cognition. As reported in the L.A. Times, subjects were asked to read emotional sentences before and after two weeks after Botox injections in the corrugator supercilii muscle used in frowning. Reading times for angry and sad sentences were longer after Botox injection than before injection, while reading times for happy sentences were unchanged. This finding suggests that facial muscle paralysis has a selective effect in human cognition, and indicates that Botox hinders the ability to understand language. According to the lead researcher in this study, “Botox causes a kind of mind-numbing, cognitive blindness to information in the world, and to social information about the emotions of other people.”

White Kang’s dramatical exercise has an air of just 2. Billy’s articulate and needful post-Botox ruminations is in contrast to the actor’s depressed facial musculature and demonstrative increased rather than blunted cognition and self-reflection.

“If I hold my face in a frown long enough, will it eventually make me feel sad? Is this true sadness? What am I so sad about? Where does the emotion come from? If I feel angry, and I force myself to smile, will it eventually turn anger to joy?”

The male actor continues: “there is a certain power one gains from this immobilized mask. It prevents one from showing emotions that, especially for a man in this culture, is generally seen as a sign of weakness. I think I have in the past been made fun of for being too
effective in everyday life. I’ve never had a good poker face. Perhaps this helps me look more masculine, and better at bluffing. Perhaps it makes me a better liar. A thing like Botox is a way for people to deny pain, and death. The poster mosaic these vain attempts at self-preservation and reminds us of our own mortality.”

Lesley, the female actor, had a critical medical link to the changes that she underwent with the injections: “I really hoped it would release the ongoing spasming in my face and head and neck. It’s been plaguing me, relentlessly, for over half a decade. I’ve been unable to relax certain parts of my facial musculature and the freezing has been almost uncontrollable. I have brain injury. It’s healing. But it has had a deeply deleterious effect on my ability to learn lines (the whole complex mechanism) and my confidence in my skills. I mention this because this was a major factor in choosing which monologue to work with. I had learned Marcus’s speech from Titus Andronicus when playing the part prior to my injury: it had been deeply seared in my synapses before they were compromised. I also chose it because the emotions of horror, shock, and distress and the gradual series of realizations I ran through while performing it “seeped” themselves into my face in the form of deep furrows throughout my forehead. Perfect!”

As an act, she felt that the Botox read her landscapes of emotions, saying: “My forehead doesn’t correspond to my emotional state with the same easefulness and folding activity... My mask has been neutralized… Do I appear false? I’d mourn for my previous faculties of expression: for how deftly I cock a brow or narrow the outer corners of my eyes, slowly raise half my forehead and draw back the skin on my head in order to appear to grow younger right before your eyes. After years spent parsing and developing my muscles—my knowledge of my facial instrument; dodging, tripping its time signature, practicing in front of the mirror, the scales required to develop finely calibrated facial dexterity—Spit. Poor. All of these grace notes... gone.”

Lesley identified with and bemoaned Lavinia’s cruel framing that claimed her tongue and hands that, aside from the face, are the most expressive body parts. Like Lavinia, she lamented at what had been cut off and for what was before her alterations. As a point of reference, Khan repeatedly used beef tongues in performances, using the over-proportioned bovine body part as a prosthetic paintbrush in Zen for Mouth (2003), Buddha (2004), Times Lines (2004), Mosh (2005) and The Art of Sacrifice (2006), and Photogeocentre (2007). The Canadian academic and writer Rafaela Walcott wrote, “Khang dramatically re-languages the tongue by making a beef tongue into a prosthetic extension of his own... They thus perform this signal moment for the contemplation of a different conception of what it might mean to be human.

There are etymological points of reference. The humanness of the tongue is split when it comes to glossolalia, or speaking in tongues. For some, it is a sacred language, incomprehensible to all but the chosen. The Catholic belief is that speaking in tongues makes the gospel comprehensible across all language barriers. A smooth talker is silver-tongued; a liar speaks with a forked tongue.

As the viewer glances side to side to compare the flanking pre- and post-injection video portraits, Lesley’s voces similarly oscillate between synchrony and dissonance. She lamented the lost abilities of narrowing her eyes, raising and arching her eyebrows, knitting her brow and forced, “My face seems as if it hangs off my skull more. I can feel the skin/muscle more. I can feel the skin/muscle separate from my skull bones. Sippage? I do feel fragile... a weight along my cheekbones that I wasn’t expecting... My forehead hangs like a slab of meat around my eyes.” As an actor, she keenly mains the manceuvres of expression and of gestures. Paradoxically and contrary to what she expected, she has booked every audition since the injections. What was the meaning of this, she pondered. Did her new mask-like frozen visage have a more universal appeal? Did that reflect on her previous acting abilities? On her art? James Baldwin might have countered with his catholic commentary: “The purpose of art is to lay bare the questions which have been hidden by the answers.”

Through the popular vision of David Khan and his broad embrace of and expertise in both the sciences and the arts, he was able to transform a thwarted experiment in Australia and the use of a newly approved injectable pharmaceutical for dentists into two stunningly different exhibitions that ultimately offer impossible and insightful planes... the mashup destinies of scientist-artists, of sharks and men, of smiles and dentition, of Botoks and Shakespeare.