IBRAAZ

Interview

Coding For Change

Ayah Bdeir in conversation with Omar Kholeif

Ayah Bdeir is the creator of littleBits, an open source system of preassembled, modular circuits that snap together with magnets – making learning about electronics fun, easy and creative. An engineer, inventor and interactive artist, Ayah received her master's degree from the MIT Media Lab and undergraduate degrees in computer engineering and sociology from the American University of Beirut. Ayah has taught at New York University and Parsons The New School for Design and has taught numerous workshops to get non-engineers – focusing young girls – interested in science and technology. She is also the founder of Karaj, Beirut's first media lab for experimental art, architecture and technology. In the interview that follows, Bdeir discusses the difficulties of teaching technology

Ejet Ejet, Interactive Neon installation about the broken electricity infrastructure in Lebanon.
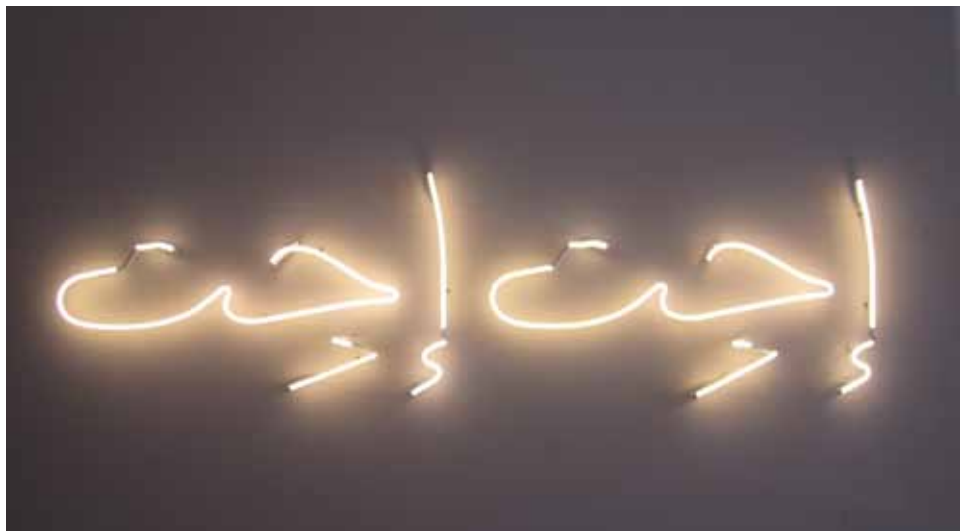
in non-traditional contexts, copyright law, and the relationship of art and technology in Lebanon and the wider region.

Omar Kholeif: You are the co-founder of Karaj – an Arabic transliteration of the garage – which for many is a site of engineering, sometimes, experimentation, and of course, a space for mechanics to fix cars. Karaj is a platform in Beirut, I assume, that is aimed at operating and functioning as a catalyst to engage the Lebanese public with creative technology. Can you tell me a little about Karaj's practical approach to experimental art and technology? Are you seeking to engage creatively or economically? What is the driving force that perpetuated the desire to found Karaj?

Ayah Bdeir: When I started Karaj in 2009, I was doing a fellowship at Eyebeam Art and Technology Center in New York and had recently completed my Masters at the Media Lab at MIT. Both those institutions were academic/non-profit spaces that were devoted to research, experimentation in art, technology, design, and collaboration at its intersections. I was creating projects that combined electronics with clothing, interactive installations that displayed spam in public spaces, and was creating a platform to make electronics a material to use in art (later became littleBits). It wasn't about a job, a task or a bureaucratic hierarchy, it was really about the process, the creative exercise, creating your own problem and trying to push the boundaries of technology to solve it.

I worked with scientists and engineers and designers and musicians and fashion designers and with laser cutters and electronics and 3D printers and fabrics. It was an extremely fulfilling and challenging experience that I got really addicted to. When you started a project, you didn't know it could become a product, or a company you just embarked on the creative process, and some of the world's most influential innovations came from that process. Then I would go to Beirut for the holidays and see how people would

Public workshops at Karaj.

be pigeonholed into their disciplines: doctor, engineer, pharmacist, banker. People who I knew to be extremely creative and intelligent, would be working at the service of large multinationals doing sales, or working in consulting. I felt that Lebanon really needed a place that celebrated research and play, without having a specific agenda or consulting mandate.

I made it my mission to try to forge a space that would speak to people who had curiosity but no outlet for it, people who had creativity but didn't see a point in letting it out. So I took Karaj, a gorgeous traditional Lebanese house with a shared space and a garden decided to open it up to the public. First, it was through workshops locally, such as the 3D Mapping workshops I organised while I was running the UFA Projection Mapping event. Then, I started to invite friends and colleagues from New York to do workshops and events. One of the early ones was a residency program we did with Parsons led by Adriana Young, bringing Masters Students from New York to spend the summer in Beirut collaborating with Lebanese students and companies on local problems.

OK: How do you compose your programme? Is it formed or informed by demand or by artistic and curatorial impetuses that you set? Is it largely workshop-based, and if so, what is it about this discursive approach that you find so enriching?

AB: The program at Karaj is formed really organically. It's usually colleagues of mine or the roomies and residents that propose an idea of a workshop, talk or competition. The only rules are: it should not be purely commercial, should involve a creative activity (for example, not a 'how to use Microsoft Office' workshop) and should be inclusive. As Karaj started gaining traction, we stared getting a lot of submissions and proposals for collaborations from international non-profits, schools and artists and that has been very exciting. I wish sometimes I could go back to Beirut and devote myself entirely to Karaj. The scene is so ripe with potential and talent and I think it would be game changing for the country and the region. But over the past months, the change has become palpable. I and GEMSi helped a group of hackers, makers and designers set up Lamba Labs, Beirut's first hackerspace, hosted at Karaj. We kicked off with a 'Making Beirut v1.0' event where each of the core members showed off their work and celebrated their thought process. Since then, GEMSi have taken the ball to a whole new level, investing in the community, growing their reach, expanding into classes, projects, workshops – it has really taken off. They are now working closely with a new retail store, Geek Express, that has given the Maker Movement an actual destination in Beirut. I'm very proud to see it all materialize and really think they are going to be part of a shift in our region.

OK: Can you tell me a little bit about how the project was initiated? Who is your audience and your membership and how has the interest been since the project begun? Are there any programme highlights for you thus far, or projects that have surprised or stunned you?

Kids making drawing robots with littleBits at the AIGA workshop in New York.

AB: In the beginning, it all started with taking a space and a website. I think it's crucial that the space itself be conducive to openness and creativity, while still being accessible, and it took quite a while to find the location in Mar-Mikhayel. There was no funding or formal program at that time. I had been a Creative Commons fellow at the time and doing research on how to apply the Open Source ethos to hardware. The first event I threw at Karaj was a party for the inauguration of Creative Commons in Lebanon. It was a great party and salon, with VJ-ing by Canadian-Lebanese artist Celine Celines (aka Céline Semaan Vernon) and in attendance was Creative Commons founder, Larry Lessig, and Open Source pioneer and Creative Commons CEO, Joi Ito. It was the perfect kickoff for Karaj: Open Source software enthusiasts gathered with architects and graphic designers and shared what they were working on and studying.

A month or so after, I was hired to work with Nomadic Dreams on a 3D mapping event for UFA. We decided not to have it as a closed entertainment event only but instead hold a competition of participants. Furthermore, we decided not to have a competition exclusively for 3D mapping professionals, but instead open Karaj up to animators, designers, artists and filmmakers to participate in workshops and learn how to express their craft on the façade of a building. This was the first series of formal workshops and review sessions at Karaj with world-renown mapping artists Digital Slaves from France. It was an amazing event. We saw people come from advertising, film, 3D animation, architecture, graphic design, VJing and other fields.

Slowly, we started to have more and more of these events, Vimeo clubs (a modern interpretation of old school book clubs), entrepreneurship events, 3D printing workshops, modern dance video sessions. We also started doing a spotlight on inventors and artists affiliated with Karaj, talking a little more about their work and process and making the statement that inventors can and should

be heroes. Then I brought on Adib Dada, a very talented architect who had just graduated from NYU's Interactive Telecommunications Program. With the brilliant Adriana Young, who had launched the New School Residency program, we started exploring ideas of sustainability as it applied to Lebanon. One internal project we started was SPF: Solar Powered Fans for people in villages that had 15 hour power cuts a day and sometimes couldn't sleep at night from the heat.

It took time, but slowly people started to take notice. They started to find a new community where not everyone was interested in the newest clubs and the newest fashions. People who were interested in the newest ideas to solve the oldest problems.

LittleBits allows kids and adults to learn and make electronics without programming, or soldering or wiring.

OK: In terms of art history – especially formally – art in North Africa and the Middle East has, for a long time, been associated with a much more craft-based approach. This has, in some respects, a lot to do with the educational structures and limitations within the region itself, but also has to do with degrees of contestation about what constitutes a canon of 'new media art'. Have these debates been of interest to Karaj, or to you personally?

AB: Very much. I think there are two really engrained postulates that we have in Lebanese and arguably Arab society: one is that new technology is to be consumed, bought, used and another one is that old crafts are to be left to the past. I believe these two ideas are inherently wrong. There is no reason we in Lebanon cannot create new technologies, new inventions, new products and new solutions to problems. There is no reason why we should import everything from the West. And the other idea is that we have age-old crafts and skills, such as glassblowing and knitting and traditional food making, clay art and so on, that can and should be celebrated and modernized, learnt from and intertwined with the newest technologies. I believe the marriage of all mediums constitutes new media art, especially when you use any and all materials and

techniques at your disposal to express an idea or a feeling or an environment in its most adequate form.

OK: Doubly, I am curious about how Karaj is engaging with social media? It feels particularly apt that you are untangling technology's creative potential at this moment in time. Too much conversation has focused on its utility as an activity tool, but it seems that Karaj is much more focused on creative potential.

Image from the 3D projection Mapping workshop held at Karaj in 2010 for the UFA 3D Mapping event.
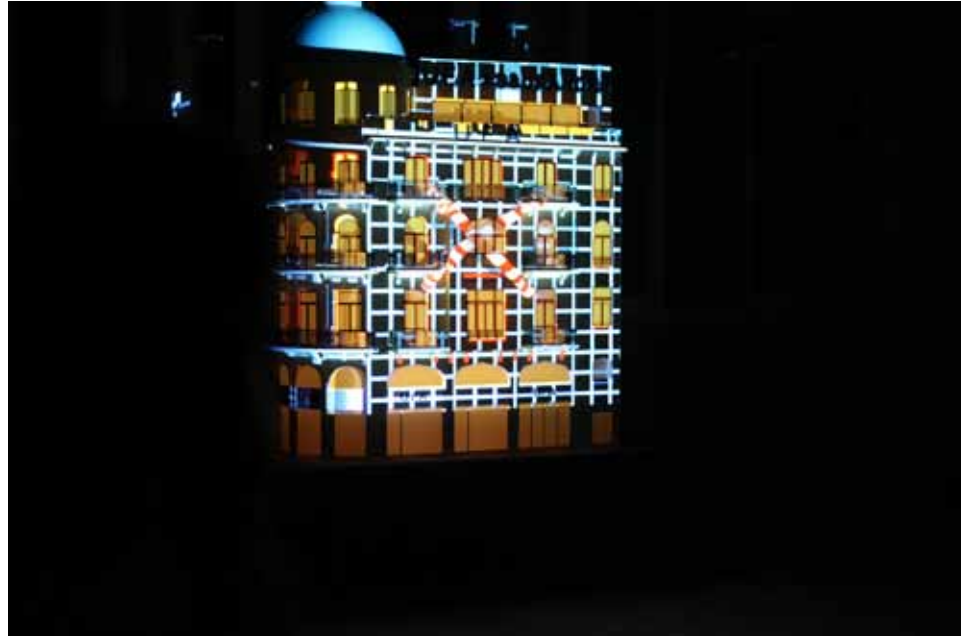
AB: I don't have specific opinion about social media, really. For me, it's a vehicle for communication across national, geographic, age and social boundaries. A lot of entrepreneurship spaces focus on developing new applications and manifestations of social media as an entity. I prefer ideas that are rooted in the physical, the tangible, the experiential, but are naturally entwined with social media.

OK: How much of Karaj has grown out of your own creative work as an artist and engineer? Does it form an integral part of your work?

AB: I would say almost entirely. Initially, my desire to start Karaj came from a selfish place. I wanted to have a community of people to talk to, to be inspired from and to share my work with. My tenure at the Media Lab, Eyebeam and Creative Commons have changed my life as an engineer and an artist. They allowed both sides of my brain and craft to come together in the most natural of ways and I wanted to have that same environment in Beirut.

OK: Tell me about your project littleBits and how it evolved over time and what the reception has been?

AB: littleBits was a small project I made over a few weeks at Eyebeam. I never knew it was going to be a product, let alone a company. It was a prototype that I made to give to product designers in the hopes of enhancing their creative process, allowing them to use light, sound, sensors as if they were cardboard, paper, screws. Suddenly, I had the littleBits prototypes on my desk and people

would pass by and say it was great. I put pictures on my website and people started emailing saying they wanted to buy it. At that point, there was one version and it was hand made! I took it to a couple of exhibits and MakerFaires and kids would line up with their parents to try to buy it. I started to spend more and more time on it, improved the prototype, tested it again. I developed magnetic connectors, found a factory in China and went there multiple times until I had a production prototype. The entire process took over 3.5 years and I had been teaching at NYU and Parsons, consulting, and doing my own artwork. Every penny I made, I sank into littleBits. I didn't know what was going to come out of it, but I became obsessed. In September 2011, I started a company and, as of now, we have produced over 35 products, sold tens of thousands of kits, we have over 16 people on the team and have won over 14 toy awards. We have received incredible responses from kids, parents, teachers and schools. It's extremely exciting to remember how it all started, from curiosity melded with obsession and a lot of perseverance.

OK: I read somewhere once that your work uses technology to untangle subconscious representations of Arab identity. Can you talk through this and explain how it manifests in your individual works? What brought you to these particular articulations and why?

Lamba Labs hackerspace members showcasing bartender robot at Karaj during Making Beirut exhibit.

AB: When I first moved to the US and to Boston specifically, I hadn't ever *really* thought about my identity: being a woman, being from the Middle East, being Mediterranean and even being an engineer. I had taken it for granted most of my life. And now I had people on the streets in Boston asking me how come I don't look Arab, or whether or not I belly danced, or if women really were allowed to work. So I started thinking about identity in a more focused way. Not exactly identity, but more the representation of identity, for example: the way we represent ourselves and the way the media represents us. I started to create artwork that took stereotypes about Arabs and magnified them. One such piece was *Arabiia* (2005), a robotic dress that transforms from a belly dancer to a burka. In *Teta Haniya's*

Secrets (2008) I took the ritual of Syrian women making electronic lingerie and created a fictional character that came to the US to teach American women about sexual liberation. In other pieces, such as *Random Search* (2006) and *Ejet Ejet* (2011), I took a serious subject and expressed my frustration by creating a passive solution to the problem. *Random Search* was a body suit that you wear under your clothes when you travel, and it has pressure sensors all over that collect and record the search process on your body, so you can later replay it or visualize it. *Ejet Ejet,* my newest piece, is a interactive neon sign which looks at the broken electricity infrastructure and creates a persona out of electricity, a persona that runs our lives but remains elusive. Every one of my pieces comes out of anger or a sense of shock that I want to get out. I find it very therapeutic, the process of going into more in depth, when it comes to issues and learn about their roots.

LittleBits, a kit of electronics that snap with magnets for prototyping, learning and fun.

OK: I am curious who you see as your peers in the art and technology world, both within Lebanon, the Arab world and internationally?

AB: In Lebanon, for sure Lamba Labs, Geek Express, GEMSi. I also really relate to a lot of activity starting to happen within design studios and companies such as Polypod, Apractice Studio, Minus5 Architects, Hind Hobeika, schools such as ALBA, creative spaces including Seeqnce, AltCity, Design Week, Nasawiya and so on. Internationally, the list is long. I really identify with the interactive art community, people who use code, hardware, robotics and other technological media as a craft or an art, it's a growing, but already huge community, and New York is a very vibrant hub of it. Also, I am one of the founders of the Open Hardware Summit (www.openhardwaresummit.org) and so that community is one I really feel embedded in and which now spans the entire world. The hardware revolution is here, now the rest of the world just needs to take notice.

Ayah Bdeir, founder and CEO of littleBits, is an engineer, interactive artist and one of the leaders of the open source hardware movement. Ayah's career and education have centered on advancing open source hardware to make education and innovation more accessible to people around the world. She is a co-founder of the Open Hardware Summit, a TED Senior Fellow and an alumna of the MIT Media Lab. Originally from Lebanon and Canada, Ayah now lives in New York City.

About the author

Omar Kholeif is an Egyptian-born, UK curator, writer and editor. Most recently, he was Curator at FACT, Liverpool, the UK's national centre for film and new media, and carries on as senior curatorial associate. He is also a Visiting Curator at Cornerhouse, Manchester, Curator at the Arab British Centre, London and founding Director of the UK's Arab Film Festival - a touring programme, which occurs annually. He is a Curator for the Abandon Normal Devices Festival, formerly a Curator for the Liverpool Biennial of Contemporary Art, Impakt Festival in the Netherlands, and Werkleitz Festival, among others. Kholeif has curated projects and events, which have occurred at the Whitechapel Gallery, London; ICA, London; The International Film Festival Rotterdam; 'Beirut' in Cairo, Rhizome, New York, and Art Dubai, to name but a few.

Omar writes for the international press and was a founding editor of Portal 9, the only bi-lingual (Arabic/English) journal of art, literature, and architecture, published in Beirut. His most recent edited/co-edited collections include, *Vision, Memory and Media* (Liverpool University Press 2010), F*ar and Wide: Nam June Paik* (Leonardo, 2013), and he is working on two new collections of essays. As of 2013, Kholeif will co-direct the residency and media programme for SPACE, London and its new cultural centre, The White Building. Kholeif holds degrees from the University of Glasgow, Screen Academy Scotland and the Royal College of Art, London. He is a Fellow of the Royal Society of Arts.