## WEEKEND

# Giving us pause for thought

What goes on inside us when we think, remember, imagine? A team in Haifa is plumbing the world of consciousness by using advanced tools to observe subjects who are meditating. The interventions they've developed on that basis enhance mental health – as seen among African refugees in Tel Aviv



Meditating in Australia. The Observing Minds Lab has developed a tool that creates quasi-thoughts in people's minds and examines their responses, and a tool like a treadmill in a heart lab: Instead of monitoring pulse rate, it examines the meditational state.

Paul Kane / Getty Images

#### Dani Bar On

lose your eyes," said Amit Bernstein. "Imagine that you're in your kitchen, holding a lemon in your

mindfulness according to an authoritative American source is "the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally, to the unfolding of experience, moment by moment." associations between certain mental phenomena and the focus of external attention - in other words what we notice more about the world around us. For example, there are myriad studies showing that depressives tend to look longer at images of sad faces than non-depressives. But in Bernstein's opinion, such studies (in which he too participated in the past) are not very helpful, because they are effectively looking for the ever-elusive keys under the streetlight. "For decades, the research paradigms focused on external attention, but if you are interested in people's mental life, I'd place my bet on the influence of internal attention," the professor explains. "I need to be capable of investigating your thoughts." The problem is that studying internal attention is far more difficult. How is it possible to discover how much attention a person is devoting to one thought as compared to another? This is the immense challenge that Bernstein and his lab associates have taken on themselves, and in recent years they have had successes. For example, they have developed an advanced tool that makes it possible to create quasi-thoughts in people's minds and to examine their emotional response to each thought. Another tool they have developed is the meditational equivalent of the treadmill in a heart lab only instead of monitoring pulse and respiration rate in physical activity, it examines the components of the internal mental experience during meditation. With these instruments, the team aims to develop futuristic meditative interventions that are tailor-made for the individual who is being treated and their problem. But the work in question is not confined solely to the dim corridors of a university psychology department. Bernstein and his team are applying mindfulness-based interventions to assist a community that experiences particularly extreme levels of mental distress: African asylum seekers living in Israel. Many of these people who live among us, and have endured unimaginable horrors, experience frightening levels of depression, anxiety and posttraumatic disorder. In painstaking work during the past decade, whose principal findings were published last May, the researchers were able to show that an adjusted mindfulness program that they developed significantly reduced local asylum seekers' levels of symptoms. They are now trying to reprise the project in the hope of diminishing the suffering of tens of millions of refugees of war and individuals suffering from forced displacement, in a world that is going through the most serious refugee and migration crisis since World War II.



Driving in a hailstorm, for example, is an experience that will frighten almost everyone. Drivers will experience physical discomfort, their hearts may pound, they may perspire. But the question is whether they will continue to drive slowly and carefully. Will they

hand. Slice it down the center and peel it a bit. Now hold the lemon up close to your nose and sniff it. Open your mouth. Take a bite into it."

My face scrunches up and a small smile of triumph crosses Prof. Bernstein's face. "You're not really holding a lemon, but your mouth is full of saliva. This is one of the amazing properties of human mind. We are so capable because of language. Think how important it is to mental time-travel, how important abstraction is. But it has an immense price."

Just as it can be said that when human beings began to walk upright, it freed their arms and hands, although it made them more vulnerable to back pain (as some anthropologists claim) – the improvement of our thinking ability opened up infinite possibilities but also introduced no little misery into our life. It's hard to know what dogs are thinking, for instance, but it's reasonable to assume they don't get upset about an overdraft at the bank. Humans do.

Bernstein, who has a doctorate in clinical psychology, and his colleagues in the Observing Minds Lab at the University of Haifa are gradually uncovering the dynamics of the world of thoughts. Their hope is that they will be able to reduce distress in the internal space in which it is created. Without recourse to psychiatric medications or lengthy and expensive psychotherapy, they ask, is it possible to get a hold of sticky thoughts that cause distress by strengthening or relaxing hidden attention muscles? And why do these thoughts become stuck in the first place, whereas other thoughts glide down the stream unhindered?

"During the past few years, we have been investigating mainly how people process all kinds of private experiences that cannot be observed externally," explains Bernstein. "Thoughts. Memories. Imaginings. Physical sensations." All these are subsumed under the heading of internally directed cognition – IDC – "and through them we are seeking to understand the mechanisms of IDC, how cognition shapes our mental life, how it shapes our suffering."

Bernstein is not a "meditation researcher" per se. But meditation – more precisely, mindfulness meditation – is a key element in his research: He believes it has a powerful ability to exercise long-term influence on the mechanisms of IDC.

A generally accepted definition of

Research into the phenomenon of mindfulness – a practice that has been woven into East Asian traditions, such as Vipassana meditation – has grown rapidly in the past two decades, to the point where it is now conducted in dozens of labs worldwide. The findings show a positive influence of mindfulness-based interventions on a large number of mental and physical disorders and illnesses, from irritable

Analyses of data, articles about how meditation can help curb chronic stress, and the obvious need among tens of millions of refugees for inexpensive, simple treatment led to a field project at the lab.

A sequence of thoughts is often likened to a train on a track where there's room for one car. Bernstein suggests a more precise image: a one-lane road that crosses intersections, in rapid succession.

bowel syndrome to psoriasis. While there are still many unanswered questions, and some findings are less encouraging, there are some persuasive, well-founded studies in this field - for example, in regard to depression. In November, the British Ministry of Health announced that it would be revising its therapeutic protocol for persons suffering from slight to medium levels of depression by recommending therapy, exercise, mindfulness or meditation before resorting to antidepressants. By now there is little doubt that mindfulness practice can be beneficial, but what really happens "under the hood," so to speak, remains largely a mystery.

When Bernstein began investigating the world of cognition, he operated in a psychological atmosphere in which most research focused on the Jerusalem to a chemist mother and a physicist father, and spent his early years in Haifa. When he was in second grade, the family immigrated to the United States, where he lived until the age of 32. As a result, he is more fluent in English than in Hebrew, and shifts effortlessly from one language to the other, sometimes in the same sentence. This does not necessarily make it any easier to follow his ideas, which are complicated to begin with.

After he finished his bachelor's degree in psychology, he says, he embarked on an extensive soul-searching journey in the East.

"I got to a tiny island in Thailand," he relates, "where I met a couple who asked me what my childhood aspirations were. That freaked me out, because I didn't remember, and I thought about it for a few days on that beach. In the end I remembered that as a kid I dreamed of learning how to sail. I went to Phuket, stood on the wharf and looked for work on a yacht."

After two weeks of failed efforts, Bernstein was hired to work on a luxury yacht with the symbolic name Dream Keeper, and embarked on a long voyage to Indonesia. "I understood that I had a great deal to learn about deep-water sailing, but had no interest in learning the ropes or in anything else having to do with to the boat – only in the dynamics between the staff. How the guy from Seychelles gets along with the Frenchman, their life stories, why they quarrel, why

Amit Bernstein was born in 1976 in erusalem to a chemist mother and a hysicist father, and spent his early ears in Haifa. When he was in secind grade, the family immigrated to the two skippers almost killed us all when they got drunk and the boat ran aground. It was a whole human ecology, afloat in mid-ocean. At the next stop, Singapore, I jumped ship."

On the way home he stopped off in India, where he learned to play the sitar, and met an Israeli woman named Vered who would become his wife. He persuaded her to travel with him to the United States, where she studied software engineering and he completed a doctorate in clinical psychology. Following a postdoc at Stanford, he put out feelers to obtain an academic post in North America. Then an opportunity suddenly arose in Haifa and he returned to Israel, living in the house where he grew up, on a quiet street on Mount Carmel. He and his wife have three children.

#### 'Working downstream'

At the beginning of his career in the early aughts, Bernstein researched a psychological concept called "distress tolerance." He would administer carbon dioxide-enriched oxygen to subjects in order to generate a physical response associated with anxiety attacks (a rapid pulse, for example). Bernstein found that what most affected the subjects was not the intensity of their physical reaction to the enriched air, but the interpretation they gave to it - in other words, how afraid they were of the fear. That, in turn, was found to be a strong predictor of anxiety disorders.

pull over and cry? And the following day, when the weather is better, will they have difficulty taking the wheel?

Though the studies he and his colleagues conducted had led to impressive publications, Bernstein was drawn more to the underlying factors that explain such phenomena. As he saw it, the question of how the psyche responds to physiological signals from the body comes too late in the sequence. He sought to locate the exact place in the mind that chooses from the outset what to focus on: physical sensations, thoughts, emotions – or perhaps on nothing in particular.

Bernstein: "I felt like I was working way downstream instead of at the source of the river. What are the fundamentals of this IDC, how can I influence internally directed cognition – not in the rapids near the end of the river, but at the place where the water bursts from the earth. Accordingly, along with other research groups around the world, I proceeded to focus on the basic building blocks of mental life: attention and awareness."

At this juncture, Bernstein's work intersected with his own habit of practicing mindfulness meditation, which he's done off and on since adolescence.

One justification for research in this field its huge scope. According to Bernstein, many studies show that we only direct our attention to external phenomena for about half of our waking hours. If the average Israeli sleeps seven hours a night (as data of the Central Bureau of Statistics show), this means that they are engaged in internal observation for 8.5 hours every day. A small part of that time is devoted to noticing physical feelings, such as pain, hunger and pleasure but most of it is occupied by thoughts: mental time-travel, concerns relating to the future, reflections of various kinds.

I would have surmised that in the smartphone era, people listen less to their internal selves.

"On the contrary," Bernstein replies. Our thoughts wander least, he says, in contexts that demand our concentration, like during his own demanding workout routine, in which a lack of attention is liable to end with an injury. But scrolling down on a phone requires zero attention. You think you're on a "smartphone," but your mind is actually elsewhere: "I would not be surprised if it turns out that today we are more internally attentive than in the past."

What exactly is in there, on the in-

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side? A person's sequence of thoughts is often likened to a train: Thought follows thought along a track where there is always only room for a single car. That is correct and not correct, however. On one hand, one's internal monologue or dialogue apparently does take place in a single channel only, because the brain uses the same mechanisms to produce regular, audible speech and our own internal speech. In this sense, Bernstein explains, there can only be a single, lone thought at any given moment.

On the other hand, there are constant attempts to integrate other inner experiences and thoughts into the flow of movement. As such, he suggests, a more precise image than that of a train would be a one-lane road that crosses intersections one after the other, in rapid succession. At each intersection an attempt is made to introduce into the consciousness other memories, daydreams, physical feelings and responses to external stimuli. "There are many objects that want to grab our attention, and the brain is constantly required to make a selection," Bernstein notes. "Your attention is caught in a split second, at the speed of light."

#### **Right ear, left ear**

To study empirically and statistically what happens in the internal mental world, the Observing Minds Laboratory has developed two major tools: one, called Mindfulness Awareness Task, which tracks the meditation process in real time; and another called the Simulated Thoughts Paradigm. The experience with the thoughts simulator was very powerful: I sat in the lab and listened through headphones to a series of statements. The right ear heard negative statements: "It's hard for me to concentrate"; "I'm so angry at myself"; "I'm useless." The left ear heard neutral statements: "I'm sitting in front of the computer"; "Over the weekend I can rest"; "I brush my teeth every morning."

Most confusing was the fact that the voice in the recording was mine. The feeling that was intended to be created – and was, to a large extent in my case – is that I was listening to my own thoughts. It was so weird I burst into laughter.

My task was to discern when and on which side I heard two identical statements, one after the other. The staterelated to increased depression and anxiety.

In my personal case, an average difference of 55 milliseconds – an eternity in terms of cognitive research – was found in regard to the negative statements in a similar task. They stuck to my consciousness like lice in hair. The top statements here were the mild "Nothing feels good to me" and the classic "I'm worthless." Interestingly, a statement I had marked as neutral insinuated itself into the collection of so-called clinging thoughts – "Tonight I'll go to sleep early" – which, upon reflection, I understand is far from neutral.

According to Amir, STP could have therapeutic implications. For example, it may be possible to use it to train patients to direct less attention to thoughts that distress them. "I will play the thought for you, measure your reaction time, and if it's slow, the computer will give you feedback and you will be able to improve."

The second tool the lab has created, MAT, is intended to empirically measure for the first time, what occurs in meditation, in real time. Subjects are asked to plunge into 20 minutes of mindfulness meditation while reporting everything they experience immediately by means of a computer. There's no need to open one's eyes: With every inhalation or exhalation, the person simply presses a key on the keyboard. When a feeling or a thought arises, its essence is reported verbally by subjects, by means of a head-worn microphone. It sounds weird - a bit like having sex in the laboratory – but for me, with a certain experience in meditation, it was quite natural.

According to Yuval Hadash, a doctoral student in the lab, who developed the tool with Bernstein, there is now a means for showing what happens in the black box of meditation. "Until now," he says, "people sat with their eyes closed, wherever they were, and it was impossible to know what they were experiencing." A forthcoming article will reveal, among other findings, that people who are capable of quickly recognizing that their thoughts are wandering, also possess a greater capacity for regulating their emotions and have fewer symptoms of depression.

Furthermore, just as testing the heart under stress can aid in adjusting a patient's treatment, the "treadmill" for meditators could help the meditation teacher tailor a personally adjusted practice for the meditator. My MAT experience, for example, vielded conclusions more valuable than many of those I had reached in Vipassana retreats. Analysis of it showed that I excel in the realm of paying attention to breathing and to thoughts - an almost perfect Buddha. My weakness, if that word is applicable to meditation practice, was that I pay attention only to negative experiences.

Other subjects examined during

from Africa who lived near him in Tel Aviv. Yuval wondered whether anyone in academia – in Israel or abroad – was researching the mental health of this community, Bernstein says now: "These people had undergone inhuman experiences. Torture. Having your homes and your village burned to the ground. Seeing members of your family raped, killed. Human trafficking."

The two researchers considered the idea of conducting a psychological-anthropological study with the aim of discovering what accounted for the community's apparent resiliency. "Look at them, at how well they're doing," Bernstein says with a bitter smile, recalling what he thought then. "They're functioning, moving around, having children – great. Let's find out what makes them tick."

That naïve question thrust the lab into a dark and upsetting pit.

"Very quickly we discovered that the distress level among them is the most serious I've encountered in the literature among any popula-

tion group," he says. "I'm not talking

about the ones who sought therapy,

but about people whom we sampled

randomly on the street, in cafés, in

NGOs, at the Central Bus Station [in

Tel Aviv, near which a large num-

ber of African asylum seekers live].

There were particularly extreme

rates of depression, anxiety, suicidal tendencies and domestic violence. At

According to one sample, 55 per-

cent to 85 percent of the asylum seek-

ers were suffering from PTSD - six to

10 times higher than the average in

what these people are experiencing,"

the professor notes. "Most studies of

displaced persons were conducted

in properly run countries, where the

refugees are integrated and receive

legal status along with employment

and education and welfare services.

Trauma healing requires stability, so-

cial support and a feeling of being in

control. The policy in Israel does not

allow that. As a research group, we

felt a commitment not to address this

phaned in the Holocaust, sees the ref-

ugee project, called Moments of Ref-

uge, not only as a scientific mission;

to him it is also a moral obligation. "I

feel a great deal of frustration and an-

ger over the way our country treats

Bernstein, whose mother was or-

problem only in the abstract."

"We realized that we have no idea

first I didn't believe the data.'

Israel.'

oppressed peoples, such a short time after we ourselves were in a similar situation."

A forward lab was established at the bus station. As researchers began to examine several parameters, they discovered, to their surprise, that the natural trait of being attentive to/aware of the present moment provided a certain protection against the consequences of trauma. People who had this tendency healed better.

"If I had been asked whether mindfulness meditation could help asylum seekers cope with their impossible present and their traumatic past, I would have laughed," Bernstein admits. "[At first] we didn't think in that direction at all." But analyses of the data, together with articles in the professional literature about the possible effects of meditation on curbing the impact of chronic stress, coupled with the obvious need among tens of millions of refugees worldwide for treatment that is inexpensive and simple to implement – led to a field research happened to him. "I will never forget anyone who accompanied me to this point," Habtai told Bernstein, who "was moved to tears."

The coronavirus pandemic has disrupted the lab's work, but it continues to operate online. At momentsofrefuge.com, there is an abridged emergency, prerecorded version of the mindfulness workshop for anyone interested, in Arabic, Tigrinya and English. Bernstein says that they have collected encouraging findings even from this rather partial, virtual experience.

As part of my work on this article, and also in the hope of being helped myself, I started to take part in the English-language course, given in the soothing voice of Dr. Orit Reem, a clinical psychologist and meditation teacher. The classes were short and the instructions were not demand-



out," Be'er says. "There are many people who do not continue such undertakings, even piano lessons. Even so, I wanted to find out whether there is something special about mindfulness." Be'er interviewed about 80 people who had just completed a mindfulness course, as well as dozens of veteran meditators and teachers of meditation, and heard about the difficulties they have in persevering. "A large part of them conceived."

"A large part of them, especially the beginners, stated that they find it difficult to get themselves to sit for practice," he says. "They told me it's like running. I asked whether they are able to persevere in running. Many said they do." Ahh, so maybe it's not exactly like running.

"When you run, you get immediate feedback," he continues. "Even if you are totally out of shape, within a couple of weeks you will succeed in running two or three kilometers. Mindfulness practitioners don't always know [whether they are benefiting from it]. In fact, there were even meditation teachers who told me, 'I've been practicing for 10 years, yet I don't understand exactly what has changed.' On the other hand, there are people who have a specific problem - sleeplessness, for example. Meditation helps them a great deal, and afterward they see no point in continuing. One woman told me, 'I was in a terrible state, now I've found love and my life has come together. Why practice [meditation] now?" 'To practice meditation is to act contrary to your brain, contrary to the basis of human nature. The 'monkey mind' [a Buddhist term referring to the mind's tendency to jump about restlessly, the way a monkey leaps from tree to tree] doesn't want to give up its control. It will do all it can to thwart that.'



A mass meditation gathering on Balfour Street in Jerusalem, last year. "There are meditation teachers who told me, 'I've been practicing for 10 years, yet I don't understand exactly what has changed," says student Assaf Be'er.

ments were voiced simultaneously in both ears, and it was confusing. But most confusing was the fact that the voice heard in the recording was mine. The feeling that was intended to be created – and actually was, to a large extent in my case – is that I was listening to my own thoughts. It was so weird that I burst into laughter.

A few days before the experiment the lab had sent me a list of 80 statements. I was asked to record all of them in my voice and to rank the frequency with which I have thoughts like these and how I feel about them according to a quantitative scale. The team then compiled a set of statements that was personally adjusted to my internal mental world. After the recording, the files were technologically altered in such a way that they would sound less "external" and more "internal."

According to the doctoral student Iftach Amir, who developed the STP tool with Bernstein, the reason that it strikes people as odd when they hear a recording of themselves is that their voice typically sounds too high to them. The reason for this is that when you hear yourself talk, a large part of the sound emitted by your speech passes through your skull, which essentially emphasizes the lower frequencies. In advance of the experiment, the researchers cut out the high frequencies, and the result was convincing.

There are a number of reasons to believe that playing a recording of a subject's voice to them will cause them to feel, to some degree at least, that they are hearing their own thoughts. We know that the brain treats the voice of its owner differently from other voices; in fact, the regions of self-attribution light up in your brain when you hear your own voice and when you think a verbally expressed thought is about yourself. In a certain sense, it can be said that Amir and Bernstein found a way to break into the brain.

The results attest to the validity of the method: Their research, published in the journal Scientific Reports a year ago, showed that the "negative" thoughts interfered with the subjects' ability to execute tasks demanding external attention. That is, these sentences really acted like thoughts in their minds. Moreover, it was revealed that the subjects who were especially bothered by negative thoughts had a general tendency to repetitive negative thinking. This tendency is in turn MAT experiments were also far more attentive to negative experiences than to positive ones (eight times more, to be precise), but my case was exceptional: I paid attention to 16 negative experiences and zero positive experiences. My inner world, as reflected in these rare and documented moments allowing me to peer into it, is a black hole of rotten feelings without so much as one moment of grace. "That's a disparity worth pausing to reflect on," Hadash remarked tactfully.

In the meantime, Bernstein's lab is launching a new project that will use of a range of tools developed by the team to understand in depth what happens to the brain following a meditation retreat. Initial findings show that it reduces the responsiveness to negative thoughts, while at the same time the participants' range of experiences is broadened.

"What's amazing about this finding is that the retreat did not reduce the negative experiences," Bernstein says. "It simply broadened the spectrum of the experience so that it includes more signals that are pleasant."

#### The African angle

A fateful day for the Observing Minds Lab occurred in 2010. Dr. Kim Yuval, who was then a PhD student and is today a clinical psychologist, mentioned to Bernstein that he had brought hummus to asylum seekers



Participants at an Observing Minds Lab mindfulness workshop, held in the Kuchinate center for African asylum seekers in Tel Aviv. Solomon Gebreyohanes

project headed at the lab by doctoral student Anna Aizik-Reebs.

The team developed a mindfulnessbased group workshop adapted to the participants' trauma history and cultural background. Special care was taken to reduce the possibility that the program would produce adverse effects. For example, the instructions allowed for the option of meditating with eyes open, for fear of flashbacks if the eyes were closed.

After a few years of preparation, 158 asylum seekers from Eritrea were divided randomly into a control group and to workshop participants. The findings showed a clear reduction of posttraumatic stress disorder, depression and anxiety, as reported by the participants, together with general wellbeing immediately at the conclusion of the workshop - an improvement which was largely unchanged when followed up five weeks later. The intervention was found to be safe for all participants. In an article published last year in the journal Clinical Psychological Science, the research team noted that the effects achieved are on a par with other known shortterm interventions, such as narrative psychotherapy. They acknowledged that the results need to be replicated and their method's effectiveness have to be examined over time, but they believe their achievement is promising.

"It's good that they are working there," says Prof. Yair Bar-Haim, from the School of Psychological Sciences of Tel Aviv University. "These people constitute a weak population group, and there isn't necessarily anyone who will invest large resources in them."

Bernstein is quite a special person. As expected of a successful researcher who has accumulated nearly 10,000 citations in the scientific literature, he is extremely busy, almost unreachable. It's not surprising, then, that he hasn't previously given an interview to the Israeli media, even though he's been in the country for 14 years. But, in a face-to-face encounter, he is very accessible and friendly.

But in a conversation about the Moments of Refuge project, he grows serious. "This is the most important work I do," he says simply. A book on mindfulness published about a year ago ("My Year of Living Mindfully," by Australian journalist Shannon Harvey) quotes the testimony of Dawir Habtai, who reached Israel after five years of torture in an Eritrean prison, took part in the meditation project and related that it was the best thing that had ever

Hila Shiloni / Young Academy of Sciences of Israel

Prof. Amit Bernstein (above): 'We've been investigating how people process private experiences that can't be observed externally, and we are seeking to understand how cognition shapes our mental life, our suffering.'

ing, and one could practice what was taught anytime and anywhere. Besides, I had a powerful incentive: I could practice during work hours without having guilt feelings. I listened to a few classes and did a number of exercises, and it even seemed to me that I was benefiting from them, yet I found myself struggling to persevere. Toward the end I dropped out. The problem of lack of perseverance in mindfulness meditation is well known. Indeed, even in the Observing Minds Lab, where the team is engaged every day with various aspects of the usefulness of this prac-

aspects of the usefulness of this practice, many do not meditate regularly. Bernstein himself admits that he sometimes "falls off the wagon." The question of why a practice that is supposed to be so pleasant is also so difficult, is at the center of the doctoral dissertation of Asaf Be'er, from the psychology department at Tel Aviv University, under the supervision of Prof. Shulamith Kreitler.

"One study showed that there is a dropout rate of 30 percent in mindfulness courses, and in a three-year follow-up, another 50 percent drop "It's hard to meditate every day," Bernstein notes. "It's easier to watch Netflix."

That's what most people do to cope with their negative feelings and clinging thoughts, isn't it? Distraction.

"Mindfulness doesn't do that."

But what's wrong with distraction? "Nothing. Studies show that is can help, temporarily, especially in regard to strong feelings. But distraction from traumatic memory won't help you heal, or thrive in the long term."

One of the important questions about our inner world is to what extent we identify with the thoughts it conjures up: Whether we see them as merely a not especially important mental flash, the way we usually treat weird dreams, or as a necessary expression of our inner essence. A classic example offered by obsessivecompulsive disorder therapists is the thought that every parent has occasionally: what would happen if they throw their small child out the window. Obsessive people apparently no longer entertain such thoughts – they are just more anxious about them. "One of the reasons certain people think a thought and spin out of control is their reaction to its content,' Bernstein explains. "We respond to the fictitious narrative of our mind as though it were true. It's no different from the example of the lemon."

But the difference is that in the case of the lemon, you arouse your thoughts by yourself.

"You arouse them, or your past does. The way your parents treated you arouses them, or someone else wrote them in the syntax of your code. People don't construct themselves on their own."