
Contact

Artist Statement

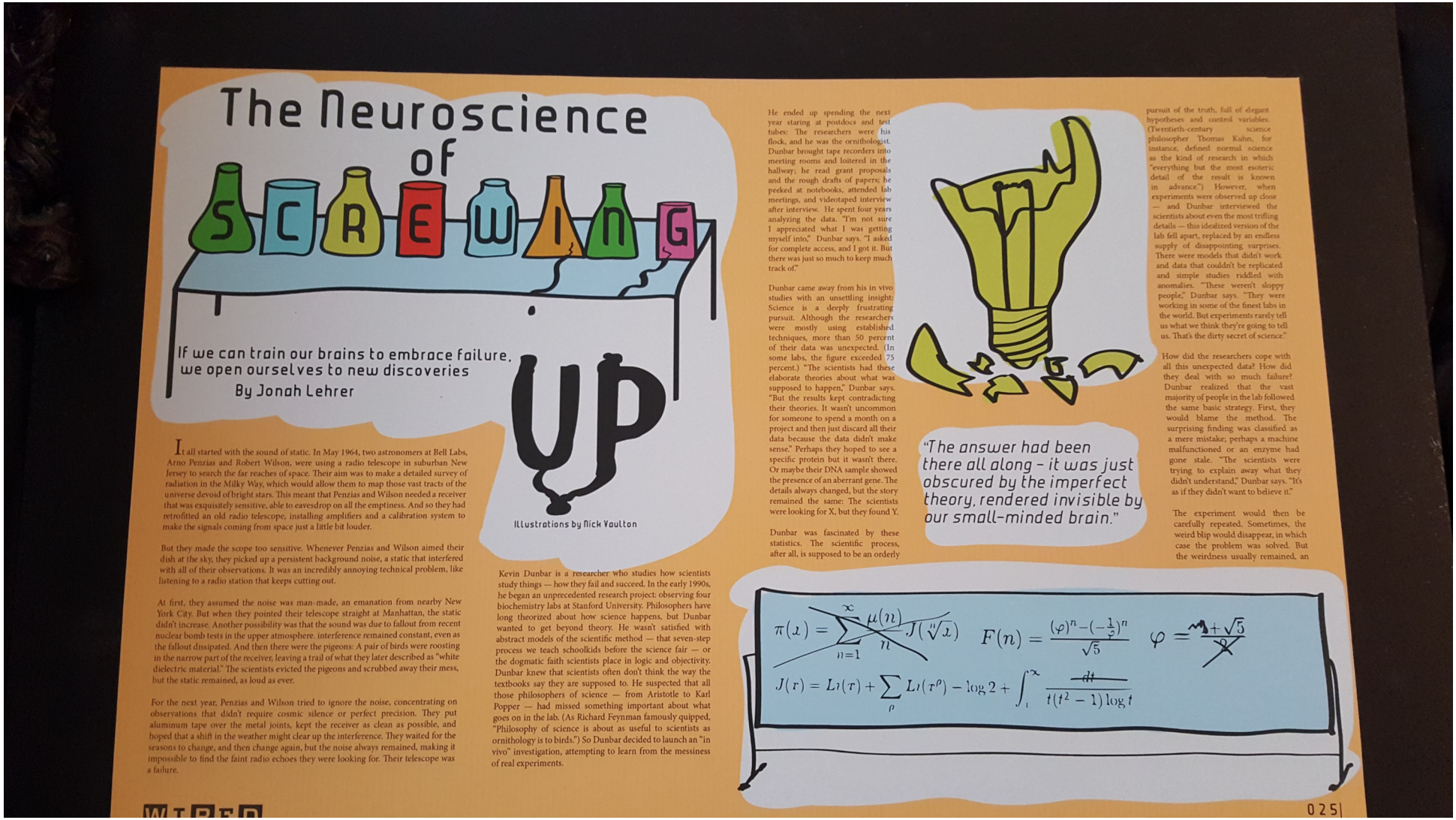
Nick Vaulton

The first time I was ever exposed to graphic design came from an odd place. I was involved with a number of people who all liked to play the computer game StarCraft. They had their own forum to hang out in and many of the users had small banners to decorate their posts made by those who were artistically inclined. It was these simple images that first inspired me to create digital art and led me down the path I follow today. Through the many years of education I have come to develop my own style while holding knowledge on how to create a variety of images, based on the task at hand.

I've been exposed to everything from business cards to alcohol packaging and how to effectively design for all of them. However, the one thing that truly drives my work is color. While I can design in black and white, to ignore color is to ignore my favorite part in all art. I've found great power and expression through the use of color and have been able to make many good pieces into great through its use. I am grateful for all the knowledge imparted to me through my education at Colorado State University and hope to utilize and grow from it as my career blossoms.

	Title	Media	Original Format
Figure 1:	Nick Vaulton Creative Resume	Digital Illustration	Illustrator, 17 in x 11 in
Figure 2:	The Neuroscience of Screwing Up	Digital Illustration	Illustrator, 17 in x 11 in
Figure 3:	The Dark Town Book Jacket	Digital Illustration	Illustrator, 17 in x 11 in
Figure 4:	Radiohead Album Cover	Digital Illustration	Illustrator, 15 in x 15 in
Figure 5:	Midtown Typeface	Digital Illustration	Illustrator, 11 in x 17 in
Figure 6:	New Foothills Mall Poster	Digital Illustration	Illustrator, 11 in x 17 in
Figure 7:	CIIPE Logo	Digital Illustration	Illustrator, 11 in x 17 in
Figure 8:	Midtown Fruit Box	Digital Illustration	Illustrator, 11 in x 17 in
Figure 9:	Internet Freedom	Digital Illustration	Illustrator, 11 in x 17 in
Figure 10:	The Exhibition Advertisement	Digital Illustration	Illustrator, 11 in x 17 in

Figure 1: Nick Vaulton Creative Resume



The Neuroscience of SCREWING UP

If we can train our brains to embrace failure, we open ourselves to new discoveries

By Jonah Lehrer

Illustrations by Nick Vaulton

It all started with the sound of static. In May 1964, two astronomers at Bell Labs, Arno Penzias and Robert Wilson, were using a radio telescope in suburban New Jersey to search the far reaches of space. Their aim was to make a detailed survey of radiation in the Milky Way, which would allow them to map those vast tracts of the universe devoid of bright stars. This meant that Penzias and Wilson needed a receiver that was exquisitely sensitive, able to eavesdrop on all the emptiness. And so they had retrofitted an old radio telescope, installing amplifiers and a calibration system to make the signals coming from space just a little bit louder.

But they made the scope too sensitive. Whenever Penzias and Wilson aimed their dish at the sky, they picked up a persistent background noise, a static that interfered with all of their observations. It was an incredibly annoying technical problem, like listening to a radio station that keeps cutting out.

At first, they assumed the noise was man-made, an emanation from nearby New York City. But when they pointed their telescope straight at Manhattan, the static didn't increase. Another possibility was that the sound was due to fallout from recent nuclear bomb tests in the upper atmosphere. interference remained constant, even as the fallout dissipated. And then there were the pigeons: A pair of birds were roosting in the narrow part of the receiver, leaving a trail of what they later described as "white dielectric material." The scientists evicted the pigeons and scrubbed away their mess, but the static remained, as loud as ever.

For the next year, Penzias and Wilson tried to ignore the noise, concentrating on observations that didn't require cosmic silence or perfect precision. They put aluminum tape over the metal joints, kept the receiver as clean as possible, and hoped that a shift in the weather might clear up the interference. They waited for the seasons to change, and then change again, but the noise always remained, making it impossible to find the faint radio echoes they were looking for. Their telescope was a failure.

Kevin Dunbar is a researcher who studies how scientists study things — how they fail and succeed. In the early 1990s, he began an unprecedented research project: observing four biochemistry labs at Stanford University. Philosophers have long theorized about how science happens, but Dunbar wanted to get beyond theory. He wasn't satisfied with abstract models of the scientific method — that seven-step process we teach schoolkids before the science fair — or the dogmatic faith scientists place in logic and objectivity. Dunbar knew that scientists often don't think the way the textbooks say they are supposed to. He suspected that all those philosophers of science — from Aristotle to Karl Popper — had missed something important about what goes on in the lab. (As Richard Feynman famously quipped, "Philosophy of science is about as useful to scientists as ornithology is to birds.") So Dunbar decided to launch an "in vivo" investigation, attempting to learn from the messiness of real experiments.

He ended up spending the next year staring at postdocs and test tubes: The researchers were his flock, and he was the ornithologist. Dunbar brought tape recorders into meeting rooms and loitered in the hallway; he read grant proposals and the rough drafts of papers; he peeked at notebooks, attended lab meetings, and videotaped interview after interview. He spent four years analyzing the data. "I'm not sure I appreciated what I was getting myself into," Dunbar says. "I asked for complete access, and I got it. But there was just so much to keep much track of."

Dunbar came away from his in vivo studies with an unsettling insight: Science is a deeply frustrating pursuit. Although the researchers were mostly using established techniques, more than 50 percent of their data was unexpected. (In some labs, the figure exceeded 75 percent.) "The scientists had these elaborate theories about what was supposed to happen," Dunbar says. "But the results kept contradicting their theories. It wasn't uncommon for someone to spend a month on a project and then just discard all their data because the data didn't make sense." Perhaps they hoped to see a specific protein but it wasn't there. Or maybe their DNA sample showed the presence of an aberrant gene. The details always changed, but the story remained the same: The scientists were looking for X, but they found Y.

Dunbar was fascinated by these statistics. The scientific process, after all, is supposed to be an orderly pursuit of the truth, full of elegant hypotheses and control variables. (Twentieth-century science philosopher Thomas Kuhn, for instance, defined normal science as the kind of research in which "everything but the most esoteric detail of the result is known in advance.") However, when experiments were observed up close — and Dunbar interviewed the scientists about even the most trifling details — this idealized version of the lab fell apart, replaced by an endless supply of disappointing surprises. There were models that didn't work and data that couldn't be replicated and simple studies riddled with anomalies. "These weren't sloppy people," Dunbar says. "They were working in some of the finest labs in the world. But experiments rarely tell us what we think they're going to tell us. That's the dirty secret of science."

"The answer had been there all along – it was just obscured by the imperfect theory, rendered invisible by our small-minded brain."

How did the researchers cope with all this unexpected data? How did they deal with so much failure? Dunbar realized that the vast majority of people in the lab followed the same basic strategy. First, they would blame the method. The surprising finding was classified as a mere mistake; perhaps a machine malfunctioned or an enzyme had gone stale. "The scientists were trying to explain away what they didn't understand," Dunbar says. "It's as if they didn't want to believe it."

The experiment would then be carefully repeated. Sometimes, the weird blip would disappear, in which case the problem was solved. But the weirdness usually remained, an

$$\pi(x) = \sum_{n=1}^{\infty} \frac{\mu(n)}{n} J(\sqrt[n]{x}) \qquad F(n) = \frac{(\varphi)^n - (-\frac{1}{\varphi})^n}{\sqrt{5}} \qquad \varphi = \frac{1+\sqrt{5}}{2}$$

$$J(x) = Li(x) + \sum_{\rho} Li(x^{\rho}) - \log 2 + \int_{x}^{\infty} \frac{dt}{t(t^2-1)\log t}$$

Figure 2: The Neuroscience of Screwing Up

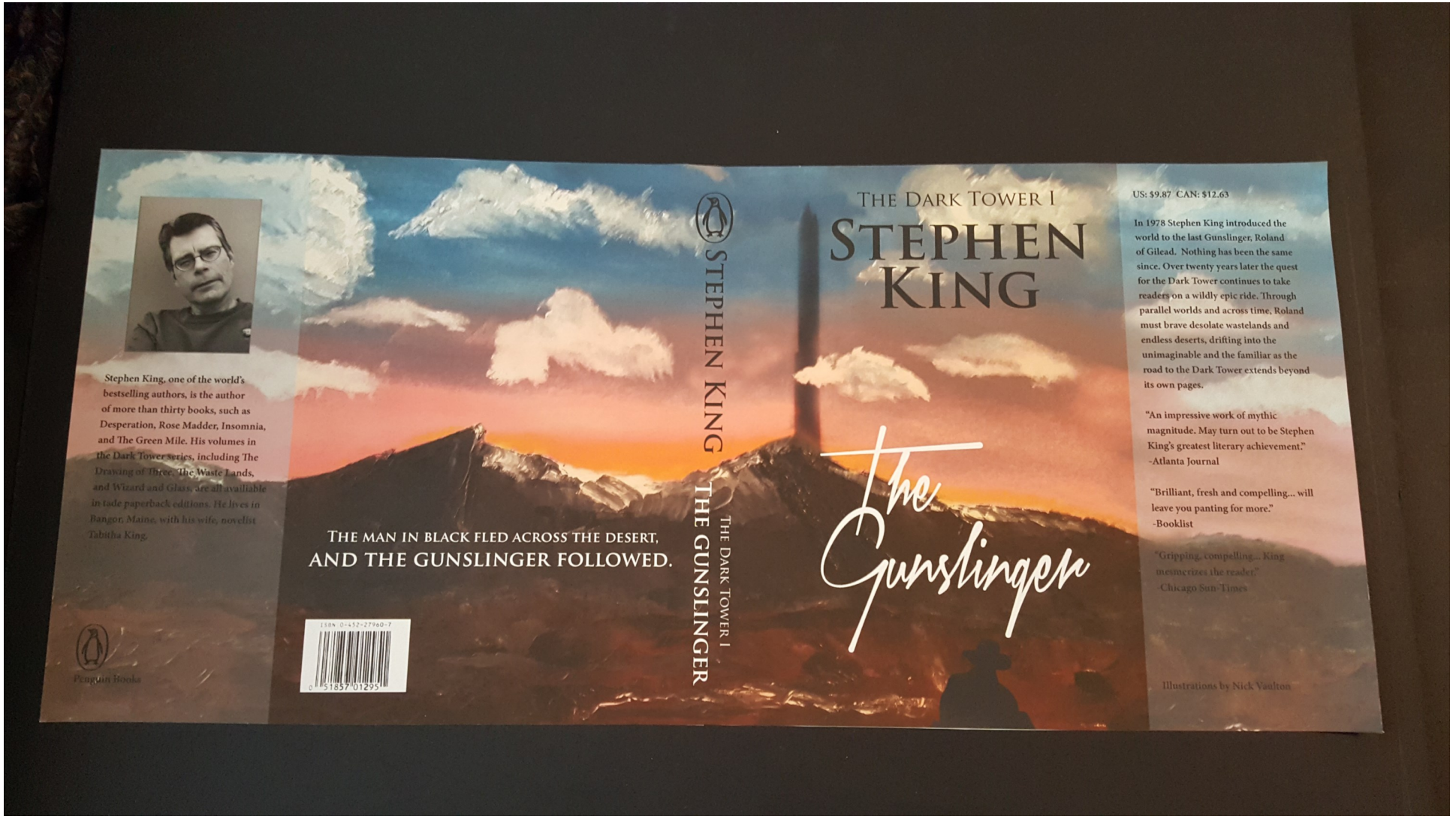


Figure 3: The Dark Tower Book Jacket

Figure 4: Radiohead Album Cover

Figure 5: Midtown Typeface

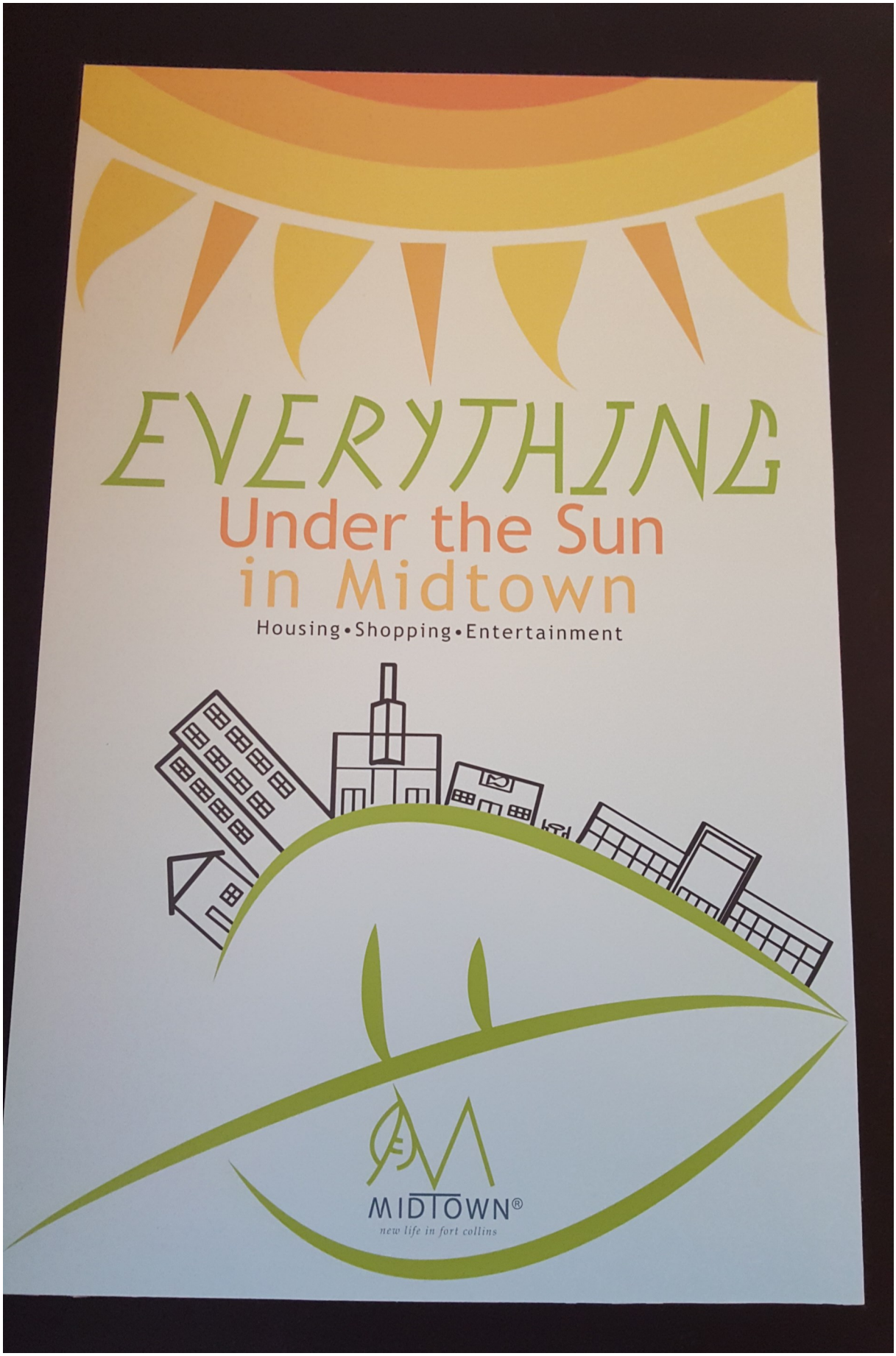


Figure 6: New Foothills Mall Poster

Figure 7: CIIPE Logo

Figure 8: Midtown Fruit Box

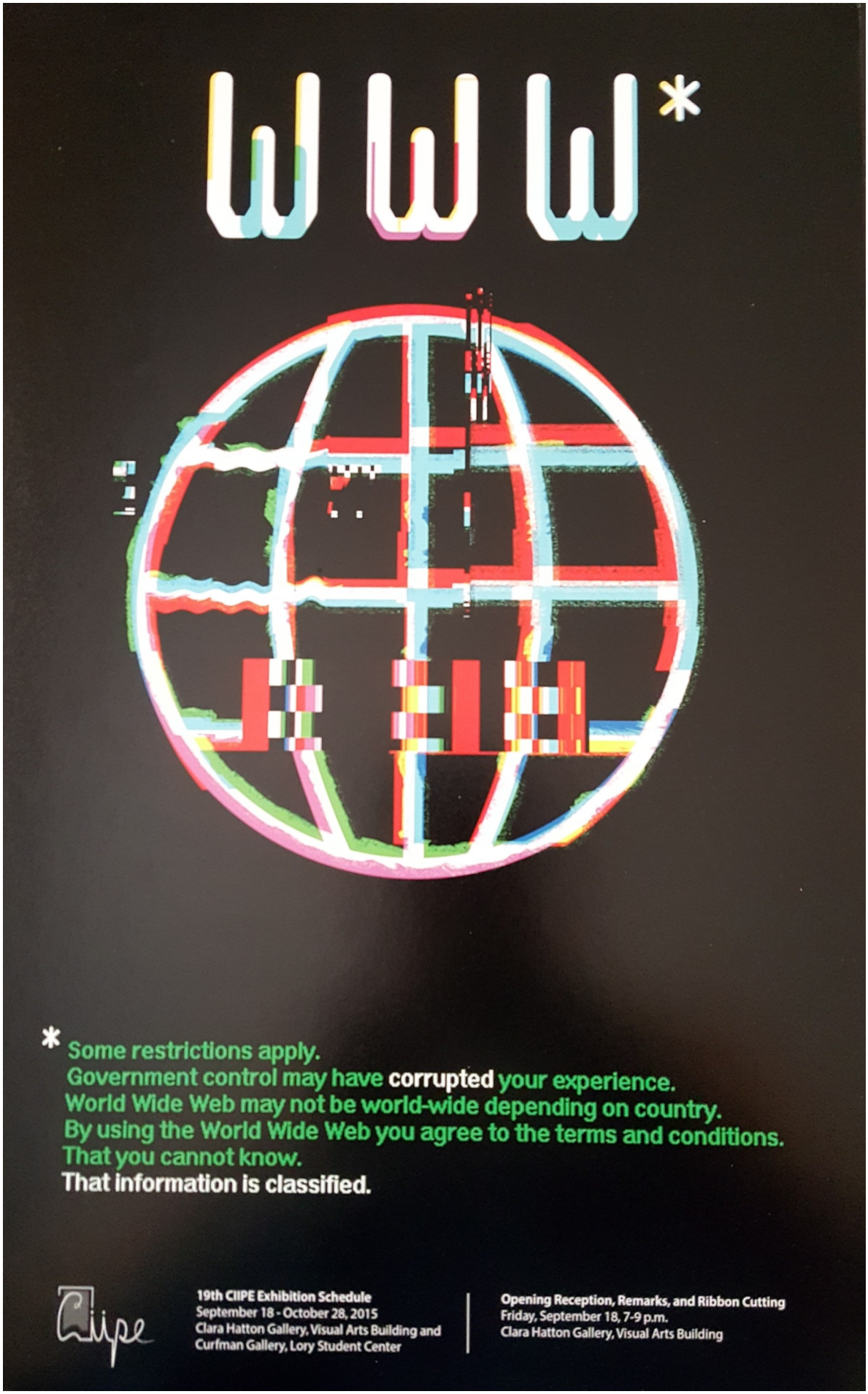


Figure 9: Internet Freedom

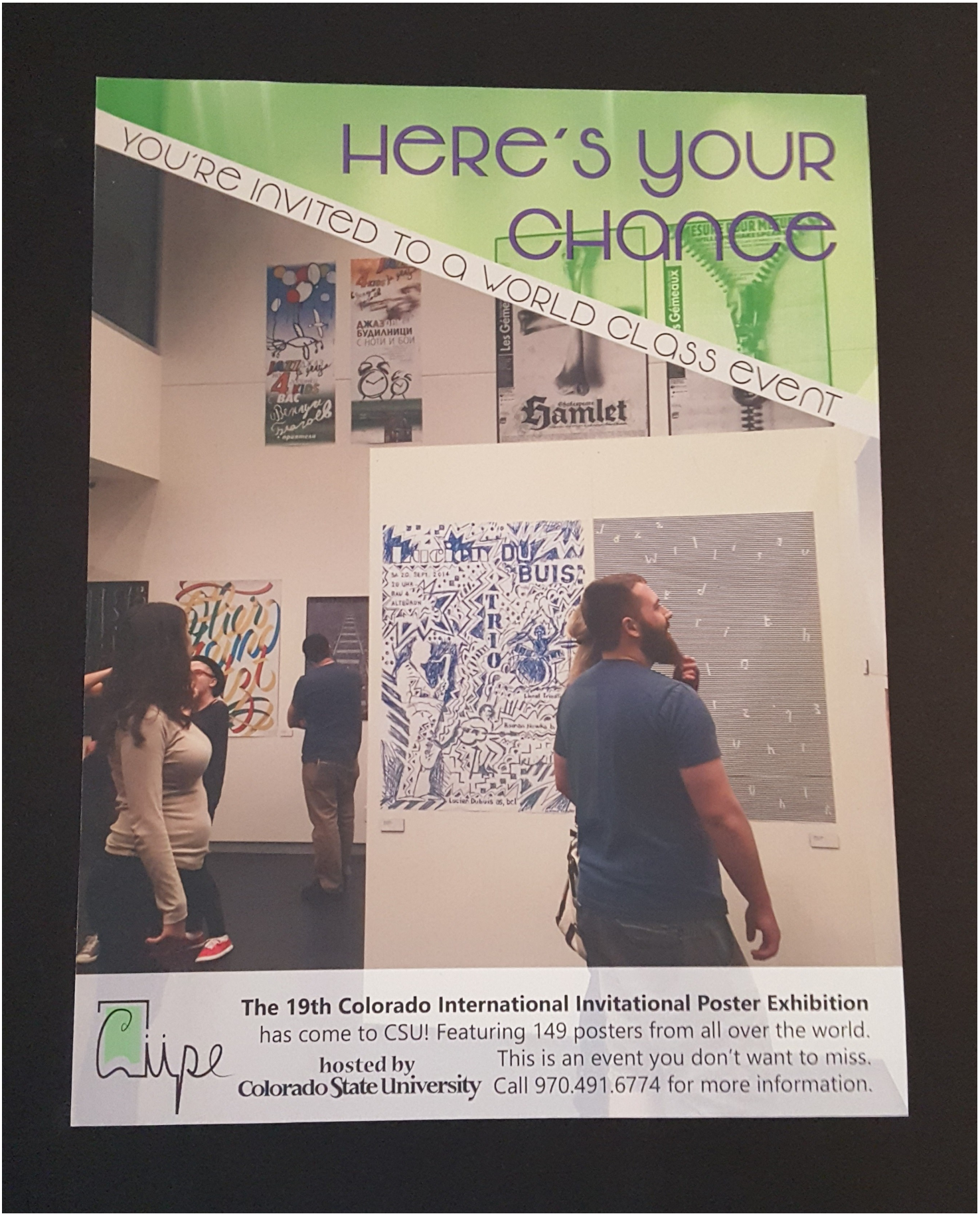


Figure 10: The Exhibition Advertisement