

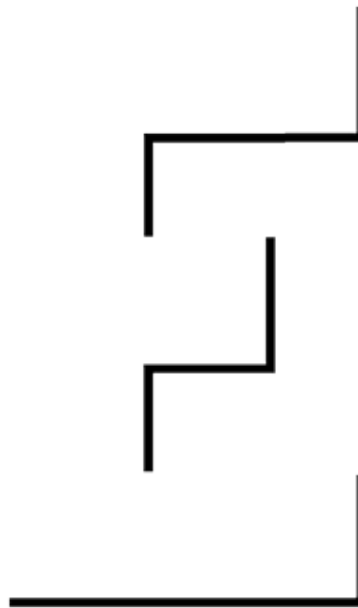


# IN PURSUIT OF ELEGANCE

## Why the Best Ideas Have Something Missing

Matthew May

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ELEGANCE IS AN ELUSIVE TARGET, which explains why it's so rare, and in turn so desirable. Experiencing elegance is nearly always profound. The unusually simple yet surprisingly powerful nature of any elegant this-or-that gives us pause, and the impact changes our view of things, often forever. Elegance delivers the power to cut through the noise. It can shake markets. It can change minds and mindsets.

Gaze at the image above for a moment. The three sets of right-angled lines depict something so ubiqui-

tous that you'd be hard-pressed to make it through the day without it. Can you identify it?

If you can't, it's because a key piece of information is missing. Once that information is shared, however, you will likely never be able to see the image in quite the

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same way again. *You are looking at the upper case version of the most widely used letter in the English language.* It is the letter E. My guess is that from now on, you'll have difficulty not seeing it.

What you've just experienced is the power of "the missing piece." It's not a parlour trick. It's an example of the transformative idea that lies at the heart of elegance: what *isn't* there can often trump what *is*.

No "complete" E, no matter how elaborately or ornately rendered, could have engaged you as fully and had the same kind of indelible impact on you. Once you were given a clue, your brain created the image for you, changing your mindset, without your having much say in the matter. The incomplete E took on a new form, a life of its own – one with real staying power.

What is important to take away from this quick demonstration is that the full power of elegance is achieved when the *maximum* impact is exacted with the *minimum* input. *Adding* anything to the figure would have actually *detracted* from the desired effect: the surprise you likely experienced when the E became visible. The E is obvious only in retrospect, but it is the unusually simple yet thoughtful construction of what *is* there that gives the missing piece its surprising power.

Elegance is not, in other words, a matter of simple erasure.

On Sunday, June 10, 2007, nearly twelve million television viewers experienced the very same effect. David Chase, creator of the hit HBO series *The Sopranos*, used



the method to achieve what many critics now hail as the most innovative hour of viewing in recent episodic television history. Fans of the show waited with anticipation to find out the fate of Mafioso Tony Soprano, the main character from whose viewpoint the story is told. *Would he or wouldn't he be killed, mob-fashion?* Debates had been raging for the 22 months since Chase had announced the final airdate. But instead of a concrete finale, television screens suddenly went black seemingly in mid-scene during the final seconds. Credits rolled within a few more seconds, and *The Sopranos* series came to an end.

What is so fascinating about the abrupt ending is not the decision itself although it was unprecedented and broke new ground artistically. Rather, it is the aftermath that is intriguing. Just as no fully drawn E could have the same lasting impact on the brain, no fully-developed conclusion would have engaged viewers with nearly the same lingering depth and intensity.

The most immediate reaction had nothing to do with the storyline: *What just happened to my television signal?* What is interesting there is not the reaction itself, for that might have been predictable in this age of satellite and cable TV, but that everyone had the *same* reaction in that no one saw it for what it was, as *the ending*. They saw it as something gone wrong. And that made them stop and think. So it's what occurred over the course of the next 48 hours or so that is worth noting.

The initial disappointment at being left hanging with a clearly missing conclusion was quickly replaced by an unparalleled level of post-show scrutiny coupled with a fresh appreciation for "the genius of David Chase," spurred by his semi-cryptic public comment that "Anybody who wants to watch it, it's all there."

Realizing that every frame was carefully crafted by Chase, who both wrote and directed the episode, viewers re-examined scene after scene, noting both blatant and subtle visual clues, soundtrack hints, veiled dialogue, past-show references, even camera angles, colour palettes and lighting effects. Theory after theory popped up in both online and traditional media. The debate took on a life of its own. Viewers crafted their own endings, filling in the missing piece with the trail of code Chase had provided. To most, Tony Soprano's fate became quite obvious, albeit only



through a full retrospective.

That is exactly what happened with the letter E. And like the letter E exercise, *The Sopranos* episode is quite indelible.

David Chase did what more of the best innovators and most prolific individuals are doing in many different domains: creatively engaging people's imaginations by leaving out the right things.

The value of what *isn't* there dawned on bestselling business author and self-employed professor Jim Collins when, in the throes of his early post-Stanford Business School career at Hewlett-Packard, his favourite former professor redressed him for a lack of discipline. An expert in creativity and innovation, she told him his hard-wired energy level was riding herd over his mental clarity, enabling a busy yet unfocused life. Her words rang true: at the time, Jim was aggressively chasing his carefully-set stretch goals for the year, confident in his ability to accomplish them. Still, his life was crowded with the commotion of a fast-tracking career. Her comment made him pull up short and re-examine what he was doing. To help, she did what

great teachers do, constructing a lesson in the form of an assignment she called "20-10": *Imagine that you've just inherited \$20 million free and clear, but you only have 10 years to live. What would you do differently – and specifically, what would you stop doing?*

The exercise did precisely what it was intended to do – make Jim stop and think about what mattered most to him. It was a true turning point. He realized he'd been racing down the wrong track, spending enormous energy on the wrong things. In fact, he woke up to the fact that he hated his job. He promptly quit and headed back to Stanford to launch a new career of research, teaching, and writing. The assignment became a constant reminder of just how important and precious his time is. He now starts each year by choosing what *not* to do, and each of his to-do lists always includes "stop-doing" items. Collins preaches his practice, impressing upon his audiences that they absolutely must have a "stop-doing" list to accompany their to-do lists. As a practical matter, he advises developing a strong discipline around first giving careful thought to prioritizing goals and objectives, then eliminating the bottom twenty percent of the list – forever.

Collins made the "stop doing" argument in his eloquent 2003 year-end essay appearing in *USA Today*:

*"A great piece of art is composed not just of what is in the final piece, but equally what is not. It is the discipline to discard what does not fit – to cut out what might have already cost days or even years of effort – that distinguishes the truly exceptional artist and marks the ideal piece of work, be it a symphony, a novel, a painting, a company, or most important of all, a life."*

It turns out that if you know where to look and what to look for, the letter E-type strategy at the heart of elegance can be found in a wide universe of fields: from the arts to athletics, from industry to architecture, from science to society. The point is to answer a single question: *What can we discover and learn that might allow us to bring more elegance into our own endeavours?*

The search will be exemplary rather than exhaustive – for as Henry David Thoreau once observed, if you're familiar with a principle you don't have to be familiar with all of its applications. The concept of elegance cannot be reduced to a stepwise prescription. There is no magic elixir; there are no secret ingredients –

because there is no single recipe for elegance.

Why is elegance so surprisingly powerful? The reasons aren't readily apparent, but if we can somehow decode them, we can hope to understand the thinking required to give the phenomenon genuine utility. In other words, it's about the bigger picture, the bigger idea.

But why, you might still be wondering, is this so important? Because a world in which *not doing* can be more powerful than *doing* is a different world than the one we are used to, with important implications. Because the most pressing challenges facing society are in urgent need of sustainable solutions – *elegant* ones. Because without a new way of viewing the world we will most assuredly succumb to employing the same kind of thinking that created so many of our problems in the first place. Because precious resources such as land, labour and capital are at all-time premiums, and in some cases rapidly shrinking or being depleted. Because by nature we tend to add when we should subtract, and act when we should stop and think. Because we need some way to consistently replace value-destroying complexity with value-creating simplicity. Because we need to know how to make room for more of what matters by eliminating what doesn't.

We all reach for elegance at some level, and yet it so often exceeds our grasp. Just why that's so is the interesting story.

## Elements of Elegance

Elegance is a rather elevated term, and it must be brought down from the rafters a bit to make it useful. At first it may seem curious to label something other than fashion or people as elegant. So when did we start using the term to mean something else? There is in fact a concrete point of departure.

When you enter the office of retired professor Donald Knuth in the Stanford University Computer Sciences Department, several things strike you immediately as somewhat odd: he prefers pad and pencil over a keyboard, he works standing up, and he doesn't use email. It's peculiar because Donald Knuth is none other than the father of computer science, revered by those in the know for his contributions to the field.

Author of *The Art of Computer Programming*, a multi-volume tome that many consider to be the

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masterwork of the field, Knuth introduced, as one University of California professor put it, “elegance into programming,” believing that computer programmers should view lines of computer code more as literature, so that people (and not simply other computers) could easily read and understand them. According to Knuth, elegant software requires programming in such a transparent way that not only can other programmers learn from it, but also enjoy reading it in front of the fire, “like good prose.”

One of Knuth's favourite lecture topics is “solving puzzling problems.” He knows he's ready to solve a problem elegantly when he can hold the answer in his head without having to write it down. Even with all of the advancement in software coding in the last fifty years, his programs remain the *de facto* standard for scientific publishing today.

What is Donald Knuth's definition of elegance? “Symmetrical, pleasingly memorable, spare – with the ease and immortal ring of an  $E=mc^2$ .” Those criteria are a bit cryptic, which perhaps isn't so surprising, given that Knuth's world revolves around a code, something that is by definition mysterious.

So what exactly does he mean?

In 1783 a Swiss mathematician by the name of Leonhard Euhlers invented an array he called Latin Squares. Latin Squares were symmetrical grids with an equal number ( $n$ ) of rows and columns. The only rule was that every number from 1 to  $n$  had to appear exactly once in each row and column. In other words, if there were seven rows and seven columns, the numbers 1 through 7 would appear exactly once in each row and column.

Fast-forward nearly two hundred years to 1979, when Dell puzzle magazines published a numerical brainteaser they called “Number Place.” Indianapolis architect Howard Garns had, in his spare time, tinkered with Euhler's Latin Squares to design a 9-by-9 Latin Square with a new twist. He added nine 3-by-3 sub-grids. Each could contain exactly one occurrence of

all the numbers 1 through 9, in addition to the rows and columns requirement. The goal, of course, was to fill in the matrix completely. A few clues were given in the form of numbers already in place in one of the 81 boxes.

Shortly thereafter, in 1984, the Japanese publisher Nikoli introduced the game in its newspaper, adding yet a further twist. No more than thirty clues or “givens” were permitted, and they had to be distributed with exact mirror symmetry. Nikoli renamed the game *Sudoku*. It became a nationwide obsession in Japan within a few years.

In 2004, retired Hong Kong judge and puzzle fanatic Wayne Gould made a trip to London in a successful effort to persuade *The Times* editors to print Sudoku puzzles in their paper. *The Times* introduced Sudoku as a daily feature on November 12, 2004. By the end of 2005, the World Puzzle Federation had declared Sudoku the number one logic puzzle in the world. Today there are online versions, Sudoku radio and television shows and games, Sudoku clubs, strategy books, videos, card games, and competitions. In 2006, Italy hosted the first World Sudoku Championship, with teams from around the world participating. Being the champion in one’s own country is tough enough, but the competition in these international games is even fiercer.

Will Shortz, the famed crossword puzzle editor for *The New York Times* and the only person in the world

with a degree in enigmatology (the study of codes and puzzles), describes himself as a Sudoku “addict.” By the end of 2006, Sudoku was a worldwide craze, with millions playing it daily.

So what is the connection between Sudoku and Knuth? I would argue that it is the elements of elegance. In keeping with Knuth’s criteria, Sudoku can help us to arrive at a concise working definition of the concept.

First, in keeping with Knuth’s first dimension, Sudoku is *symmetrical*, with its squares inside of squares, and mirrored distribution of clues. Second, it is *seductive*—to the point of being irresistible and craze-worthy — another way to couch Knuth’s “pleasingly memorable.” Will Shortz confirms that his Sudoku addiction stems from the seductive appeal of the empty squares to be filled in. It is intentionally spare, in keeping with Knuth’s third dimension, through a process best described as *subtractive*. The Sudoku puzzle designer crafts a complete solution and then symmetrically subtracts filled-in squares to arrive at the starting grid, which is predominantly empty. Finally, and as a result of these first three, the game is *sustainable* in terms of both the infinite number of games that can be constructed, as well as players’ interest in the game. In other words, there is an “ease and immortal ring” to it. In fact, Sudoku could not be easier to learn or have fewer rules: you don’t even need to know how to count (the numbers are simply symbols), and its one rule can be explained in a single sentence. It takes but a minute to learn, and it is universal in nature (unlike crossword puzzles which are knowledge-based as well as language-specific). And yet, the underlying complexity behind the logic needed to solve a Sudoku puzzle can be incredibly challenging.

*Symmetry. Seduction. Subtraction. Sustainability.* These are the key elements of elegance—the laws that can help us harness the power of the missing piece. Together they provide a solid framework for understanding how these elements work in the pursuit of elegance. But while each plays a part, it is the *collective* execution of all four elements that determines the uncommon simplicity and surprising power we seek. Symmetry, for example, doesn’t necessarily require or even imply a corresponding subtractive, spare quality. That something is subtractive or spare need not mean it’s seductive. And simply because something is seductive in

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some way does not automatically render it sustainable; it may be turn out to be a fleeting fancy. In fact, the elements of elegance can easily conflict with one another. That's what makes it so difficult to achieve. Elegance is *at once* symmetrical, seductive, subtractive, and sustainable. It takes a blend of logic and creativity to understand how to balance the four.

## **Symmetry**

The best way to think about symmetry may be the way mathematician Hermann Weyl defined it in his seminal 1952 book, *Symmetry*: “A thing is symmetrical if there is something you can do to it so that after you have finished doing it, it looks the same as before.”

For Brian Greene, Columbia University physics professor and author of the 1999 bestselling book *The Elegant Universe*, symmetry is the air he breathes. Physicists like Greene talk in terms of the “beautiful symmetries” of nature and dedicate their lives to explaining how these laws work through theories and equations and formulas that attempt to distil the essence of the world into terms the everyman can grasp. To be elegant, a theory must be symmetrical from the standpoint that as a proposed physical law it does not change from place to place or time to time. It must work everywhere and “everywhen.” It cannot, in other words, be *situational*.

Theoretical physicists have for the last decade come under the spell of superstring theory (string theory for short), which offers both a unifying beauty and the symmetry Knuth advocates. String theory is a way to reconcile the laws of the large – Einstein's theory of *general relativity* – with the laws of the small – *quantum mechanics*. For decades the proponents of each haven't been able to share a sandwich. Now they can tentatively shake hands. String theory potentially explains the most complex of complexities: the universe, both big *and* small. And it does so in a grand unified way using

a term we all know and understand: *string*.

But not just any string. A string so small that we will most certainly never be able to see it – a hundred billion billion ( $10^{20}$ ) times smaller than the nucleus of an atom. A string so small we can only guess at its properties because we would need a particle accelerator a million billion times more powerful than exists today to determine them. (Note: physicists like to slam things together at unbelievable speeds because you can tell an awful lot about something from what happens when you do.) Strings that are more like vibrating rubber bands, vibrating like the musical string on a violin. Those vibrations are many and varied, and are thought to actually *be* the assortment of other subatomic particles we observe. In other words, what looks like different particles are in reality just different “notes” on a fundamental string. Greene explains to us that “the universe – being composed of an enormous number of these vibrating strings – is akin to a cosmic symphony.”

The theory is that, much like a letter of the alphabet in language, there is nothing smaller, more fundamental than these vibrating musical strings. String is string, and it can't be described as containing any other material.

But if you can't see it, and can't directly determine its actual particular properties, how can you be confident the theory holds water? Enter the power of symmetry: you can approximate the properties of something even if you only have partial information. Greene uses the example of the police artist's ability to draw a fairly accurate sketch of a crime suspect even



if a witness has only seen the right side of the perpetrator's face. While differences certainly exist between the two sides of anyone's face, most are symmetrical *enough* to enable the rendering of a good likeness. The same indirect method is used all the time in science. You don't have to actually travel to distant stars and galaxies to understand their dynamics.

And this is where the power of the missing piece meets up with symmetry. Just knowing that the law of symmetry is in play makes the job of description possible. To use Greene's illustration, suppose I tell you that a sequence of letters has been written on a slip of paper, that the sequence has exactly three occurrences of the letter "y," and that the paper has been hidden within a sealed envelope. If I give you no more clues, there's no way for you to guess the sequence unless you have a pair of those super-cool x-ray glasses you could buy from the back of comic books in the good old days. The sequence of letters could be most anything. *Hjuiydfgybvcczywerfjgplk* would work just fine, as would an infinite number of other possibilities.

But now suppose that I give you two further hints. First, the hidden sequence of letters is an actual word in the English language; second, that it contains the smallest number of letters consistent with the first clue (having three y's). There's only one possibility, the shortest English word containing three y's: *syzygy*.

By now you don't need me to bang you on the head in order to realize that this is exactly what I did with the letter E exercise, and what David Chase did in the last episode of *The Sopranos*.

## Seduction

On the morning of January 9, 2007, Apple CEO Steve Jobs took centre stage at San Francisco's Moscone Center to deliver his keynote address kicking off the 2007 MacWorld Conference. Dressed in his signature mock turtleneck and jeans, he demonstrated the latest and greatest gizmo in Apple's product line. It was called the iPhone, and it was scheduled to go on sale five months hence at the end of June. As he ticked through the features of the phone, the audience sat mesmerized by what they saw. Or, more accurately, what they *didn't* see.

What they saw was a new gadget of remarkably sleek design, which they had come to expect from Apple. The iPhone was a "smart" phone, Apple's entry



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into the market for mobile marvels that combined cell phone, email, web browsing, music, photos, and video. Unlike the competitive models using limited or "light" versions of operating systems and web browsers, the iPhone had the systems of full-size Apple computers. In fact, it had full functionality across the board, including full-fledged iPod features. "Pleasingly memorable" didn't quite capture the iPhone. By all accounts, it was a thing of beauty.

What they *didn't see* took them by surprise. Now, Apple loyalists are accustomed to Jobs' flare for the spare. They know that minimalism, especially relating to buttons, is his watchword. The keyboard for original Macintosh had no direction keys for the cursor. Until 2005, the Mac mouse had a single button, as Mr. Jobs had long criticized multi-button computer mice as "inelegant." He had removed on/off power buttons on desktop units. He had removed buttons from elevators in multi-level Apple retail stores. Rarely if ever could he be seen wearing a shirt with buttons.

But for the iPhone, Mr. Jobs had removed the single biggest physical feature of every phone in the world: the keypad. It was completely missing. No thumbwheel. No stylus. No buttons to punch, dial, click, or scroll, save a single, elegant "Home" button. Even by Apple design standards, long known to be about clean and aesthetically pleasing lines, the iPhone had the sparest design ever conceived. With a flick of a finger across

a device the surface of which was almost entirely touchscreen, you could access vivid, three-dimensional displays of your music, photos, contacts, and movies. The keyboard was virtual, a soft-wired feature.

And what followed was a study in seduction. The conventional thinkers weighed in immediately, much like they did just after *The Sopranos* finale. Critics took shots at the lack of a keyboard, and Apple's choice to select a single service provider, AT&T. They criticized AT&T's slower network, choosing instead to minimize the fluid ability of the iPhone to automatically switch to faster Wi-Fi networks. Two things then happened almost simultaneously.

First, critical comments served only to embolden the vast number of Apple loyalists by giving them something to react to and defend. The blog world was fully ignited. Support became exponentially greater every day.

Second, Steve Jobs easily quashed the critics concerns. When the *Wall Street Journal's* technology columnist Walt Mossberg asked Mr. Jobs to defend his decision to omit a physical keyboard, Jobs responded: "The iPhone's keyboard lets us use far more sophisticated software to improve accuracy, customize the keyboard for specific applications, and of course remove the keyboard when it's not needed, freeing iPhone's entire large screen for reading email, browsing the Web, looking at maps, enjoying photos and movies, and doing things we haven't yet invented. We think the iPhone's keyboard is one of its greatest assets and competitive advantages."

It wasn't long before the iPhone was being hailed as one of the most-hyped products ever to hit the market. To hype something means to push it heavily through the use of various sales and media tactics. But that's exactly the opposite of what Apple did. In fact, they actually *stopped* doing some things.

Along with missing buttons came missing marketing. There was no multi-channel, multi-million dollar campaign. Steve Jobs' MacWorld demonstration was essentially it. So the spare design was coupled with an equally spare strategy: announce once and do nothing. No clever advertising. No planned information leaks to entice the media. No appearances by Mr. Jobs on television. No sweeping demo model program for technology journalists. No advance reviews. No evangelistic outreach to the Apple cult. No special intro-

ductory offer or handset rebate – in fact the entry level price tag was triple the normal price for a new device: \$499. No pre-ordering. In fact, Apple limited distribution to in-store sales only, and all stores would begin synchronized selling at the predetermined time of 6 p.m. the evening of June 29. It was a well-executed "stop doing" strategy.

By the time the iPhone finally went on sale, well over half the U.S. and British mobile phone market was aware of it, and nearly 20 million Americans had expressed interest in buying one, regardless of the price or potential wait time. The iPhone "hit a tipping point" before it hit the market.

The iPhone phenomenon is a good example of the essential duality of *unusual* simplicity and *surprising power*; the impact of elegance in a business setting, and the seductive power of the missing piece.

## Subtraction

The Renaissance artist Michelangelo was once asked how he sculpted his marble masterpiece, the statue of David, considered to be the image of the perfect man, to which he replied: "I saw David through the stone, and I simply chipped away everything that was not David." Antoine de Saint-Exupéry, author of *The Little Prince*, picked up on Michelangelo's implication by observing that "perfection is achieved not when there is nothing more to add, but when there is nothing left to take away."

The laws under which elegance can be achieved are *subtractive*. But therein lies the conundrum. The very same penchant we have to "fill in" – to *add* – is exactly why elegance is so elusive. By nature we add, push, collect, hoard and consume. The key to understanding this rather intriguing paradox lies in seeing that the true enemy of elegance is not complexity. In fact, elegance requires the presence of complexity. In much the same way light requires darkness and trust requires risk, without complexity there is no need to talk about elegance. The true enemy of elegance is *excess* because it can almost always be eliminated or reduced, where complexity, although we can manage or hide it, often

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Kurt Schwitters, *Das Unbild*, (1919)

can't. And whether you're talking about a market, a product, a career, a skill, or a life, excess comes in three distinct forms: *inconsistency*, *overload*, and *waste*. We all face these types of problems, and it is the means by which we handle them that enables or prevents elegance. Understanding what piece to make missing is the trick.

There is nothing "in and out" about In-N-Out Burger. The lines are always long, but well worth the wait. In-N-Out Burger is a Southern California institution with a cult-like following not unlike that of Apple Computer or Starbucks. Its reputation extends beyond the West Coast, and indulging in a Double-Double is on the to-do list of many tourists. The company was founded by Harry and Esther Snyder in 1948 in a Los Angeles suburb. It was Harry's innovation to start a drive-through burger stand where customers could order through a two-way speaker box. Back then, carhops and big canopied burger joints were the norm. In-N-Out Burger is known for its consistent quality, freshness (potatoes are hand-cut daily for the fries), and

simple menu. But most important, In-N-Out Burger understands the power of the missing piece.

To begin with, the menu has only four food items. You can order a Hamburger, a Cheeseburger, a Double-Double, and French Fries. The fifth item is a beverage. You can partake in the standard array of Coca-Cola products, or order one of three flavors of milkshake: chocolate, vanilla, or strawberry. *That's it*. Or is it?

The reason for the cultish phenomenon is the "secret menu." You have to be in the know to be privy to it. The most interesting thing about the secret menu is that not only do the items on it far outnumber those on the published menu, but they are unique products, universally prepared according to a cross-company formula, and well beyond the Starbucks approach of allowing tweaks to an already extensive menu. When you order, say, a "tall non-fat, no-whip mocha" at Starbucks, your receipt simply reads "tall mocha." When you order, for example, a Flying Dutchman off the secret menu at any In-N-Out Burger, it will appear on the receipt just as you ordered it.

There are about a dozen "standard" off-menu items: a 2X2, 2X4, 4X4, a 3-by-Meat, Animal Style, Protein Style (no bun, wrapped in lettuce!), Grilled Cheese, Flying Dutchman, Fried Mustard, Double-Meat, Veggie, and Extra Toast. That's just the burgers. Fries can be Animal Style, Light, or Well-Done. Shakes can be Swirl or Neapolitan.

In-N-Out has never changed their menu. *The customers have*. By resisting formal menu expansion they've avoided self-defeating overkill seen elsewhere as "feature creep." They understand the "filling in" desire, and they simply flow with it, keeping their wares pared back but enabling their patrons to add their personal touch. They understand the completely *intangible* value of the tailored touch, so the only rule they have is "to do whatever the customer wants done to a burger." They understand how seduction works, so they maintain the mystique. They understand that expanding the formal menu only detracts from the very reason they are so popular. At In-N-Out, doing nothing is a powerfully elegant strategy.

The laws of subtraction are quite simply these. First, it is important to distinguish an ingenious subtraction from a simplistic incision. The goal of elegance is to *add* value and impact for the receiver, not to simply pump up a bottom line. Certainly it takes no genius to

cut a cost or pare a budget.

Second, when it comes to solving challenging problems with elegant solutions, *doing* something isn't always better than not doing something. Elegance is often found in a not-so-big idea that changes everything – a small step back, an intelligent edit, an insightful abstinence of some sort.

The motivating questions behind the power of the missing piece must be these: What would customers love for you to eliminate or reduce, or stop adding? What is it that your competitors would struggle with if you were to cease? What would those who matter most love for you to stop doing?

There are some who will declare elegance to be nothing more than glorified simplicity. There are those who will deem it a luxury. What they won't do is admit that they lack the discipline required to achieve it. And that brings us to the last leg of the journey.

## Sustainability

Like symmetry, sustainability is easier to describe than to define. Most people think of sustainability in the context of the rising environmental awareness and corporate social responsibility efforts, which focus on ways to make better use of limited, shrinking, and in some cases already scarce raw planetary resources. But this is simply one application of the sustainability principle.

Sustainability can be defined broadly as the ability to maintain something at a certain level, indefinitely. While the definition is easy to grasp, more subtle are two important implications. The first is that to be sustainable, any given asset, no matter what it is, must be kept whole, without making significant trade-offs that undermine the capital used to generate and maintain it. The second follows from the first: sustainability hinges on the ability to see finite resources as the very source of innovation. This insight brings to the fore the creative tension at the centre of elegance: achieving the maximum effect with the minimum effort.

The foregoing examples highlighting the various facets of symmetry, seduction, and subtraction have all had an element of sustainability to them: from the lasting impact of *The Sopranos'* non-ending to the indelible effect of the letter E exercise, and from the absentee iPhone marketing to the long-secret menu at In-N-Out Burger. It is the ability to simultaneously

achieve all four factors that makes the surprising ingenuity behind these stories worth exploring.

On a weekend fishing expedition to Transkei, on the east coast of South Africa known as the Wild Coast, advertising executive Trevor Field observes a number of women standing next to a windmill, waiting for the wind to blow. Curious, he investigates the situation to discover that the concrete reservoir at the bottom of the windmill is cracked, so it will not hold water. When he passes by the windmill two days later, the women are still there waiting. The troubling scene stays with him.

He discovers how serious the world's water problem is: over one billion people do not have access to clean water, water-related illnesses are the single largest cause of disease worldwide, and nearly 6,000 people each day die due to water-related disease. Moreover, abundant safe water is a little more than a hundred feet below the surface, but the resources do not exist to extract, store, and purify it.

At the same time Ronnie Stuiver, who drills boreholes for wells in remote areas of South Africa, is bothered by another observation. When he rolls his drilling rig into a village, the children gather to watch him work, fascinated. Without swing sets or playgrounds, their boundless energy has limited outlet. He designs a small-scale model of something he thinks will delight them: a pump with a merry-go-round fitted on top that can be powered by play. As the children spin the merry-go-round, water is pumped from deep in the ground. He puts his prototype on display at an agricultural fair in Johannesburg.

On that particular day, Trevor Field is attending the fair with his father-in-law. He spies Stuiver's pump and instantly sees it not just as a merry-go-round that pumps water, but as a cleverly sustainable way to help people like the women he saw waiting for the wind. He envisions a self-contained, self-sustaining water system, complete with a high-capacity water tank with four large spaces for billboard advertising and public service messages – the revenue from which will pay for maintenance – all powered by children's play. He licenses the idea from Stuiver and forms PlayPumps

**SUSTAINABILITY HINGES ON THE ABILITY TO SEE FINITE RESOURCES AS THE VERY SOURCE OF INNOVATION.**



International to allow the systems to be donated to communities and schools in rural Africa. Today, over 1,000 PlayPumps have been installed in the sub-Saharan, with commitments for 4,000 by the end of 2010.

## Conclusion

Whether it's a personal or professional pursuit, we each face the challenge of sustainability at some point, for the simple reason that each day we have more to do and less to do it with. There is little choice but to become more resourceful. Achieving elegance demands that we meet that challenge in a way that avoids causing further complications. But that can be fiendishly difficult, which helps explain why so many well-intentioned solutions are plagued by unwanted side effects or unintended consequences. So while it is this enduring quality that consummates elegance, it can be the most elusive.

There is hope, however, in the simple notion that a sustainable idea is the visible outcome of viewing finite resources as scarce and precious – an opportunity to think anew – and exploiting the one eternal source of creativity and innovation: *observation*.

You see, elegance is not a matter of superior intelligence. And while the ability to solve problems elegantly does not require the genius of Albert Einstein or Leonardo da Vinci, it does require the scientist's diligence and obsessive attention to detail, coupled with the artist's ingenuity in pursuing possibilities within the clear confines of a chosen medium – the painter's canvas edge, the sculptor's block of marble, the composer's octave, or the writer's alphabet.

The awareness of this requirement is growing, and as Richard Florida, author of *The Rise of the Creative Class*, states, "Millions of people are beginning to work and live the way creative people like artists and scientists always have."

It is keen observation that is at the heart of the examples of elegance explored here. It seems that if we stop, look, think long enough to ask the right questions and fight our natural tendency to arrive at an immediate answer, we will find ourselves in a better position to see the elegant solution.

For many of us, though, it is *answers* that have consumed our thoughts since we were first-graders. Perhaps it is worth revisiting Rudyard Kipling's poem, "The Elephant's Child":

*I keep six honest serving men;  
(They taught me all I knew)  
Their names are What and Where and When  
And How and Why and Who.*

