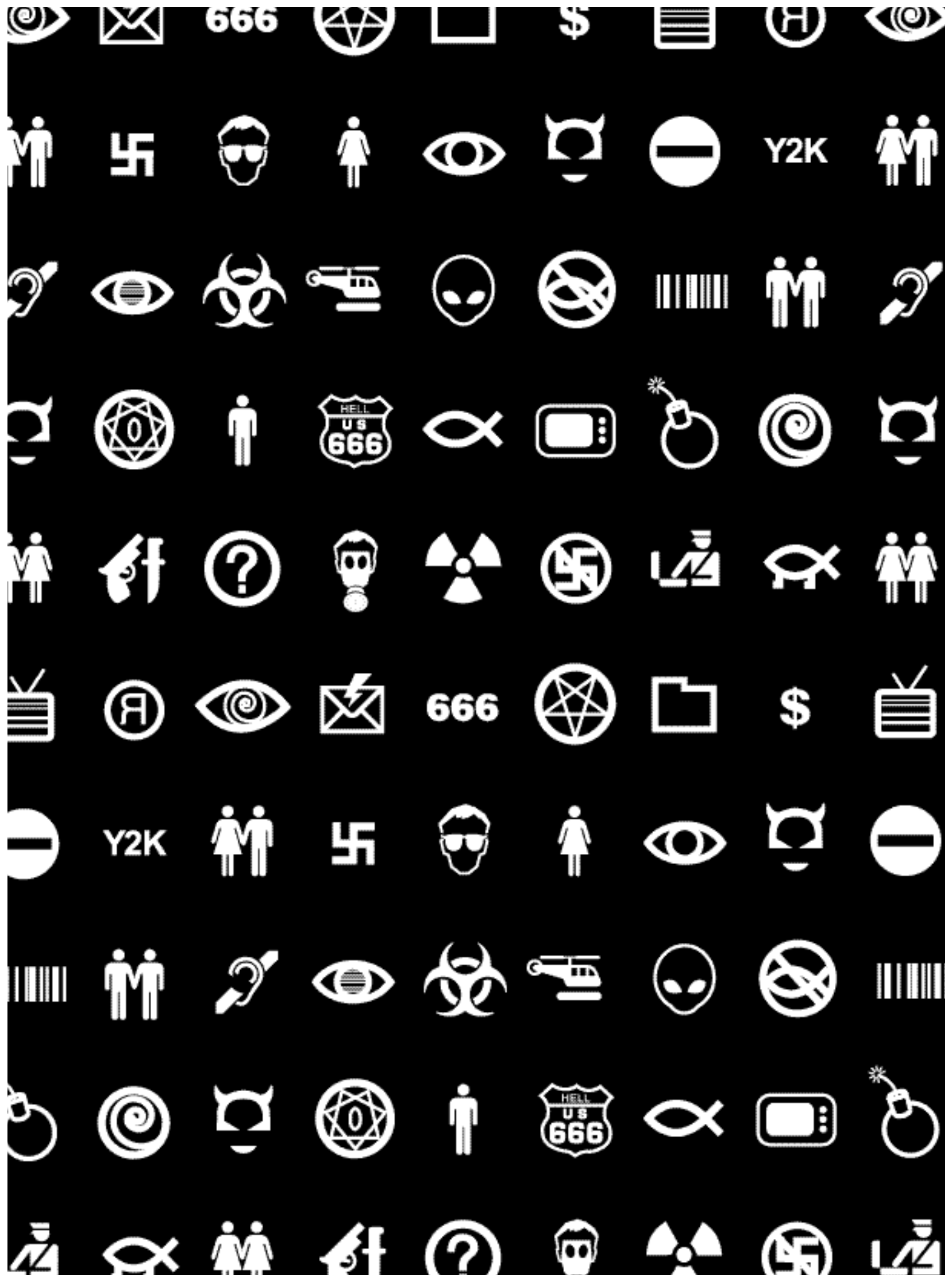


Reality Is a Shared Hallucination





# Reality Is a Shared Hallucination

Howard Bloom

“Being here is a kind of spiritual surrender. We see only what the others see, the thousands who were here in the past, those who will come in the future. We’ve agreed to be part of a collective perception.” —Don DeLillo

“We are accustomed to use our eyes only with the memory of what other people before us have thought about the object we are looking at.” —Guy de Maupassant

“After all, what is reality anyway? Nothin’ but a collective hunch.” —Lily Tomlin

The artificial construction of reality was to play a key role in the new form of global intelligence which would soon emerge among human beings. If the group brain’s “psyche” were a beach with shifting dunes and hollows, individual perception would be that beach’s grains of sand. However, this image has a hidden twist. Individual perception untainted by others’ influence does not exist.

A central rule of large-scale organization goes like this: The greater the spryness of a massive enterprise, the more internal communication it takes to support the teamwork of its parts.<sup>1</sup> For example, in all but the simplest plants and animals only 5 percent of DNAs dedicated to DNA’s “real job,” manufacturing proteins.<sup>2</sup> The remaining 95 percent is preoccupied with organization and administration, supervising the maintenance of bodily procedures, or even merely interpreting the corporate rule book “printed” in a string of genes.<sup>3</sup>

In an effective learning machine, the connections deep inside far outnumber windows to the outside world. Take the cerebral cortex, roughly 80 percent of whose nerves connect with each other, not with input from the eyes or ears.<sup>4</sup> The learning device called human society follows the same rules. Individuals spend most of their time communicating with each other, not exploring such ubiquitous elements of their “environment” as insects and weeds which could potentially make a nourishing dish.<sup>5</sup> This cabling for the group’s internal operations has a far greater impact on what we “see” and “hear” than many psychological researchers suspect. For it puts us in the hands of a conformity enforcer whose power and subtlety are almost beyond belief.

In our previous episode we mentioned that the brain’s emotional center—the limbic system—decides which swatches of experience to notice and store in memory. Memory is the core of what we call reality. Think about it for a second.

What do you actually hear right now and see? This page. The walls and furnishings of the room in which you sit. Perhaps some music or some background noise. Yet you know as sure as you were born that out of sight there are other rooms mere steps away—perhaps the kitchen, bathroom, bedroom, and a hall. What makes you so sure that they exist? Nothing but your memory.

Nothing else at all. You’re also reasonably certain there’s a broader world outside. You know that your office, if you are away from it, still awaits your entry. You can picture the roads you use to get to it, visualize the public foyer and the conference rooms, see in your mind’s eye the path to your own workspace, and know where most of the things in your desk are placed. Then there are the companions who enrich your life—family, workmates, neighbors, friends, a husband or a wife, and even people you are fond of to whom you haven’t spoken in a year or two—few of whom, if any, are currently in the room with you. You also know we sit on a planet called the earth, circling an incandescent ball of sun, buried in one of many galaxies. At this instant, reading by yourself, where do the realities of galaxies and friends reside? Only in the chambers of your mind. Almost every reality you “know” at any given second is a mere ghost held in memory.

The limbic system is memory’s gatekeeper and in a very real sense its creator. The limbic system is also an intense monitor of others,<sup>6</sup> keeping track of what will earn their praises or their blame. By using cues from those around us to fashion our perceptions and the “facts” which we retain, our limbic system gives the group a say in that most central of realities, the one presiding in our brain.

Elizabeth Loftus, one of the world’s premier memory researchers, is among the few who realize how powerfully the group remakes our deepest certainties. In the late 1970s, Loftus performed a series of key experiments. In a typical session, she showed college students a moving picture of a traffic accident, then asked after the film, “How fast was the white sports car going when it passed the barn while traveling along the country road?” Several days later when witnesses to the

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film were quizzed about what they'd seen, 17 percent were sure they'd spied a barn, though there weren't any buildings in the film at all. In a related experiment subjects were shown a collision between a bicycle and an auto driven by a brunette, then afterwards were peppered with questions about the "blond" at the steering wheel. Not only did they remember the nonexistent blond vividly, but when they were shown the video a second time, they had a hard time believing that it was the same incident they now recalled so graphically. One subject said, "It's really strange because I still have the blond girl's face in my mind and it doesn't correspond to her [pointing to the woman on the video screen]... It was really weird." In piecing together memory, Loftus concluded that hints leaked to us by fellow humans override the scene we're sure we've "seen with our own eyes."<sup>7</sup>

Though it got little public attention, research on the slavish nature of perception had begun at least 20 years before Loftus' work. It was 1956 when Solomon Asch published a classic series of experiments in which he and his colleagues showed cards with lines of different lengths to clusters of their students. Two lines were exactly the same size and two were clearly not—the dissimilar lines stuck out like a pair of basketball players at a Brotherhood of Munchkins brunch. During a typical experimental run, the researchers asked nine volunteers to claim that two badly mismatched lines were actually the same, and that the real twin was a misfit. Now came the nefarious part. The researchers ushered a naive student into a room filled with the collaborators and gave him the impression that the crowd already there knew just as little as he did about what was going on. Then a white-coated psychologist passed the cards around. One by one he asked the pre-drilled skills to announce out loud which lines were alike. Each dutifully declared that two terribly unlike lines were duplicates. By the time the scientist prodded the unsuspecting newcomer to pronounce judgement, he usually went along with the bogus consensus of the crowd. In fact, a full 75 percent of the clueless experimental subjects bleated in chorus with the herd. Asch ran the experiment over and over again. When he quizzed his victims of peer pressure after their ordeal was over, it turned out that many had done far more than simply going along to get along. They had actually *seen* the mismatched lines as equal. Their senses had been swayed more by the views of the multitude than by the actuality.

To make matters worse, many of those whose vision hadn't been deceived had still become inadvertent collaborators in the praise of the emperor's new clothes. Some did it out of self-doubt. They were convinced that the facts their eyes reported were wrong, the herd

was right, and that an optical illusion had tricked them into seeing things. Still others realized with total clarity which lines were identical, but lacked the nerve to utter an

unpopular opinion.<sup>8</sup> Conformity enforcers had tyrannized everything from visual processing to honest speech, revealing some of the mechanisms which wrap and seal a crowd into a false belief.

Another series of experiments indicates just how deeply social suggestion can penetrate the neural mesh through which we think we see a hard-and-fast reality. Students with normal color vision were shown blue slides. But one or two stooges in the room declared the slides were green. In a typical use of this procedure, only 32 percent of the students ended up going along with the vocal but totally phony proponents of green vision.<sup>9</sup> Later, however, the subjects were taken aside, shown blue-green slides and asked to rate them for blueness or greenness. Even the students who had refused to see green where there was none a few minutes earlier showed that the insistent greenies in the room had colored their perceptions. They rated the new slides more green than pretests indicated they would have otherwise. More to the point, when asked to describe the color of

the afterimage they saw, the subjects often reported it was red-purple—the hue of an afterimage left by the color green.

Afterimages are not voluntary. They are manufactured by the visual system. The words of just one determined speaker had penetrated the most intimate sanctums of the eye and brain.

When it comes to herd perception, this is just the iceberg's tip. Social experience literally shapes critical details of brain physiology,<sup>10</sup> sculpting an infant's brain to fit the culture into which the child is born. Six-month-olds can hear or make every sound in virtually every human language.<sup>11</sup> But within a mere four months, nearly two-thirds of this capacity has been cut away.<sup>12</sup> The slashing of ability is accompanied by ruthless alterations in cerebral tissue.<sup>13</sup> Brain cells remain alive only if they can prove their worth in dealing with the baby's physical and social surroundings.<sup>14</sup> Half the brain cells we are born with rapidly die. The 50 percent of neurons which thrive are those which have shown they come in handy for coping with such cultural experiences as crawling on the polished mud floor of a straw hut or navigating on all fours across wall-to-wall carpeting, of comprehending a mother's words, her body language, stories, songs, and the concepts she's imbibed from her community. Those nerve cells stay alive which demonstrate that they can cope with the quirks of strangers, friends, and family. The 50 percent of neurons which remain unused are literally forced to commit preprogrammed cell death<sup>15</sup>—suicide.<sup>16</sup> The brain which underlies the mind is jigsawed like a puzzle piece to fit the space it's given by its loved ones and by the larger framework of its culture's patterning.<sup>17</sup>

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When barely out of the womb, babies are already riveted on a major source of social cues.<sup>18</sup> Newborns to four-month-olds would rather look at faces than at almost anything else.<sup>19</sup> Rensselaer Polytechnic's Linnda Caporael points out what she calls "micro-coordination," in which a baby imitates its mother's facial expression, and the mother, in turn, imitates the baby's.<sup>20</sup> The duet of smiles and funny faces indulged in by Western mothers or scowls

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and angry looks favored by such peoples as New Guinea's Mundugumor<sup>21</sup> accomplishes far more than at first it seems. Psychologist Paul Ekman has demonstrated that the faces we make recast our moods, reset our nervous systems, and fill us with the feelings the facial expressions indicate.<sup>22</sup> So the baby imitating its mother's face is learning how to glower or glow with emotions stressed by its society. And emotions, as we've already seen, help craft our vision of reality.

There are other signs that babies synchronize their feelings to the folks around them at a very early age. Emotional contagion and empathy—two of the ties which bind us—come to us when we are still in diapers.<sup>23</sup> Children less than a year old who see another child hurt show all the signs of undergoing the same pain.<sup>24</sup> The University of Zurich's D. Bischof-Kohler concludes from one of his studies that when babies between one and two years old see another infant hurt they don't just ape the emotions of distress, but share it empathetically.<sup>25</sup>

More important, both animal and human children cram their powers of perception into a conformist mold, chaining their attention to what others see. A four-month-old human will swivel to look at an object his parent is staring at. A baby chimp will do the same.<sup>26</sup> By their first birthday, infants have extended this perceptual linkage to their peers. When they notice that another child's eyes have fixated on an object, they swivel around to focus on that thing themselves. If they don't see what's so interesting, they look back to check the direction of the other child's gaze and make sure they've got it right.<sup>27</sup>

One-year-olds show other ways in which their perception is a slave to social commands. Put a cup and a strange gewgaw in front of them, and their natural tendency will be to check out the novelty. But repeat the word "cup" and the infant will dutifully rivet its gaze on the old familiar drinking vessel.<sup>28</sup> Children go along with the herd even in their tastes in food. When researchers put two-to-five-year-olds at a table for several days with other kids who loved the edibles they loathed, the children with the dislike did a 180-degree turn and became zestful eaters of the dish they'd formerly disdained.<sup>29</sup> The preference was still going strong weeks after the peer pressure had stopped.

At six, children are obsessed with being accepted by the group and become hypersensitive to violations of group norms. This tyranny of belonging punishes perceptions which fail to coincide with those of the majority.<sup>30</sup>

Even rhythm draws individual perceptions together in the subtlest of ways. Psychiatrist William Condon of Boston University's Medical School analyzed films of adults chatting and noticed a peculiar process at work. Unconsciously, the conversationalists

began to coordinate their finger movements, eye blinks, and nods.<sup>31</sup> When pairs of talkers were hooked up to separate electroencephalographs, something even more astonishing appeared—some of their brain waves were spiking in unison.<sup>32</sup> Newborn babies already show this synchrony<sup>33</sup>—in fact, an American infant still fresh from the womb will just as happily match its body movements to the speech of someone speaking Chinese as to someone speaking English.

As time proceeds, these unnoticed synchronies draw larger and larger groups together. A graduate student working under the direction of anthropologist Edward T. Hall hid in an abandoned car and filmed children romping in a school playground at lunch hour. Screaming, laughing, running, and jumping, each seemed superficially to be doing his or her own thing. But careful analysis revealed that the group was rocking to a unified beat. One little girl, far more active than the rest, covered the entire schoolyard in her play. Hall and his student realized that without knowing it, she was "the director" and "the orchestrator." Eventually, the researchers found a tune that fit the silent cadence. When they played it and rolled the film, it looked exactly as if each kid were dancing to the melody. But there had been no music playing in the schoolyard. Said Hall, "Without knowing it, they were all moving to a beat they generated themselves...an unconscious undercurrent of synchronized movement tied the group together." William Condon concluded that it doesn't make sense to view humans as "isolated entities." They are, he said, bonded together by their involvement in "shared organizational forms."<sup>34</sup> In other words, without knowing it individuals form a team. Even in our most casual moments, we pulse in synchrony.

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No wonder input from the herd so strongly colors the ways in which we see our world. Students at MIT were given a bio of a guest lecturer. One group's background sheet described the speaker as cold; the other group's handout praised him for his warmth. Both groups sat together as they watched the lecturer give his presentation. But

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those who'd read the bio saying he was cold saw him as distant and aloof. Those who'd been tipped off that he was warm rated him as friendly and approachable.<sup>35</sup> In judging a fellow human being, students replaced external fact with input they'd been given socially.<sup>36</sup>

The cues rerouting herd perception come in many forms. Sociologists Janet Lynne Enke and Donna Eder discovered that in gossip, one person opens with a negative comment on someone outside the group. How the rest of the gang goes on the issue depends entirely on the second opinion expressed. If the second speechifier agrees that the outsider is disgusting, virtually everyone will chime in with a sound-alike opinion. If, on the other hand, the second commentator objects that the outsider is terrific, the group is far less likely to descend like a flock of harpies tearing the stranger's reputation limb from limb.<sup>37</sup>

Crowds of silent voices whisper in our ears, transforming the nature of what we see and hear. Some are those of childhood authorities and heroes, others come from family<sup>38</sup> and peers.<sup>39</sup> The strangest emerge from beyond the grave. A vast chorus of long-gone ancients constitutes a not-so-silent majority whose legacy has what may be the most dramatic effect of all on our vision of reality. Take the impact of gender stereotypes— notions developed over hundreds of generations, contributed to, embellished, and passed on by literally billions of humans during our march through time. In one study, parents were asked to give their impression of their brand new babies. Infant boys and girls are completely indistinguishable aside from the buds of reproductive equipment between their legs. Their size, texture, and the way in which newborns of opposite sex act are, according to researchers J.Z. Rubin, F.J. Provenzano, and Z. Luria, completely and totally the same. Yet parents consistently described girls as softer, smaller and less attentive than boys.<sup>40</sup>

The crowds within us resculpt our gender verdicts over and over again. Two groups of experimental subjects were asked to grade the same paper. One was told the author was John McKay. The other was told the paper's writer was Joan McKay. Even *female* students evaluating the paper gave it higher marks if they thought it was from a male.<sup>41</sup>

The ultimate repository of herd influence is language—a device which not only condenses the opinions of those with whom we share a common vocabulary, but sums up the perceptual approach of swarms who have passed on. Every word we use carries within it the experience of generation after generation of men, women, families,

tribes, and nations, often including their insights, value judgements, ignorance, and spiritual beliefs. Take the simple sentence, "Feminism has won freedom for women." Indo-European warriors with whom we shall ride in a later episode coined the word *dh[=a]*, meaning to suck, as a baby does on a breast. They carried this term from the Asian steppes to Greece, where it became *qu<sup>h</sup>sai*, to suckle, and *theEIE*, nipple. The Romans managed to mangle *qh<sup>h</sup>sai* into *femina*—their word for woman.<sup>42</sup> At every step of the way, millions of humans mouthing the term managed to change its contents. To the Greeks, *qh<sup>h</sup>sai* was associated with a segment of the human race on a par with domesticated animals—for that's what women were, even in the splendid days of Plato (whose skeletons in the closet we shall see anon). In Rome, on the other hand, *feminae* were free and, if they were rich, could have a merry old time behind the scenes sexually or politically. The declaration that, "Feminism has won freedom for women," would have puzzled Indo-Europeans, enraged the Greeks, and been welcomed by the Romans.

"Freedom"—the word for whose contents many modern women fight—comes from a men's-only ritual among ancient German tribes. Two clans who'd been mowing each other's members down made peace by invoking the god Freda<sup>43</sup> and giving up ("Freda-ing," so to speak) a few haunches of meat or a pile of animal hides to mollify the enemy and let the matter drop.<sup>44</sup> As for the last word in "Feminism has won freedom for women"—"woman" originally meant nothing more than a man's wife (the Anglo-Saxons pronounced it "wif-man").

"Feminism has won freedom for women"—over the millennia new generations have mouthed each of these words of ancient tribesmen in new ways, tacking on new connotations, denotations, and associations. The word "feminine" carried considerable baggage when it wended its way from Victorian times into the twentieth century. Quoth *Webster's Revised Unabridged Dictionary of 1913*, it meant: "modest, graceful, affectionate, confiding; or...weak, nerveless, timid, pleasure-loving, effeminate." Tens of millions of speakers from a host of nations had heaped these messages of weakness on the Indo-European base, and soon a swarm of other talkers would add to the word "feminine" a very different freight. In 1895 the women's movement changed "feminine" to "feminism," which they defined as "the theory of the political, economic, and social equality of the sexes."<sup>45</sup> It would take millions of women fighting for nearly 100 years to firmly affix the new meaning to syllables formerly associated with the nipple, timidity, and nervelessness. And even now, the crusades rage. With every sentence on feminism we utter, we thread our way through the sensitivities of masses of modern humans who find the "feminism" a necessity, a destroyer of the family, a conversational irritant, or a still open plain on which to battle yet

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again, this time over whether the word *femina* will in the future denote the goals of eco-feminists, anarcho-feminists, amazon feminists, libertarian feminists, all four, or none of the above.<sup>46</sup>

The hordes of fellow humans who've left meanings in our words frequently guide the way in which we see our world. Experiments show that people from all cultures can detect subtle differences between colors placed next to each other. But individuals from societies equipped with names for numerous shades can spot the difference when the two swatches of color are apart.<sup>47</sup> At the dawn of the twentieth century, the Chukchee people of northeastern Siberia had very few terms for visual hues. If you asked them to sort colored yarns, they did a poor job of it. But they had over 24 terms for the patterns of reindeer hide, and could classify reindeer far better than the average European scientist, whose vocabulary didn't supply him with such well-honed perceptual tools.<sup>48</sup>

All too often when we see someone perform an action without a name, we rapidly forget its alien outlines and tailor our recall to fit the patterns dictated by convention...and conventional vocabulary.

Physiologist/ornithologist Jared Diamond, in New Guinea, saw to his dismay that despite all his university studies of nature, illiterate local tribesmen were far better at distinguishing bird species than was he. Diamond used a set of scientific criteria taught in the zoology classes back home. The New Guinean natives possessed something better: names for each animal variety, names whose local definitions pinpointed characteristics Diamond had never been taught to differentiate—everything from a bird's peculiarities of deportment to its taste when grilled over a flame. Diamond had binoculars and state-of-the-art taxonomy. But the New Guineans laughed at his incompetence.<sup>49</sup> They were equipped with a vocabulary, each word of which compacted the experience of armies of bird-hunting ancestors.

All too often when we see someone perform an action without a name, we rapidly forget its alien outlines and tailor our recall to fit the patterns dictated by convention...and conventional vocabulary.<sup>50</sup> A perfect example comes from nineteenth-century America, where sibling rivalry was present in fact, but according to theory didn't exist. The experts were blind to its presence, as shown by its utter absence from family manuals. In the expert and popular view, all that existed between brothers and sisters was love. But letters from middle class girls exposed unacknowledged cattiness and jealousy.

Sibling rivalry didn't begin to creep from the darkness of perceptual invisibility until 1893, when future Columbia University professor of political and social ethics Felix Adler hinted at the nameless notion in his manual *Moral Instruction of Children*. During the 1920s, the

concept of jealousy between siblings finally shouldered its way robustly into the repertoire of conscious concepts, appearing in two widely-quoted government publications and becoming the focus of a 1926 crusade mounted by the Child Study Association of America. Only at this point did experts finally coin the term "sibling rivalry."

Now that it carried the compacted crowd-power of a label, the formerly non-existent demon was blamed for adult misery, failing marriages, crime, homosexuality, and God knows what all else. By the 1940s, nearly every child-raising guide had extensive sections on this ex-nonnity. Parents writing to major magazines cited the previously unseeable "sibling rivalry" as the root of almost every one of child-raising's many quandaries.<sup>51</sup>

The stored experience language carries can make the difference between life and death. For roughly 4,000 years, Tasmanian mothers, fathers, and children starved to death each time famine struck, despite the fact that their island home was surrounded by fish-rich seas. The problem: Their tribal culture did not define fish as food.<sup>52</sup> We could easily suffer the same fate if stranded in their wilderness, simply because the crowd of ancients crimped into our vocabulary tell us that a rich source of nutrients is inedible, too—insects.

The perceptual influence of the mob of those who've gone before us and those who stand around us now can be mind-boggling. During the Middle Ages when universities first arose, a local barber/surgeon was called to the lecture chamber of famous medical schools like those of Padua and Salerno year after year to dissect a corpse for medical students gathered from the width and breadth of Europe. A scholar on a raised platform discoursed about the revelations unfolding before the students' eyes. The learned doctor would invariably report a shape for the liver radically different from the form of the organ sliding around on the surgeon's blood-stained hands. He'd verbally portray jaw joints which had no relation to those being displayed on the trestle below him. He'd describe a network of cranial blood vessels that were nowhere to be seen. But he never changed his narrative to fit the actualities. Nor did the students or the surgeon ever stop to correct the book-steeped authority. Why? The scholar was reciting the "facts" as found in volumes over 1,000 years old—the works of the Roman master Galen, founder of "modern" medicine. Alas, Galen had drawn his conclusions, not from dissecting humans, but from probing the bodies of pigs and monkeys. Pigs and monkeys *do* have the strange features Galen described. Humans, however, do not. But that didn't stop the medieval professors from seeing what wasn't there.<sup>53</sup> Their sensory pathways echoed with voices gathered for a millennium, the murmurings of a crowd composed of both the living and the dead. For the perceptual powers of Middle Age scholars were no more individualistic than are yours and mine. Through our sentences and paragraphs, long-gone ghosts still have their say within the collective mind.

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Brain cells remain alive  
only if they can prove their worth in dealing with  
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