CHAPTER FIVE
The Dimension of Smell

THE SENSE DIMENSION OF SMELL

PHASE	METAL
ORGAN	LUNG
CORE ISSUE	CENTEREDNESS-DISORIENTATION

Smell is the chemical sense that enables us to detect signs and signals at a distance. Smell orients us with respect to environmental conditions, such as in the smell of fire and of rain. Scent markings inform us of the presence of various animals. We locate plants by their fragrances, and then imitate them with perfumes. Of all species, perhaps the most striking example of the orienting power of smell is the salmon: It depends primarily on smell to guide it on the long journey back to its stream of origin to spawn.

By smell we identify and attract mates, communicate our emotional state, advertise the genotype of our immune system, signal illness, and bond with our kin. Each person emits an individual smell signature, one that is transiently influenced by the smell of foods he eats. Smell is also a major component of flavor, contribut-

ing to the distinction between edible and inedible foods. We are not conscious of all the smells we register and react to, and sometimes we are led by the nose.

Smell occurs primarily through receptors in the nose, which send signals processed by the brain. New genetic research suggests that not odor receptors, but the nervous system's wiring actually determines how odors are defined.[1]

Smells are powerfully and durably linked with memory and emotion, and they can obliterate time: whiffing the odor of a cigar recreates childhood visits with a favorite uncle. But smell also happens on imperceptible levels. For example, sperm have chemoreceptors that orient them by smell to locate an egg.

The sense of smell is less acute in humans than it is in mammals. Part of the human sense of smell may have been displaced by increased acuity of vision and touch. With aging, humans lose some ability to smell; the significant majority of octogenarians have chronic dysfunctions of smell. In those who have Alzheimer's disease, the sense of smell declines markedly early in the course of the disease.

THE LUNGS IN TRADITIONAL CHINESE MEDICINE

The Lungs in TCM are conceived of as the ruler of the Qi, which they help to form and then distribute downwards throughout the body. The Lungs govern respiration, bringing in pure Qi and expelling impure Qi. The Lungs receive nutritive fluids from the Spleen, and Lung Qi moves and balances these fluids. As the ruler of the body's exterior, the Lungs contribute not only to the condition of the skin, but to the defensive energy that protects the body from disease. Thus, in biomedical terms, the lungs provide immune system functions. The Lungs and their paired organ, Large Intestine, belong to the Phase of Metal, which is associated with the autumn, and with crying and grief.

The Lungs are said to house the Po, or Corporeal soul. In TCM the Po is the equivalent of our bodily animal spirit. This animating presence lives and dies with the body, and is sustained with us through breathing. All breathing creatures have a Corporeal soul, a mark of brotherhood among animal life forms.

The signs and symptoms of Lung disorders in TCM include acute and chronic respiratory disorders, inflammation of the nose or throat, coughing, excessive phlegm, loss of voice, spontaneous sweating, allergies to airborne substances, and dry skin. Disorders of the colon (e.g., constipation, irritable bowel syndrome)

may be included because of the energetic link with the Lungs' paired organ, Large Intestine. Ménière's disease, discussed within the context of the dimension of hearing in Chapter 6, includes a disorientation symptom, namely vertigo, that not surprisingly also reflects the pathology of the Lungs: Phlegm and dampness obstruct the Middle Burner, part of one of the six Yang organs in the body, and suppress the Qi of respiration (also known as the Cleansing Yang Qi) that rises to the eyes, ears, nose, and mouth in order to maintain the clarity of the senses.

Respiration orients us to the past and the future. We take our first breath at birth, an inhalation of air and of the future before us. In death, a conclusive exhalation releases us from connection to past experience. In between birth and death, at an average of sixteen times a minute, we repeat this same activity which involves embracing the future and releasing ourselves from the past. The Qi gong master believes that by mastering inward breath, allowing it to fully extend downwards, into the Cinnabar Field[2] below the navel and within the abdomen (which the Chinese refer to as the dantien), a kind of immortality is achieved. This does not mean he cannot die, but rather that, having achieved mastery over all possibilities, he no longer worries about the future. The Qi gong master knows that mastering the extended, exhaled breath bodes freedom from attachment to the fleeting past and unencumbered participation in the life-energy sparkling amid the emptiness of the universe. Ordinary language also reflects an inherent linkage of inhalation and freedom within the context of independence. Thus the word inspiration denotes both the inhaled breath and receptiveness to astonishing ideas.

To follow the Tao means to seek mastery of both the inward and outward breath and therefore of the present, the future, and the past. It was often said in ancient times that to achieve the Tao matters less than setting out in the general direction of the Tao. This option and its attendant health benefits lie completely within the reach of ordinary people, not only Qi gong masters.

SMELL DIMENSION CORE ISSUE: THE CENTEREDNESS-DISORIENTATION AXIS

In the course of animal evolution, physiologic respiration moved from exterior surfaces to inside the body. Single-celled creatures exchange gases through cell-wall surfaces; frogs conduct respiration through their moist skins. As an animal's size increases, the surface area of the skin becomes insufficient to support the

greater requirements of gas exchange. The lungs in an adult human provide about 70 square meters of total surface area. Meeting these higher demands on physiologic respiration has drawn the location of breathing inward to the body's center.

There is also a connection between our psychological sense of centeredness and the locus of breathing. In panic attacks, breathing becomes rapid and shallow; in fact, this pattern of breathing may bring on a sense of panic. In panic we experience a loss of grounding, a psychological decentering in which rational control is wrested away by signals from the reptilian brain. Some individuals assert control over panic attacks and regain their centeredness by focusing on deep abdominal breathing.

CENTEREDNESS

To be centered or oriented means to be aware of one's self in one's surroundings. This aspect of centeredness or orientation may be spatial, environmental, cultural, social, or spiritual. There is also a temporal aspect to orientation, an awareness of the present moment tempered by relevant history and future possibilities.

Orientation takes a decidedly interior turn with respect to breathing. With every breath, we define our center by the depth of our relationship with the plenum of air, to which all other beings are simultaneously attached. The presence and penetration of the aromatic air orients us not only to all it conveys, but to our own central core. In a very real sense, each inhalation brings our future, while each exhalation removes our past. Thus, mastery of breathing orients us in the present with respect to past and future. No wonder that so many meditative practices emphasize attending to the breath, and that breath and spirit share the same linguistic root in so many languages. Breathing constitutes the foundation of centeredness.

DISORIENTATION

Disorientation is the opposing pole to centeredness on this axis. Our compass may become skewed or utterly lost, leaving us unable to locate or balance self-interest and communal interest. We may fall into temporal distortions, grieving, and unable to part with a preferred past, or frozen in terror by a traumatic event from years long ago. Lacking resolution and inspiration, we limp through life like one wounded. This ingrained disorientation then manifests through symptoms of chronic illness.

SMELL DIMENSION: CHRONIC ILLNESSES

Confirmation of how central orientation and directionality is to the sense of smell comes from the field of organic chemistry. Scientists in the fragrance industry have discovered that the nose assigns different odors to chemicals whose otherwise identical molecular structures are mirror images of one another. In other words, and to the subtlest degree imaginable, the nose knows its right from its left.[3]

SMELL DIMENSION ILLNESS: ALLERGIES

Why do we suffer allergies to grass, tree pollens, cat dander, dust mites, and mold spore, or why is such a lethal reaction caused in some people after eating peanuts or shrimps? As an inherent part of the immune system, allergic reactions at some point in our evolution likely served an important purpose. For example, as suggested in the chapter on touch, an apparently random sensitivity to gluten underlying celiac disease may have protected society at large by predisposing certain individuals to survive outbreaks of ergotism. Of course, like the anaphylactic shock from eating peanuts, certain allergies can present problems too severe to discount. Otherwise, to the extent to which annoying seasonal sneezing or itching of the eyes can be withstood, a partnering approach to allergies is preferred to a reliance on medication that suppresses the immune system.

SMELL DIMENSION ILLNESS: ALLERGIES
HOMEOPATHIC REMEDY

Kali carbonicum

Allergies can result when disorientation triumphs over centeredness. To illustrate, we draw on an example of analysis and treatment with a homeopathic remedy. The homeopathic remedy Kali carbonicum effectively treats allergies in an individual whose personality type hinges on the centeredness versus disorientation conundrum. The black-and-white Kali carbonicum personality adheres closely to a moral code that he expects others to also follow, and holds loyalty and honesty at a premium. Significantly, the Kali carbonicum individual is both mentally rigid and unusually sensitive to dampness.

An inability to be subtle and to detect subtle amounts of moisture in the nasal mucosa express one and the same issue. The olfactory apparatus is nestled in the nasal mucosa. A Kali carbonicum individual reflects a parallel relationship between an issue of directionality ("I can go only to the right or the left, not in-between") and the mucosa's inability or unwillingness to process moisture. In a person who is insensitive to Kali carbonicum, moisture is processed away by the nasal mucosa just as quickly as its presence is detected. In someone sensitive to Kali carbonicum, however, moisture accumulating in the nasal mucosa is not detected until there is far too much of it, at which point, an overreaction to moisture in the guise of an allergy attack erupts.

SMELL DIMENSION ILLNESSES: ASTHMA AND PANIC DISORDER

Gasping, a sharp intake of breath, is a common respiratory response to shock. A panic attack, serial gasping (not panting), manifests as a rapid and seemingly uncontrollable intake of breath. The brain overoxygenates, causing nervous excitement and fear to spiral further.

Individuals suffering from panic attacks temporarily suffer a delusion that they are sure to die soon. In response to a past experience of shock or exhaustion, a panicking individual, in fact, inhales too much of the future and loses the current connection with the source of his breath. Try gasping serially for a few moments while also looking in a mirror; it is unlikely you can do so without raising your shoulders, constricting your lungs, and appearing very anxious.

Wheezing is the diametrical opposite of gasping. Its pattern of asthmatic respiration may express overattachment to an emotionally suppressive past (and a consequent loss of connection to the source of the breath). Though desperate to exhale his past into oblivion, the wheezing asthmatic individual creates a shortage of oxygen. In a spiraling pattern, an increasing deficit of oxygen heightens anxiety and desperation, thereby further accelerating a stimulus to wheeze. Persons with asthma who wheeze often have had a childhood in which the natural expression of emotion had been systematically suppressed—an experience not unlike suffocation. Wheezing, a form of self-suffocation, subconsciously grants the patient with asthma permission to dramatize the pain of emotional suppression while simultaneously trying to cast off its suffocating consequences.

Frequent asthmatic episodes can produce a cascade in which a chronic in-

flammatory response and mucous buildup in the airways promote secondary breathing problems and additional anxiety. According to TCM, asthma is always rooted in misdirection, in the failure of the Lung Qi to descend. A partnering with the asthmatic condition so as to redress it now suggests itself: In order to encourage the Qi to descend, a person with asthma must learn to embrace, rather than fear, his omens.

Dreaded or not, future moments do not overwhelm centered individuals. Rather, each moment is calmly encountered in its own good time. Once centering is mastered, respiratory symptoms decrease in severity and frequency, or else vanish entirely, without recourse to drugs. Relaxation techniques, meditation, and yoga practices that embrace breathing exercises abound. Simple techniques promoting the descending movement of Lung Qi and reconnection with the source of the breath can be quickly learned and easily practiced. We are thus directed to achieve mastery of the past, the present, and the future.

SMELL DIMENSION ILLNESSES: HOARSENESS AND LOSS OF VOICE

Song and speech are created by means of the breath propelling a sound wave shaped within the larynx and cavities of the head. The loss or distortion of the voice occurs when one's connection to the source of the breath is broken. The head and larynx are, in effect, instruments that must be neither overly moist nor overly dry so as to produce a clear and pleasing sound. If the mucous membranes within the head are clogged, a nasal whine is produced.[4] Within the larynx, this relates to the Yin (natural moisture) of the Lungs, which, should they become deficient, dry out the larynx, causing hoarseness and loss of the voice.

When laryngitis occurs suddenly and not as a result of abuse of the voice, the possibility of an emotional cause has to be considered. TCM theory holds, in fact, that excessive worry dries out the body's fluids. Clinical homeopathic experience indicates that women are more inclined than men are to be subject to an emotional loss of the voice, a condition treated with great effectiveness with Ignatia. This homeopathic remedy is appropriate in situations in which a shocking grief has suddenly turned a woman's life upside down, producing, not only a loss of the voice, but disorientation and frequently depression as well.

SMELL DIMENSION ILLNESSES: SKIN AILMENTS: PSORIASIS, ECZEMA, ACNE

Although amphibians, reptiles, and mammals have lungs housed within their chest cavities, the lungs are specialized organs that did not appear on the scene until the evolution of the lungfish. Yet, older and more primitive organisms, even those consisting of only a single cell, also respire. They do so by means of an exchange of gases that occurs through the cell membrane of the skin. Even without the benefit of microscopes, TCM, which demonstrates that acupuncture points located along the Lung meridian are indicated in the treatment of most skin conditions, preserves this biological truth. Similarly, TCM describes the numerous wrinkles and extraordinary creases found in the faces of long-time smokers in terms of the depletion of Lung Yin (natural moisture).

Like frogs, in whose always-moist skin some exchange of gases necessarily occurs, we, through skin rashes and eruptions, attempt to vent internal toxins. Skin rashes and eruptions may also express a deficiency in our ability to vent a pernicious entity known in TCM as Damp Heat. We find echoes of outer membrane gas exchanges in TCM's Qi gong vital energy exercises. Here, a vestigial (or literal) ability to respire through the skin is invoked by the Qi gong instructor's directive that the practitioner visualize herself breathing through every pore in her body.

Dozens of homeopathic remedies may be used to assist the body in clearing it of internal heat and toxicity. Of these, the most frequently used is undoubtedly Sulphur.

SMELL DIMENSION ILLNESSES: LARGE INTESTINE AILMENTS: CONSTIPATION AND IRRITABLE BOWEL SYNDROME (IBS)

Like the skin, the intestines are an interface surface that functions as a protective barrier. The intestines sequester bacteria-laden digestive matter from the rest of the abdominal cavity. The esophageal-intestinal tract is a continuous tube, extending from the mouth to the rectum. In addition to food, air and other gases enter this tract. Although oxygen does not undergo oxidation within the gut, gas exchanges and gas production from the intestinal flora do occur. The expulsion of these gases from the tract's terminus thus qualifies the esophageal-intestinal tract, in a metaphorical sense at least, as a secondary site of respiration. In its pairing of

the two organs in theory, TCM recognizes the overlapping function of the lungs and large intestine viscera.

Acupuncture Points as Treatment

The acupuncture meridians pertaining to the Lungs and the Large Intestine are found positioned side by side on the upper limbs. The key to treating patients who experience symptoms of the Lung and the Large Intestine simultaneously, as well as symptoms of skin conditions, is an acupuncture point (Lung 7), located on the wrist where the two meridians intersect. Another acupuncture point, renowned for its effectiveness in the treatment of skin disorders, is a Large Intestine point located on the outer elbow (Large Intestine 11). Stimulation of an acupuncture point found on the lower leg (Stomach 40) helps the body process excessive mucous, whether it is lodged in the lungs or in the intestines.

SMELL DIMENSION ILLNESSES: LARGE INTESTINE AILMENTS: CONSTIPATION AND IRRITABLE BOWEL SYNDROME (IBS)

HOMEOPATHIC REMEDY

Natrum sulphuricum

Healthful bowel activity can be understood as a steady downward and outward movement. According to TCM, dampness, mucous, and excessive dryness afflict the airways and intestines in a similar fashion: Dampness and mucous can cause diarrhea, as well as an uncontrolled urge to move the bowels; dryness produces constipation. The obstruction and dysfunction of the intestines may be construed to be a disordered digestive exhalation. Conversely, for the intestines, the airways, and mental functioning, the feeling of being clear corresponds with a state of health.

Because the diagnosis of irritable bowel syndrome includes a vast number of symptoms, dozens of homeopathic remedies are of potential use. One in particular is noted for its thematic aptness: Natrum sulphuricum, also known as sodium sulfate, or Glauber's salt. Its natrum component addresses grief (disorientation-in-time); its sulphurous component relates to the presence of internal Heat. Natrum sulphuricum's famous keynote, "better after a bowel movement," implies a psychologically driven need to feel clear.

SMELL DIMENSION ILLNESSES: MENTAL DISORDERS

The emotion that TCM designates as specific to the viscera of the Lungs is sadness, or grief. The fact that in sobbing the entire chest heaves reminds us of this. It is not unusual to become sad when we look at the falling leaves of autumn, when we are most reminded of our mortality—the season which TCM associates with the dimension of smell.

After a tragedy or loss, a mysterious process of self-regulation enables the bereaved to eventually attain distance from the loss. If prolonged or excessive pressure is brought to bear on a person's particular sensibility, this process can even be short-circuited. It is a fallacy to assume that each of us is saddened by exactly the same experiences, or to the same degree or length of time. Our constitution and its individual hot-button wiring account for profound differences in reactions. To the extent that it affects the particular individual, insufficiently processed grief stresses the Lungs, and thereby may also play a role in predisposing lung and breast cancer.

SMELL DIMENSION ILLNESS: SEASONAL AFFECTIVE DISORDER (SAD)

Although a case can be made that depression arising from the deprivation of sunlight, namely, seasonal affective disorder (SAD), is rooted in the dimension of sight, I interpret SAD as expressing disorientation, which pertains primarily to the dimension of smell. The shortening of daylight hours in wintertime may cause many of us to become blue, but the distress of the SAD individual can be overwhelming. Listless and depressed, he droops much like a plant that fails to orient itself adequately to the sun.

Sunlight and water are key components of a respiration process known as photosynthesis, by which plants manufacture their own nutrients. It is fair to say that plants deprived of sunlight fear imminent starvation. Light-starved SAD individuals suffer the unbalancing of their master gland of homeostasis, the hypothalamus. As a result, regulation of numerous vital functions becomes problematic.

The hypothalamus's main function is maintenance of our body's status quo, the grounding of our physical existence in the present moment. The hypothalamus is responsible for creating and sustaining set points for our blood pressure and skin temperature. It determines what level of toxicity our blood can carry or

our brain tissue can be exposed to before detoxification by expulsive vomiting is required. Because the limbic and olfactory systems project to the hypothalamus, the gland plays a major role in regulating hunger and sexual desire. In regulating our circadian rhythms and synchronizing them with daylight and darkness, the hypothalamus also sets our sleep patterns.

We can rebalance the hypothalamus and overcome SAD by inhaling additional sunlight through the pores. By combining maximal outdoor activity with periodic, indoor exposure to full-spectrum lighting similar to sunlight, we help our body recover its physical bearings. Inhalation of sunlight orients our body to the demands of the present moment.

SMELL DIMENSION ILLNESS: SEASONAL AFFECTIVE DISORDER (SAD)
HOMEOPATHIC REMEDY

Sol (Imponderables)

There is a homeopathic remedy, Sol, which is actually made from potentiated sunlight. Sol belongs to a group of remedies made from energies such as x-rays and spectrum colors, individually and in combinations. Because of their subtle composition, extreme even for a homeopath, these peculiar remedies, known as the Imponderables,[5] produce allopathic as well as homeopathic effects. Sol may be useful in dealing with disorientation resulting from both an excess of sunlight, as in a heatstroke, and with a deficiency, as in "sundowning" behavior, discussed later in this chapter in the section on Alzheimer's disease.

SMELL DIMENSION ILLNESS: DEPRESSION

The prolonged disaffection of chronically depressed individuals signals their disorientation in time and their loss of connection to the source of breath. Sighing (a junior version of wheezing), commonly found among depressed individuals, expresses a desire to exhale away painful past experiences. Yawning (a junior version of serial gasping) pertains to boredom and anxiety with the current state of affairs. The overinhalation action of yawning may be a subconsciously practiced act intended to propel us away from the present moment into the future.

SMELL DIMENSION ILLNESS: DEPRESSION
HOMEOPATHIC REMEDY

Natrium muriaticum

Let us consider a female patient for whom the homeopathic remedy Natrum muriaticum (sodium chloride, or table salt) is beneficial. As a girl she would have been described as possessing an emotionally sensitive nature. For our purposes, this indicates enjoyment of poetry, a tendency to form powerful emotional attachments, a readiness to cry or laugh easily, and a capacity to be profoundly moved by significant events. At the age of twelve, this girl suffers the loss of her mother with whom she had enjoyed an especially strong bond.

The grief she subsequently undergoes proves difficult to process. Well into adulthood she is marked by a diminished ability to cry openly, accept consolation, or display emotion outwardly. She has allergies, perfectionist tendencies, a habit of smiling inappropriately when relating sad events, and insomnia resulting from distressing memories.

Unlike psychologists, homeopaths are not restricted to noting only mental and emotional symptoms; specific physical symptoms can be included as well. Thus, a headache or eye pain made worse from exposure to the sun, back pain ameliorated by strong pressure, a tendency to constipation or hemorrhoids, and cravings for salt and chocolate, are included in our subject's profile.

For our patient, pushing through the intensely experienced feeling of abandonment after the death of her mother is a nonviable option; doing so is perceived as an act of disloyalty to her mother. Compounding the patient's difficulty in allowing grieving to progress is a second dilemma: If her crying could ever adequately express the depth of her grief, her tears would never end. In her suppressed state as a grown woman she retains a susceptibility to overriding sadness and melancholy. All that is needed for an episode of depression to be triggered is for the pertinent hot button to be pushed, which almost any experience suggestive of loss accomplishes. Our subject's emotional life is a radical disjunct summed up by the statement: "I am desperate for intimacy, but keep it at arm's length."

Many caregivers would justifiably determine that our patient is clinically depressed. Homeopathic and dimensional reasoning, however, lends further perspective to this diagnosis. To need Natrum muriaticum, meaning to be under the influence of sodium chloride, denotes a state of self-containedness, a concept

familiar in regard to the relationship between excess salt intake and hypertension. Salt holds water in the cells, thereby increasing arterial pressure. Our Natrum muriaticum patient may be compared to a besieged country that expends excessive resources defending its periphery. Although the country appears strong outwardly, it is tender and weak within its borders.

Perhaps a means other than Natrum muriaticum can help to further resolve our patient's delusional need to misappropriate resources and overprotect her interior. With successful treatment, our patient breaks through her overattachment to the past. She begins to experience the fullness of the present moment, and recaptures her orientation in time.

SMELL DIMENSION ILLNESS: ALZHEIMER'S DISEASE "A BROKEN COMPASS"

Alzheimer's disease has been defined as an irreversible, progressive, debilitating brain disorder resulting in the death of brain cells, dementia, and, eventually, the death of the individual. In the year 2000, it was estimated to affect between three and four million Americans, and it was already the third most costly disease in the U.S. Senescence is the greatest risk factor. With 78 million baby boomers beginning to turn 60 years of age, in the year 2007, a new case of Alzheimer's disease developed approximately every 72 seconds. If the trend continues, by mid-century this will occur every 33 seconds.[6]

Alzheimer's disease destroys our bearings by spiraling like a tornado upwards through the brain. Although the reasoning functions located in the cerebrum succumb in time, the hippocampus and orientation are the first to be attacked. Early research on autopsied brains of individuals suffering damage to the hippocampus reveal the crucial importance of this region of the limbic system to the maintenance of orientation, or frame of reference.[7] If the Alzheimer's patient startles or becomes terrified when he hears a telephone ring, it is because he no longer associates the ringing sound with a telephone. If a fire starts in his apartment, he may be unable to link the presence of flames with danger. As disorientation advances, the meaning of familiar words drops away from their sounds.

Recent research suggests that hippocampal spatial firing patterns and neuronal responses to task-relevant stimuli are highly sensitive to context; furthermore, spatial memories derived from experiences that occurred in familiar surroundings before the illness set in may possibly be independent of the hippocampus.[8,9]

A study, begun in 1991, by the National Institute on Aging, enrolled 678 members of sisters of a religious congregation (called the "Nun Study"); the study followed the cohort of sisters for several years in order to research early-, mid-, and late-life risk factors for brain diseases. Results of the study suggested that the risk factors for Alzheimer's disease, such as its main genetic marker, the apolipoprotein E isoform ApoE4, age, and linguistic ability, are strongly associated with memory impairment, but do not convert memory impairment into full-blown Alzheimer's disease. The researchers inferred from this that major risk factors occur very early in the cascade of events leading to Alzheimer's and that there is a critical time, before the symptoms appear, when interventions can have the greatest effect on preventing brain diseases.[10]

Until 2010, there were no clear-cut tests to diagnose Alzheimer's illness during life, although the presence of the risk factor ApoE4, while it did not prove that a dementia is associated with Alzheimer's, might supplementally indicate the likelihood that it is. In 2010, a team of researchers, using the U.S. Alzheimer's Disease Neuroimaging Initiative database, reported that three biomarkers derived from cerebrospinal fluid correctly classified 90 percent of patients diagnosed with Alzheimer's disease, and was also found in more than one-third of cognitively normal adults; they concluded that these protein biomarkers "are true indicators of the pathogenic process at an early stage."[11] Although an understanding of the genomics of Alzheimer's disease is just beginning, it is becoming clear that Alzheimer's is an independent, complex clinical entity associated with multiple genetic defects, arising either by mutations or by susceptibility to environmental factors.[12]

Inherited genes and chromosomal mutations are found to be correlated in particular with late-onset Alzheimer's disease. As will be argued in the chapter on the dimension of hearing, inherited susceptibilities to illness represent the memory of encounters with pathology having consolidated within Kidney Yang. One recent study comparing the dietary evolution of chimpanzees with humans suggested that in humans, ApoE has evolved over millions of years as an evolutionary adaptation to meat-eating, humans originally having been plant eaters. Further, the ApoE4 allele is considered ancestral within humans, and exists in all human populations within the range of less than 1% to 45%. The ApoE4 variant hastens degenerative changes in the arteries and brain and, depending on the population, can present a greater than ten-fold excess risk of Alzheimer's disease.[13] Although a meat-rich diet proffers the advantages of greater concentrations of calories and

micronutrients, the paradox of this diet, according to the study's author, is that "The greater meat consumption of longer-lived humans" with its corresponding "greater fat and caloric intake is associated with accelerated pathogenesis and shortened lifespan." Moreover, although the largely plant-eating chimpanzees studied in captivity rarely live longer than 50 years, they "present a lower incidence of cancer, ischemic heart disease, and neurodegeneration than current human populations."[13]

To stretch the paradox even further, in 2010, Yian Gu and colleagues at Columbia University published a four-year cohort study of 2,148 patients, ages 65 years and older, that identified a protective dietary pattern associated with a 40% lower risk of developing Alzheimer's. This diet was rich in olive oil, nuts, fish, poultry, fruits, dark and green leafy and cruciferous vegetables, and avoided high-fat dairy products, red meat, and organ meat; in other words, a dietary pattern high in omega-3 and omega-6 fatty acids, vitamins E and B-12, and folate.[14]

A 2010 report from a team of Italian researchers compared the gut microbes in healthy children from Florence, Italy, and from a rural African village in Burkina Faso, where the children still ate foods similar to those eaten 10,000 years ago, at the time of the birth of agriculture—that is, a diet high in fiber, cereals, legumes, vegetables, and nonanimal protein. The researchers found that compared to the Italian children, who ate foods typical of a Western diet—high in animal protein, fat, and sugar, and low in fiber—the Burkina Faso children had more populous and diverse gut microflora that protected them from allergies and diseases such as Crohn's disease, inflammatory bowel disorder, and diarrhea. The study results suggested that "diet has a dominant role over other possible variables such as ethnicity, sanitation, hygiene, geography, and climate, in shaping gut microbiota." The researchers further hypothesized that the "consumption of sugar, animal fat, and calorie-dense foods in industrialized countries is rapidly limiting the adaptive potential of the microbiota."[15]

Clinical study also indicates that Alzheimer's disease embodies the dimension of smell's central liability, disorientation. Indeed, individuals who progress toward Alzheimer's dementia undergo a distortion and loss of the sense of smell (which they themselves may fail to register), perhaps already in the early stages of the illness.[16]

The dimension of smell, as the ancient Taoists noted, is associated with a specific flavor, "umami."[17] The taste of umami ranges from pungent to acrid. Detection of umami by means of smell and taste indicates the presence of amino acids, such

as those contained in broiled meats and monosodium glutamate. TCM reasoning indicates that sensitivity to, or desire for, this flavor is medically significant.

Moderate consumption of umami-flavored foods or exposure to pungent aromas strengthens the dimension of smell and enhances orientation; but excessive consumption of umami-flavored foods undermines orientation. An intense craving for meat may predispose us to, or result from, excessive meat consumption; in either case, a high demand for umami reflects an energetic disharmony.

SMELL DIMENSION ILLNESS: ALZHEIMER'S DISEASE
HOMEOPATHIC REMEDIES

Sol (Imponderables)

The literal meaning of orientation is to face eastward, toward the Orient, in the direction from which the sun rises. At sundown, when Alzheimer's patients are most disoriented, they exhibit a tendency to wander that is so commonplace, skilled nursing home staff refer to it as "sundowning." In every respect, sundowning is the reverse of orientation. Sol, a homeopathic remedy made from sunlight, introduced earlier in the discussion of SAD, may prove to be of use with regard to sundowning and related behaviors. Sol's remedy picture includes features very specific to Alzheimer's patients: easily frightened, fatigued toward the end of the day, indecisive, restless, irritable, and, of course, disorientated.

Alumina

Homeopathic materia medica helps us to understand Alzheimer's disease by modeling the disease as a failure to resolve core issues. An Alumina remedy state results from either exposure or response to life events. In the case of exposure, the remedy picture reflects aluminum's chemical toxicity and the effect on the brain's neurotransmitters; as a response, the remedy indicates that a susceptibility to the Alumina mind-set has been promoted. Individuals in need of Alumina manifest a powerful confusion, a feeling akin to having two heads. This is induced by events having led them to compromise their will and suffer loss of independence.

The evolution of an Alumina mind-set can also invite neuropathology. An elderly woman suffering from multiple sclerosis was in my care as a patient. As a young woman, she had been pushed into marrying a man she did not care for by

an alliance of the man himself with her older sister. Use of the remedy Alumina resulted in a greater willingness on her part to hold a conversation, in mitigating her sense of confusion, in a slight, but definite, improvement in her coordination, and in a generally more relaxed demeanor.

SMELL DIMENSION ILLNESS: BRAIN-WASTING PRION DISEASES

Prions, or "proteinaceous infectious particles," are peculiar and unique disease-causing proteins, found by the neurologist Stanley B. Prusiner, in the early 1980s; Prusiner called the protein PrP, for "prion protein." For reasons and by means as yet unknown, prions are able to invert their structure, replicate, and change their shape, converting normal protein molecules into dangerous ones. The known prion diseases, all fatal, are also called spongiform encephalopathies because the proliferation of prions leaves gaping holes in the brain tissue of mammals. The most common form, found in sheep and goats, is called scrapie, a term arising from the animals' need to scrape off their wool or hair because of an intense symptomatic itch. Bovine spongiform encephalopathy, named Mad Cow disease, was identified in cows in Great Britain in 1986; the source of the disease was found to be a food supplement fed to the cows made from ground-up carcasses of cattle and sheep, which may have been infected with a brain-wasting disease.

In humans, prion diseases are infectious, neurodegenerative diseases that have a uniquely wide range of phenotypes and can be sporadic, familial or inherited, or acquired by infection. In fact, the great variability of phenotypes has made it difficult to identify prion diseases.[18] Some prion diseases, like kuru, are found only in highlanders living in Papua New Guinea; it has been assumed that they acquired kuru through ritual cannibalism. Since the practice has stopped, kuru has virtually disappeared. Other prion diseases, like Creutzfeldt-Jakob disease (CJD), occur worldwide, usually sporadically. About 10% of CJD is known to be inherited; the rest is iatrogenically transmitted, in some cases by eating contaminated meat. Scrapie, CJD, and kuru have all been shown to be transmissible and fatal.[19]

By 2007, over 200 cases of a virulent CJD departure, variant Creutzfeldt-Jakob disease (vCJD), had been reported in humans, primarily in the United Kingdom. The clear evidence showed that vCJD was transmitted to humans by eating prion-contaminated beef.[20] Yet more virulent strains of fatal prion diseases in humans, such as the new variant Creutzfeldt-Jakob (nvCJD), are being found.[21]

According to Prusiner, in 1995,

> We do know with certainty that cleavage of scrapie PrP is what produces PrP fragments that accumulate as plaques in the brains of some patients. Those aggregates resemble plaques seen in Alzheimer's disease, although the Alzheimer's clumps consist of a different protein. The PrP plaques are a useful sign of prion infection, but they seem not to be a major cause of impairment. In many people and animals with prion disease, the plaques do not arise at all.[19]

Prusiner's observation regarding PrP's relationship to plaques was investigated a step further in research by Laurén and associates, published in February 2009.[22] According to these researchers, prion proteins appear to interact with amyloid-beta from early-stage plaques. In this study, however, they found no evidence that the prion proteins actually fold into an abnormal shape or cause Alzheimer's.

Following along this line of work, a study by Ghoshal and colleagues at Washington University School of Medicine, published in October 2009, reported for the first time that three persons from a family in Illinois who had died from an inherited form of CJD, had the same type of amyloid plaques as those found in the identical brain regions of Alzheimer's patients. According to the researchers, "The finding adds to other, earlier evidence suggesting that the misfolded protein believed to cause CJD, known as a prion, appears to play a role in the Alzheimer's disease process."[23]

Apparently, Jews of Libyan descent have an incidence of familial CJD (fCJD) which is about 100 times higher than that of the general population. Initially attributed to consumption of the brains of sheep, the suggested origins of the fCJD identified in this population have included a mutation on the prion protein gene as well as abnormal stress and anxiety levels among the healthy fCJD mutation carriers.[24,25]

SMELL DIMENSION ILLNESS: CANCER OF THE BREAST AND LARGE INTESTINE: FRAMESHIFT MUTATIONS

When we characterize a particular trait or disease as genetic, we generally mean that its emergence is "preordained." Expressing a biochemical disorder, or glitch, the genetic trait or disease lies outside our ordinary sphere of influence. What so frightens people about cancer is its consequent uncontrollability. Some mechanism goes haywire in the program according to which cells normally divide and cease dividing. Previously typical cells begin to multiply rapidly and invasively in a process that nerve and hormonal action are at a loss to control.

But not all the news is bleak. It is now clear that an important distinction exists between our genetic design, or genotype, and healthful or unhealthful gene expression, or phenotype.[26] The phenotype may be modified by lifestyle as well as by activation of the mind-body connection.

We find that centeredness combats disorientation, even at the genetic level. Both the colon and the breast are vulnerable to orientation-related issues because they are components of the large intestines and chest, anatomic regions associated with the dimension of smell, and noted for the unusual degree of chaos governing cell replication within its attendant malignancies. Forms of these cancers result from a particularly devastating type of mutation known as a frameshift, representing disorientation occurring at the genetic level.

Frameshift Mutations

When disorientation manifests at the linguistic level, the sounds of words cease to express their proper meanings; like a worn-out fabric, the context of our mental associations has fallen apart. Genetic replication can be likened to a linguistic process that requires a context of meaning to be sustained.

A nucleotide equals a frame that is being read. In terms of a linguistic analogy, the frame equals the context of meaning. During gene replication, messenger RNA, using the DNA as a template, copies a series of instructions for protein synthesis. The expression of these instructions is virtually a prose sentence in which codons (a specific sequence of three DNA bases within a gene, responsible for directing the synthesis of amino acid molecules possessing highly specific molecular structures that are vital for the formation of proteins) function as the constituent

words. The nucleotides themselves may be thought of as syllables.

In a related, though far less dangerous, mutation than a frameshift mutation, the single nucleotide polymorphism, substitution of an incorrect nucleotide during transcription of DNA bases in the production of messenger RNA, generally alters only a single triplet group, leaving the remaining sequence of codons unaltered. This is the equivalent of writing a set of instructions for the manufacture of a defective shoe, which, when it leaves the assembly line, is found to lack a specific feature such as eye holes.

In the much more serious mutation known as a frameshift, which involves the bases in an entire sequence of codons within a molecule of messenger RNA following the deletion (or addition) of a single nucleotide, the frame shifts (forward or backward), leaving the following sequence of bases scrambled. A frameshift produces the equivalent of a set of shoe-manufacture instructions that somewhere in the middle of the paragraph degenerates into total nonsense. When the instructions are followed to the letter, an object unrecognizable as a shoe rolls off the assembly line.

A frameshift is thus a mutagenic change that brings an unusual degree of disorganization to the gene packet involved in genetic replication. It leaves nothing but chaos in its wake. Frameshift mutations, which almost always result in the synthesis of an abnormal protein, produce dysfunction ranging from mild abnormality to malignancy.

Acridine, a hydrocarbon compound, a by-product of coal combustion used in the manufacture of dyes, biological stains, and antibacterial agents, is a mutagen and the most acrid gas known. Positively-charged acridine dyes bind directly to the DNA; they sandwich themselves between stacked base pairs of DNA, inserting or deleting one base pair in DNA, resulting in frameshift mutations.

The Wellcome Trust Sanger Institute's Cancer Genome Project currently lists over 75 cancer genes, involving the entire range of tumor types and cancer syndromes, that are characterized by frameshift mutations.[27]

A BROADER PERSPECTIVE

Although few among us, if any, are sufficiently advanced that we can command perfect orientation at the biochemical level, we can limit the risk of predisposal to a genetic disorientation through healthy living.

Pressing as genetic and biochemical questions are, they reflect an overly narrow perspective. The virus we seek may long remain shadowy; the prion, mysterious; the toxin or mutant gene ultimately responsible for turning our healthy brains into sponge, continually beyond reach. Preservation of our mental health requires a shift to a broader and more compassionate perspective. A resolution to respect animals, and to follow the diet nature has given us to eat is in order. Within our capacity to perform, a simple adjustment can deliver a valuable benefit: the reinstatement and preservation of our bearings.

The compassionate perspective is well described by what the Taoists call the Po, a kind of universal soul encompassing all things that breathe. We visit the Po when we access the dimension of smell by practicing awareness of our breathing. Our most precious commodity, the air, is shared by all, and in equal measure. Visits to Po consciousness teach us to have regard for others. In doing so, we learn that no success, failure, profit, loss, survival, or death is ever completely an individual matter, and that universal brotherhood is more than a slogan.

THE SMELL DIMENSION: PERSONAL THERAPEUTIC PRACTICES AND MASTERS OF EXPRESSION

Various therapeutic practices can help promote health within the sense dimension of smell. **Table 1** on the following page shows several of these practices.

Masters throughout history have strongly expressed either the positive or negative poles of the sense dimension of smell. **Table 2** lists a few who exemplified one or the other side of the centeredness-disorientation axis, the core issue of the dimension of smell.

Table 1. Smell Dimension: Health-promoting Practices

Develop a strategic capability	Meditate; harmonize the breath
Minimize scent pollution	Process grief, then move on
Preserve clean air	Practice martial arts
Nurture the mother of smell, *Taste*: "Identify and accept genuine challenges"	Nurture family ties

Table 2. Examples of Masters of the Sense Dimension of Smell

NEGATIVE POLE: DISORIENTATION	POSITIVE POLE: CENTEREDNESS
Picasso: fractured space in Cubist paintings	Meditation instructors: "Being in the here and now
Stan Brakhage: fractured time in experimental films	Zen Master Suzuki Roshi (*Zen Mind, Beginner's Mind*)
Alain Resnais: (*Last Year at Marienbad*)	Martial arts masters from Tai Qi families: centered awareness of danger, direction, and possibility
	Morehei Uyeshiba, founder of Aikido