5 THE CODE OF BEAUTY: ANANDAVARDHANA

About four years into the writing of my own fiction about history, I traveled to New York over a summer break. I wanted to see friends, to do some computer work for my old scribing company, and also to escape my novel for a few weeks. This was my first book, but by now I had learned that when you are in the middle of a novel, you cannot escape the writing except through distraction. The story buzzes and hums inside you, and any moment of rest gives it an opportunity to scrabble to the surface and claw at your attention. New York was full of diversions. And being away from my papers and books meant that I couldn't really work, so I could indulge freely.

One evening, a friend told me about a reading by five touring Indian poets at the Museum of Modern Art (MoMA). We went, and I heard the critic and poet A. K. Ramanujan read his translation of a classical Tamil poem:

> What could my mother be
> to yours? What kin is my father
> to yours anyway? And how
> did you and I meet ever?
> But in love
> our hearts have mingled
> like red earth and pouring rain.[1]

I felt a shiver of recognition. I had been scribbling titles in my notebooks for years, but now I knew. This was what my book would be called. I went to a library the next day and found Ramanujan's book *The Interior Landscape*. The poem had been written some time between the first and third centuries CE by a poet known only as Cempulappeyanirar, "The Poet of the Red Earth and Pouring Rain." It lost none of its simple, evocative vastness when I read it on a page, and I was grateful, but a title was not the only richness that Ramanujan offered me. In his elegant afterword, he led the reader into the intricacies of the Sangam literature of south India, which flourished from about 300 BCE to 300 CE. "Sangam" is "confluence" in Tamil, and refers to the assemblies of scholars and poets who—according to legend—had met for thousands of years in the south. The Sangam poets divided the world into *akam*—Ramanujan's "interior landscape," suffused with the pleasures and pains of love, sex, and attachment—and *puram*—the external panorama of politics, heroic striving, social attachment and obligation. In these poems, a complex series of symbolic associations creates mood and meaning; each flower and landscape functions within a convention. So, the desert or drought-ridden land of the *palai* is where lovers part; the *kurinji* flower, which blooms only once every twelve years, gives its name to the landscape of the hills, abundant with water and fruit, alive with desire. "In their antiquity and in their contemporaneity, there is not much else in any Indian literature equal to these quiet and dramatic Tamil poems," Ramanujan wrote. "In their values and stances, they represent a mature classical poetry: passion is balanced by courtesy, transparency by ironies and nuances of design, impersonality by vivid detail, austerity of line by richness of implication."[2]

Ramanujan's explication of this complex aesthetic gave me the beginnings of a vocabulary which I could use to speak about what I was trying to do with my book. I was not writing a Sangam fiction, of course, but I now began to investigate the rich traditions of Indian literary theory. There was a peculiar comfort in reading about the structures and operations of literature as understood by these theorists; in their investigations, they explored what literature was and what it did as a system, as a set of interlocking conventions

and assumptions. And as I read Ramanujan and others, I had the curious sensation of recognizing myself, of beginning to know why I was moved by a certain kind of narrative construction, why a particular heightened mode of drama struck me as sublime. The fractures induced by colonialism hadn't eradicated these aesthetic preferences from within me or my culture; they remained embedded in practice, in the shapes of temples and in Indian movies and spoken languages and my novel. But a certain silencing had happened, so that what was known couldn't be spoken, so that this longing had no language in which it could be uttered.

I am using the English word "aesthetic" here, but I should emphasize that there is a very strong tendency in the developmental, evolutionary model of history to limit the possibility of aesthetic thinking and theorizing to the modern, the contemporary. According to the literary scholar Geoffrey Galt Harpham:

> No concept is more fundamental to modernity than the aesthetic, that radiant globe of material objects and attitudes ideally independent of politics, rationality, economics, desire, religion, or ethics. For as Shaftesbury, Kant, Alexander Baumgarten, Friedrich Schiller, and their successors have elaborated it, the aesthetic gathers into itself and focuses norms and notions crucial to the self-description of an enlightened culture.

Among these philosophers and thinkers, the general consensus—following Kant—is that the aesthetic can flourish

> only in a certain kind of culture, a "modern" culture capable of sustaining a "disinterested" attention to things that have no utilitarian function, no necessary connection to meanings or concepts . . .
>
> The aesthetic is thus . . . an ideological creation, an attribute posited by modernity of itself.[3]

The cult of modernity, in order to demonstrate the newness of modernity, needs to always insist on the chasms that separate modernity from the past. The modernity of colonialism insisted on a corresponding un-modernity in the regions it conquered. It had to, in order to justify its own presence in these areas of darkness. Progress demanded that the premodern—usually characterized as primitive, childish, lesser developed, and, most significantly, as feminine—be brought into the light through judicious, disinterested applications of education and force. Guns, trains, and the telegraph were the blessed tools of this righteous, masculine mission. And it is no coincidence that the first classrooms in which the English novel was studied were located in colonial universities in India. The task of turning Indians into proper modern subjects with the right sort of interiority, reflexivity, and individuality demanded that the most sophisticated technology of selfhood be brought into play, and of course this instrument was the modern novel. But many of the protagonists of my novel were premoderns. One of them, Sanjay, was a poet. How did he imagine the self? And Sanjay might have asked, what makes a poem beautiful? I tried to find out, and to do so I had to find my way into the Sanskrit cosmopolis—so named by the Indologist Sheldon Pollock—into the Sanskrit-speaking and writing ecumene which, at its height, sprawled from Afghanistan to Java, across dozens of kingdoms, languages, and cultures.

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The earliest available text in Sanskrit is the Rig Veda, dating—according to current scholarly consensus—from around 2000–1700 BCE.[4] The Rig Veda, and the other Vedas that followed—the Sama, Yajur, and Atharva Vedas—were considered to be eternal, uncreated, "not of human agency" (*apaurseya*), and "directly revealed" (*shruti*) to the seers; these qualities distinguished them from all other religious

texts, which were "what is remembered," *smriti*. The language that these Vedic wisdom texts were orally transmitted in—not yet called Sanskrit—was therefore also eternal, uncreated, *devavani*—"the language of the gods." The truths that the Vedas embodied lay not only in the sense, the verbal meaning, but also in the sounds, the pitch, the tonality, the meter. Therefore it was vitally important to maintain these qualities from generation to generation, to guard against linguistic deterioration and slippage. Among the auxiliary sciences developed as "limbs of the Veda," *vedanga*, there were several that ensured faultless reproduction across the years, including phonetics, grammar, etymology, and meter. Accurate preservation of the Vedas earned spiritual merit. Grammar was the "Veda of Vedas," the science of sciences; it was called *vyakarana*, simply "analysis," and was the foundation of all education. The Brahmins, the priestly caste, were trained rigorously in the cultivation of memory and linguistic expression. The effort was successful; the Vedas are chanted today exactly as they were almost four millennia ago, complete with archaic tones and usages present nowhere in the Sanskrit that followed.

A single text from about 500 BCE, the *Ashtadhyayi* (Eight chapters), is usually credited with forming this later "classical Sanskrit"; with this one book, the grammarian Panini created the fields of descriptive and generative linguistics. Drawing on the sophisticated regimes already developed, he attempted to create a "complete, maximally concise, and theoretically consistent analysis of Sanskrit grammatical structure."[5] His objects of study were both the spoken language of his time, and the language of the Vedas, already a thousand years behind him. He systemized both of these variations by formulating 3,976 rules that—over eight chapters—allow the generation of Sanskrit words and sentences from roots, which are in turn derived from phonemes and morphemes.[6] In addition to these rules, he provides a list of all Sanskrit phonemes, along with a meta-

linguistic scheme that allows him to refer to entire classes of phonological segments with just one syllable; a classified lexicon of about two thousand Sanskrit verbal roots along with markers that encode the properties of these roots; and another classified list of lexical items that are idiosyncratically acted upon by certain rules.

The rules are of four types: (1) rules that function as definitions; (2) metarules—that is, rules that apply to other rules; (3) headings—rules that form the bases for other rules; and (4) operational rules. Some rules are universal while others are context sensitive; the sequence of rule application is clearly defined. Some rules can override others. Rules can call other rules, recursively. The application of one rule to a linguistic form can cause the application of other rules, which may in turn trigger other rules, until no more rules are applicable. The operational rules "carry out four basic types of operations on strings: replacement, affixation, augmentation, and compounding."[7]

In addition to ordered rules, Panini also pioneered the use of linguistic "zero elements" for constituents posited in analysis but omitted in usage, as in the sentence "Women adore him," in which the determiner "the" is assumed to precede "women."[8] He also created a metalanguage comprising special technical terms and markers which enabled him to speak precisely and unambiguously about the language he was analyzing.[9]

In Sanskrit, word order is not important other than for stylistic purposes; the verb can be placed anywhere in a sentence. So the *Ashtadhyayi* concerns itself mainly with word formation. When it does concern itself with sentence formation

> Panini accounts for sentence structure by a set of grammatical categories which allow syntactic relationship to be represented as identity at the appropriate level of abstraction. The pivotal syntactico-semantic categories which do this are roles assigned to

nominal expressions in relation to a verbal root, called *karakas*. A sentence is seen as a little drama played out by an Agent and a set of other actors, which may include Goal, Recipient, Instrument, Location, and Source.[10]

The rules of the *Ashtadhyayi* are extremely concise; here are numbers 58 through 77 of the fifth chapter:[11]

५८ संख्यायाश्च गुणान्तायाः ५९ समयाच्च यापनायाम्
६० सप्रत्त्रनिष्पत्त्रादति०यथने ६१ निष्कुलान्निष्कोषणे
६२ सुखप्रियादानुलोम्ये ६३ दुःखात्प्रातिलोम्ये ६४
शूलात्पाके ६५ सत्यादशपथे ६६ मद्रात्परिवापणे
६७ समासान्ताः ६८ न पूजनात् ६९ किमः क्षेपे
७० नञस्तत्पुरुषात् ७२ पथो विभाषा ७२ बहुव्रीहौ
संख्येये डजबहुगणात् ७३ ऋक्पूर०ध्वःपथामानक्षे ७४
ऋचत्यन्वचपूर्वात्सामलोम्नः ७५ ऋक्षोऽदर्शनात् ७६
ऋचतुरविचतुरसुचतुरस्त्रीपुंसधेन्वनडुहर्क्सामवाङ्नसा–
क्षिभ्रुवदारगवोर्वष्ठीवपदष्ठीवनक्तंदिवरात्रिंदिवाहर्दिव—
सरजसनिश्श्रेयसपुरुषायुषद्व्यायुषत्र्यायुषर्ग्यजुषजातोक्ष–
महोक्षवृद्धोक्षोपशुनगोष्ठश्वाः ७७ ब्रह्महस्तिभ्यां वर्चसः

Figure 5.1: Rules from the *Ashtadhyayi* (Vedic Literature Collection, Maharishi University of Management)

Only a few rules are more than two or three words long, so the entire rule set comprises only 32,000 syllables and fits into about forty pages of printed text.[12] The economy of Panini's prose is such that a recent translation into English ran to over 1,300 pages. Panini somehow caught, the saying goes, an ocean in a cow's hoof print. With this very finite analysis, Panini not only comprehensively described the functioning of his language, he also opened it up to infinity. S. D. Joshi points out:

> The *Astadhyayi* is not a grammar in [the] general Western sense of the word. It is a device, a derivational word-generating device . . . It derives an infinite number of correct Sanskrit words, even though we lack the means to check whether the words derived form part of actual usage. As later grammarians put it, we are *lakṣaṇaikacakṣuṣka*, solely guided by rules. Correctness is guaranteed by the correct application of rules.[13]

The systematic, deterministic workings of these rules may remind you of the orderly on-and-off workings of logic gates. The *Ashtadhyayi* is, of course, an algorithm, a machine that consumes phonemes and morphemes and produces words and sentences. Panini's machine—which is sometimes compared to the Turing machine—is also the first known instance of the application of algorithmic thinking to a domain outside of logic and mathematics. The influence of the *Ashtadhyayi* was and remains immense. In the Sanskrit ecumene, later grammarians suggested some additions and modifications, and other grammars were written before and after Panini's intervention, but all have been overshadowed by this one "tersest and yet most complete grammar of any language."[14]

The West discovered the *Ashtadhyayi* during the great flowering of Orientalist research and translation in the eighteenth and nineteenth centuries. Ferdinand de Saussure, "the father of structural linguistics," was a professor of Sanskrit and influenced by Panini and his successor, Bhartrihari; Saussure's notion of the linguistic "sign" is heavily reminiscent of Bhartrihari's theory of *sphota* (explosion, bursting), which tries to account for the production of meaning from linguistic units.[15] Leonard Bloomfield—the renowned scholar of structural linguistics whose work determined the direction linguistic science would take through the twentieth century, particularly in America—studied Sanskrit as a graduate student at

the University of Wisconsin and later in Germany. As an assistant professor at the University of Illinois, he taught elementary Sanskrit even as he began his own research, "using Paninian methods . . . and studying Panini."[16] In his own writing, Bloomfield was unstinting in his praise of Panini's grammar: it was "a linguistic achievement beyond any it [i.e., European scholarship] had known"; it was "one of the greatest monuments of human intelligence" and "an indispensable model for the description of language."[17] He summarized the impact of Panini's work on modern linguistics as follows:

> Around the beginning of the nineteenth century the Sanskrit grammar of the ancient Hindus became known to European scholars. Hindu grammar described the Sanskrit language completely and in scientific terms, without prepossessions or philosophical intrusions. It was from this model that Western scholars learned, in the course of a few decades, to describe a language in terms of its own structure.[18]

Paul Kiparsky tells us:

> Western grammatical theory has been influenced by [Panini's work] at every stage of its development for the last two centuries. The early nineteenth-century comparativists learned from it the principles of morphological analysis. Bloomfield modelled both his classic Algonquian grammars and the logical-positivist axiomatization of his *Postulates* on it.[19]

Further:

> Theoretical linguists of all persuasions are . . . impressed by its remarkable conciseness, and by the rigorous consistency with which it deploys its semi-formalized metalanguage, a grammatically and lexically regimented form of Sanskrit . . . Generative linguists for their part have marveled especially at its ingenious technical devices, and at intricate system of conventions governing rule application and rule interaction that it presupposes, which seem to uncannily anticipate ideas of modern linguistic theory (if only because many of them were originally borrowed from Panini in the first place).[20]

Modern linguistic theory, in its turn, became the seedbed for high-level computer languages. To ease the pain of programming in low-level languages like machine code and assembly, computer scientists were driven to create artificial, formal languages. The efforts of linguists toward understanding language in formal and generative terms led to the work of John Backus, the IBM language designer whose team created FORTRAN, the first widely used high-level programming language. Backus proposed using "metalinguistic formulae" to describe the working of a programming language in 1959. This method was further simplified by Peter Naur, and the resulting "Backus–Naur Form" remains the primary method of describing and generating formal computer languages. Backus apparently came up with his ideas knowing nothing of Panini, at least directly, but, as the Sanskritist Murray Emeneau put it, "Most of the specific features that are taken . . . to distinguish an 'American' school of linguistics from others are Bloomfieldian, and . . . many are Paninean."[21] In 1967 a programmer named Peter Zilahy Ingerman wrote to the *Communications of the ACM* (Association for Computing Machinery) to argue that "since it is traditional in professional circles to give credit where credit is due, and since there is clear evidence that Panini was the earlier independent inventor of the notation, may I suggest the name 'Panini-Backus Form' as being a more desirable one?"[22]

Panini's analysis and innovations may therefore be seen as the foundation of all high-level programming languages. But the

Ashtadhyayi also had an indelible effect on Sanskrit, the language he was describing: it gave this spoken tongue the stability of formal languages—like programming languages—in which a set of rules precisely constrains the symbols, syntax and usages. Natural languages have the tendency to change over time, but Sanskrit has remained astonishingly unchanged in the two and a half millennia since Panini. There have been strong trends toward certain usages, such as the use of compound words, but in general "the stress on refinement and correctness, the overwhelming anxiety to live up to a felt Paninian ideal, kept the language formal for everyone, and channelled creativity towards involution, elaboration, and increasing precision."[23]

So one of the problems of working with Sanskrit texts is that internal linguistic usages give you very little evidence, if any, of provenance and dating. If you had a pandit in contemporary Varanasi write a letter in Sanskrit and time-machined it back 2,000 years, his ancestors would be able to read it with perfect ease. In Sanskrit, therefore, the usual distinction between normal and formal language is collapsed, and the original derivation of the language's name from the root *samskrta*, "constructed, finished, well or completely formed," carries precise denotative value. It is only later that "Sanskrit" comes to suggest refined speech, to refer to the language of the *shishta*, the educated, the superior, the polite.

Then, as now, Indians spoke more than one language in daily use. Sanskrit was the eternal language of the cosmopolis, of the *marga*, the path; the Prakrits were the "natural, normal, ordinary" regional languages, the languages of *desha*, of place. Because Prakrits were subject to change, the stricter grammarians regarded them as *apabhramsa*, "degenerate languages" that had sloughed off from the eternal Sanskrit through careless usage. People spoke both Sanskrit and Prakrits, and they were not—as elsewhere in the world—speaking two registers of the same language. They existed in a condition that

is better described as "hyperglossia" than "diglossia": "What we encounter is not an internal split (di-) in registers and norms, typically between literary and colloquial usage," Sheldon Pollock tells us, "but a relationship of extreme superposition (hyper-) between two languages that local actors knew to be entirely different."[24]

The *Kamasutra*, a Sanskrit text addressed to urban sophisticates, advises that "by having one's conversations in the assemblies neither too much in Sanskrit nor too much in the local language a person should become highly esteemed in the world."[25] Too much eternal language and you revealed yourself as a total *marga* snob; too much Prakrit, on the other hand, marked you as a desi bumpkin. Sanskrit drama reproduced these social dynamics as a convention: the upper-class males—kings, ministers, educated Brahmins—spoke Sanskrit; everyone else spoke Prakrit: merchants and bankers, women (with the exception of courtesans), and of course the lower classes.

Sanskrit—once the language of liturgy—was officially available only to the "twice-born" of the caste system, to its top three tiers of Brahmins, Kshatriyas (warriors), and Vaishyas (traders). Sudras—the manual laborers, the people who provided services—were forbidden to learn or speak Sanskrit, as were those who fell outside the caste system altogether, such as tribal peoples. Thus those who spoke against the Brahminical system—the Buddha, for instance—often used Prakrit languages because Sanskrit was marked as the language of the elite.

Whatever its social value, Sanskrit's stability and emphasis on precision meant that it was regarded as an ideal language for the sciences and philosophy. Since it was believed to be an eternal language, the fifty phonemes of Sanskrit, the *matrka*, were regarded as the root vibrations from which the universe had emerged, and were sometimes worshipped as the "little mothers."[26] Sanskrit phonemes and words therefore had an elemental, essential link to reality that other languages lacked. This view was challenged by

Buddhist thinkers who argued that "the signifier is related to the signified as a matter of pure convention," but the notion that the truth could only be spoken in Sanskrit, and grammatically correct Sanskrit at that, was immensely persuasive.[27] Two monks were said to have argued that the Buddha's words should be translated into Vedic Sanskrit, since people were corrupting them by repeating them in local dialects. The Buddha himself rebuked them, "Deluded men! This will not lead to the conversion of the unconverted," and he commanded all monks, "You are not to put the Buddha's words into [Vedic-Sanskrit] verse. To do this would be to commit an infraction. I authorize you, monks, to learn the Buddha's words each in his own dialect."[28] This injunction was obeyed, and Pali, "a new and parallel sacred language," was created by Buddhists, and yet, by the second century CE, "a vast Buddhist canon in Sanskrit" had been created.[29] The rebels against Vedic authority—the Buddhists, the Jains, the Tantrics—had to speak in Sanskrit after all.

It was perhaps the multitude of viewpoints and ideologies attempting to speak to each other and against each other in Sanskrit that intensified its grammarians' search for even more exactness. Beginning in the fourth century BCE and culminating in the eighteenth century, an effort was made to create a *shastric* or scientific Sanskrit that could "formulate logical relations with scientific precision."[30] In this specialized, condensed Sanskrit, the sentence "Caitra goes to the village" would be rephrased as "There is an activity which leads to a connection-activity which has as Agent no one other than Caitra, specified by singularity, [which] is taking place in the present and which has as Object something not different from 'village,'"

The sentence "Out of friendship, Maitra cooks rice for Devadatta in a pot, over a fire" would be broken down into:

(1) An Agent represented by the person Maitra;
(2) An Object by the "rice"

(3) An Instrument by the "fire"
(4) A Recipient by the person Devadatta
(5) A Point of Departure (which includes the causal relationship) by the "friendship" (which is between Maitra and Devadatta);
(6) The Locality by the "pot"[31]

The *shastric* version of the original sentence would therefore be something like:

> There is an activity conducive to a softening which is a change residing in something not different from rice, and which takes place in the present, and resides in an agent not different from Maitra, who is specified by singularity and has a Recipient not different from Devadatta, an Instrument not different from . . .[32]

and so on.

So the *shastric* thinkers tried to create a low-level version of Sanskrit, a counterpart to assembly code. In fact, Rick Briggs, a NASA specialist in artificial intelligence, points out that this decomposition of natural language is very similar to what computer programmers do when they attempt to represent knowledge in semantic nets, which use "triples" to embody logical relations: "cause, event, friendship; friendship, object1, Devadatta; friendship, object2, Maitra; cause, result, cook; cook, agent, Maitra . . ." and so on. Briggs writes:

> It is interesting to speculate as to why the Indians found it worthwhile to pursue studies into unambiguous coding of natural language into semantic elements. It is tempting to think of them as computer scientists without the hardware, but a possible explanation is that a search for clear, unambiguous understanding is inherent in the human being.[33]

The extraordinarily logical nature of Sanskrit, the fact that "we are *lakṣaṇaikacakṣuṣka*, solely guided by rules," that "correctness is guaranteed by the correct application of rules," that you can generate a grammatically correct word or phrase you need by applying these rules—all this leads to a strong similarity between it and modern programming languages. The *Ashtadhyayi* itself is replete with features that resemble modern programming constructs: recursion; multiple inheritance (a rule based on other rules acquires all the properties of the parent rules); context-sensitive and context-free rules; conflict resolution for rules; string transformations; ordered operations; a metalanguage; and so on.[34] Programmers who know Sanskrit sometimes claim that it would make the perfect programming language, endlessly rigorous and endlessly flexible.[35]

The inheritors of the Paninian tradition were deeply concerned with the relationship between language, meaning, and function: How is meaning transferred? How is it understood? Does language impel action? These questions became particularly urgent when these theorists were confronted by belletrist poetry written in the unchanging formal language of science and scripture. Over the centuries, Sanskrit developed a flourishing culture of *kavya*—poetry—and so the philosophers of language had to engage with beauty. Their investigations took them inescapably toward considerations of aesthetics: How was beauty produced in language? How does beauty affect or influence the reader, the viewer? Like programmers with their discussions of the "eloquence" of code, the classical Indian theorists tried to think about the effects that flowed from formal-language texts and went beyond the purely functional.

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Until about the mid-ninth century CE, the thinkers of the Sanskrit cosmopolis who were interested in the nature and epistemology of literary beauty concerned themselves with the formal qualities of texts; they thought of poetry as language made beautiful through the operations of certain constructions: simile, metaphor, metonymy, double entendre or puns, alliteration, sound, rhythm, and so on. These figures were *alamkaras*, ornaments, which beautified language in much the same way that jewelry embellished a body. Some scholars ascribed a more central role to riti or "style," to *gunas* or "qualities" such as *ojas*, "strength" or "vigor" (achieved, for example, through the use of long compounds in prose); *prasada*, clarity or lucidity; *samata*, the uniformity of diction; *sukumarata*, softness or delicacy; etcetera. These qualities, the adherents of riti argued, produced beauty, which was in turn heightened by figures of speech. Whatever specific emphases the Indian aestheticians may have preferred in their writings on beauty, all of these early scholars were formalists; poetics itself was *alamkara-shastra*, the study of ornamentation. Their critical methods were heavily particularistic, and they therefore produced exhaustive catalogs of *alamkaras* and their effects, of the varieties and subvarieties of linguistic structures used by writers.

The theorist Anandavardhana (820–90 CE) caused an upheaval among these *alamkarikas* with his treatise *Dhvanyaloka* (The light of suggestion). Until Anandavardhana, Indian philosophers of language had accepted two main modes of signification through which language conveyed meaning: *abhidha*, the literal or the denotative, and *lakshana*, the metaphorical and figurative, the connotative. Anandavardhana proposed that poetic language set yet another semantic function into play: suggestion. The stock example used to illustrate the workings of suggestion in mundane language is the simple sentence, "The sun has set." An eleventh-century theorist wrote:

> The denoted meaning of a word is one and the same for all persons bearing it; so that it is fixed and uniform; the denoted or directly *expressed* meaning of the words "the sun has set" never varies (is

fixed), while its *suggested* meaning varies with the variation in such accessory conditions as the context, the character of the speaker, the character of the person spoken to, and so forth. For instance, the words "the sun has set" suggests (1) the idea that "now is the opportunity to attack the enemy" (when they are addressed by the general to the king);—(2) "that you should set forth to meet your lover" (when addressed by the *confidant* to the girl in love)

and so on until "(10)—'my love has not come even today' (when spoken by an impatient girl waiting for her beloved's return from a journey); thus, in fact, there is no end to the number of suggested meanings."[36]

Anandavardhana's assertion was that in literature, suggestion or *vyanjana* added layers of meaning to the text that were not apparent in the denotative or figurative content of the language; *vyanjana* is derived from the root *vi* plus *anj*, "to reveal, manifest"—*vyanjana* therefore manifests a multitude of meanings within the reader. And, Anandavardhana argued, when "sense or word, subordinating their own meaning, suggest that [suggested] meaning"—that is, when the denoted and figured meaning becomes less important than the manifested, unspoken meaning—that poetry becomes "the type of poetry which the wise call *dhvani*."[37] *Dhvani* derives from *dhvan*, "to reverberate"; *dhvani* poetry therefore causes an endless resonance within the reader—"the suggested sense [flashes] forth in an instant in the minds of intelligent auditors who are averse to the literal sense and in quest of the real meaning."[38] So the echoes of *dhvani* are available only to those who are capable, who are alert to the possibilities of poetry. *Dhvani* is "not understood by the mere knowledge of grammar and dictionaries. It is understood only by those who know the true nature of poetic meaning."[39] *Dhvani* is "the soul of poetry."[40]

Anandavardhana does not claim that he is inventing anything

new when he speaks of *dhvani*: it is "found in the works of great poets. It is that which appears as [something] separate from the well-known elements [of poetry]." The reason we call some poets "great" is because their work is resonant with *dhvani*, which is something that cannot be described or analyzed by listing their beautiful figures of speech or pointing at their style; *dhvani* is not accounted for by the then-current theories of *alamkara-shastra*. And yet, *dhvani* is what makes poetry beautiful. So Anandavardhana insists that he is just naming something that already exists, and showing us how to think about it. He shows us different kinds of *dhvani* in verses taken from the epics, from the renowned poets of his era, from famous poems in Sanskrit and Prakrit. For instance:

O holy monk, wander without fear.
That little dog was killed today by him—
that violent lion living in the thickets
on the banks of the Godāvarī River.[41]

Here the speaker is a woman, and what is being suggested is a *vastu*, a narrative element: the woman wants to keep the wandering monk away from a trysting place where she meets with her lover. So what we have here is *vastu-dhvani*, through which the poet can suggest things, facts, situations, prohibitions, injunctions. In this poem, the denotative meaning is exactly the opposite of what she really wants, what she is really doing; what the reader grasps is beyond *abhidha* and *lakshana*. Here is another famous example of *vastu-dhvani*:

Mother-in-law sleeps down there, and I here.
Look while day remains, O traveler.
Do not, blind in the night,
lie down in my bed.[42]

The presumed speaker is a lovelorn woman, a familiar type within the conventions; this married woman is extending—or suggesting—an invitation.

Dhvani can also suggest a figure of speech, an *alamkara*. So:

> O lady with tremulous long eyes,
> as your face
> completely fills the directions
> with the radiance of its beauty,
> the ocean now remains calm,
> absolutely still.
> And so I know it is nothing
> but an insentient mass of water.[43]

The ocean is not stirred *now*—as it was a moment ago, when the moon rose—therefore it must be truly insentient. The eyes are tremulous—perhaps from momentary jealousy?—but now the smiling face "fills the directions." What is being suggested here is a metaphor, the beautiful face as the moon. This is the second variety of suggestion, *alamkara-dhvani*.

But the most powerful *dhvani* in poetry, the poet's most desired effect, is the suggestion of *rasa*. *Rasa* is a term which, until Anandavardhana, had mostly been used in dramaturgical texts. At some time between 200 BCE and 200 CE, a perhaps-apocryphal sage named Bharata is said to have written the *Natyashastra* (Treatise on the drama). The *Natyashastra* is a theater professional's handbook: it includes chapters on what a playhouse should look like; on different gaits; the use of local dialects; costumes and makeup; on the factors that lead to the success of a dramatic performance. The sixth and seventh chapters famously analyze the nature of aesthetic pleasure, *rasa*. According to Bharata:

> People who eat prepared food mixed with different condiments and sauces, etc., if they are sensitive, enjoy the different tastes and then feel pleasure (or satisfaction); likewise, sensitive spectators, after enjoying the various emotions expressed by the actors through words, gestures and feelings feel pleasure, etc. This (final) feeling by the spectators is here explained as (various) *rasa*-s of *natya* [drama].[44]

So *rasa*—the word literally means "taste" or "juice"—is not emotion (*bhava*); it is the aestheticized satisfaction or "sentiment" of tasting artificially induced emotions. Generations of thinkers developed the notion of *rasa* along with a notion of the ideal viewer; the locus of *rasa* was this viewer, not the actors or the stage. *Rasa* is what the drama produces in the *sahrdaya*, the sophisticated "same-hearted" connoisseur who is the playwright's necessary counterpart. The *sahrdaya*—because of education, experience, and temperament—is able to experience *rasa* precisely because he or she does not identify in a personal, egoistic way with the tragedy on the stage. The naive spectator who ascribes some sort of reality to what is happening on the stage and identifies personally with the emotions of the characters is incapable of *rasa*, which is an impersonal, disinterested pleasure. One might say that a certain psychical distance is necessary for *rasa* to be experienced. *Rasa* is sublime.

On stage, the characters and situation and the patterning of events make up the determinants or catalysts, the *vibhavas*; the actors portray the consequent outward manifestations (*anubhavas*) such as speech, bodily posture, and involuntary reactions (such as trembling). In response to the actors' depictions of momentary situations like a waiting lover's anticipation or doubt, the spectator experiences fleeting emotional states (*vyabhicaribhavas*); and all of these various feelings come together—like condiments and sauces—to

allow the viewer access to a stable emotion, a dominant mood, a *sthayibhava*, such as grief. Note that this stable emotion is *in the viewer*; it is a "permanent emotional state" that is ever present in all human beings as a potential, a latent trace. The actors cannot act out a *sthayibhava*—it really doesn't matter what the actors feel or don't feel; the purpose of their craft is to allow the *sahrdaya* access to his or her own stable emotions.

And, very importantly, the stable emotion is *not* the *rasa*. If the actors portray a scene that allows access to the stable emotion of grief, *shoka*, what the viewer relishes is the *rasa* of *karuna*, pathos. The *rasa* is in the tasting of grief, in the relishing of grief, in the reflective cognizing of grief. If the actors portray desire, *rati*, the viewer relishes *sringara*, the *rasa* of the erotic. The pleasure of *rasa* comes from the meta-experience of experiencing oneself experience the stable emotions.

Bharata names eight *rasas* in all; so, in addition to *karuna* and *sringara*, the viewer enjoys *hasya*, the comic; *raudra*, the wrathful; *vira*, the heroic; *bhayanaka*, the terrible; *bibhatsa*, the disgusting; and *adhbuta*, the wonderful. A ninth *rasa* was added by later theoreticians: *shanta*, the peaceful, which arises from the stable emotion of *vairagya*, detachment, dispassion, and which is manifested especially by epics like the *Mahabharata*, which place the specificity of human striving and passion against the vastness of time.

According to Anandavardhana, poetic language can manifest *dhvani* through the operation of *vyanjana*, suggestion, and so offer the reader an opportunity to taste *rasa*. For instance:

> While the divine sage was speaking
> to Pārvatī's father,
> she, eyes downcast,
> counted the petals
> of her toy lotus.[45]

The "divine sage" has come to propose to Himavata, the king of the Himalayas, that he marry his young daughter Parvati to the god Shiva. Parvati is in love with Shiva, and has performed great austerities to win him, but in this moment, Anandavardhana says, "the counting of the petals of the lotus subordinates itself and without the help of any verbal operation reveals another matter in the form of a transient state of mind (*vyabhicāribhāva*) [of the emotion love, namely shyness]."[46] In the perception of the reader, the shyness of Parvati suggests desire, love. The reader therefore relishes the *rasa* of the erotic, *sringara*, evoked through *dhvani*.

We can see that the operations of suggestion are heavily dependent on context (as in "The sun has set"). Whereas the denotative and connotative meanings of a phrase or a text are limited, *vyanjana* is infinite and can never be exhausted. Consider the following verse, in which the speaker is Rama, the hero of the *Ramayana*; the season is the monsoon, when lovers come together. Rama has lost his kingdom through court intrigue, has been banished to the wilderness, has faced many dangers, and his beloved wife has been kidnapped by the evil Ravana.

> Clouds smear the sky,
> flocks of cranes tremble
> across their viscous blue-black beauty.
> The winds sprinkle rain, the peacocks call
> their soft cries of joy.
> Let all this be, as it likes. I am Rāma.
> I am hard-hearted, I can endure all.
> But Vaidehī? How will she survive?
> Ah alas, my goddess, be strong![47]

Anandavardhana writes, "In this verse, the [suggestive] word is 'Rama.' By this word we understand Rama as developed into

various suggested qualities, not simply as the possessor of the name."[48] That is, the reader already knows that the speaker is Rama; no information is added here by the use of the name. But the name evokes, for the reader, all the tragedy and suffering that this man has already experienced and will experience in the future. In a flash, this sudden explosion of light illuminates the past and the future.

A century later, the greatest exponent of *rasa-dhvani* theory, Abhinavagupta, wrote about this verse:

> The suggestions of other properties . . . are endless; for example, his banishment from the kingdom, etc. And since these suggestions are countless, they cannot be conveyed [simultaneously] by means of the denotative functions of words. Even if these innumerable suggested properties were to be conveyed [by denotation] one by one, since they will not be had in one single act of cognition, they will not be the source of a wondrous aesthetic experience and hence they will not give rise to a great beauty. But if these properties are suggested, they will assume countless forms (*kiṃkiṃ rūpaṃ na sahate*) because in the suggestion their separateness will not be clearly perceived. In this way they will become the source of a strikingly beautiful aesthetic pleasure that is analogous to the flavor of a wonderful drink, or cake, or sweet confection [where the individual ingredients cannot be separately tasted but yet add to the flavor of the final product]. For it has been said already [by Anandavardhana] that a word which is suggestive reveals a beauty "which cannot be conveyed by another form of expression."[49]

~

Rasa-dhvani can operate at the level of a word, a sentence, or an entire work. According to Anandavardhana, *rasa* is "an object on which no words can operate directly," and therefore *dhvani* is the only way

to manifest *rasa*.[50] So Anandavardhana might have said to an aspiring writer: suggest, don't tell. *Dhvani* is literally "reverberation," and is often compared to the "sounding of a bell" or "a needle falling through a pile of lotus leaves." If we hear the phrase, "A village on the Ganga" (in Sanskrit, *gangayam ghoshah*, literally "a village in the Ganga") we understand that the village cannot literally rest on the water, and that we are talking about a village located on the banks of the Ganga. This would be an example of figurative speech. But Anandavardhana would argue that this phrase about the holy river also carries a suggestion—or causes in the listener the manifestation—of coolness, sanctity. This underlying, affective meaning does not emerge from the denotative or figurative aspects of the phrase. This kind of suggestion functions in all speech, is present even in mundane language, but poets knowingly and intentionally concentrate *vyanjana* to construct a coherent, sustained engagement within the reader, and thus to manifest *dhvani*, and hence *rasa*. Patrick Colm Hogan writes:

> *Rasadhvani*, the "truest" form of *dhvani*, it is an experience—along the lines of what we would call "a moment of tenderness" or "a pang of sadness." It is, in short, an experience of *rasa* . . . [These *rasas*] are evoked through the clouds of non-denumerable, non-substitutable, non-propositional suggestions which surround these texts.[51]

The very sounds and rhythms of language—which preexist meaning—contribute to our experience of *rasa*. Abhinavagupta says that when we hear poetic language

> without waiting for our understanding of the expressed meaning, [the stylistic qualities] set about building up the *rasas*, giving us a foretaste (*āsvāda*) of them. This is as much to say that as the *rasas* are suggested by style (*saṅghaṭanā*), the ground is laid for the relishing of a *rasa* at the very beginning of the appropriate style before

> our understanding of the meaning has come into play; and that it is on this account that the *rasa*, even at the later moment, after we have understood the expressed meaning and when the *rasa* has assumed its full flavour, does not appear to have arisen later [than our understanding].[52]

~

Anandavardhana observes, "When ornamented by even one from among the varieties of *dhvani*, speech acquires a fresh colour, even though it follows a subject matter that has been treated by poets of the past."[53] Since the properties manifested by *dhvani* are countless, "poetical material . . . finds no limit . . ."

> Not even Vacaspati [the god of speech] in a thousand efforts could exhaust it, any more than he could exhaust the nature of the universe.
>
> For just as the nature of the universe, although it has manifested this marvellous proliferation of matter through the succession of past ages, cannot be said now to be worn out and unable to create anything new, just so is the situation in poetry, which, although it has been worked over by the minds of countless poets, is not thereby weakened, but increases with ever new artistic abilities.[54]

Anandavardhana accepted that there may be poetic texts in which the suggested meaning isn't the dominant pleasure, or even present at all; he rather disdainfully refers to the latter as *chitra kavya*, picture poetry, flashy poetry: "Poetry which lacks *rasa* or an emotion (*bhāva*) as its final meaning, which is composed only by relying on novelties of literal sense and expression, and which gives the appearance of a picture, is *citra* . . ." Poetry that "gives the appearance of a picture" refers to very difficult pictorial arrangements in verse, similar to visual pattern poetry and topiary verses in the West—

Sanskrit writers wrote stanzas in which interlocking syllables, if connected by drawn lines, revealed the shapes of drums, swords, wheels, and so on.[55] This *chitrabandha* is probably where the more general term *chitra kavya* originates. Anandavardhana continues, "[This poetry also includes] verbal *citra*, such as difficult arrangements, *yamakas* (echo alliterations), and the like. Semantic *citra* . . . may be exemplified by poetic fancy (*utprekṣā*) and such figures . . . It is not real poetry, for it is an imitation of poetry."[56]

Now that Anandavardhana has shown us how *vyanjana* works in poetry to produce *dhvani* and *rasa*, he tells us, "Now that instruction is being offered to modern poets in the true principles of poetry, while *citra* may be much used in the efforts of beginners who are seeking practise, it is established for mature poets that *dhvani* alone is poetry."[57]

~

So *rasa* is what I felt that afternoon I discovered Hemingway at our kitchen table in Bombay, when the bleak undertow of his stories, roiling with unspoken emotion, flung me into an exaltation, a state of delight. Hemingway's famous taut rhythms, the stripped simplicity of his diction, those repetitions of sound that he meticulously builds into his prose, all these enhance the iceberg-sized *dhvani* of what he leaves unsaid. Every word, every pause, every hesitation makes the *dhvani* of a story.

Flannery O'Connor writes:

> The meaning of a story has to be embodied in it, has to be made concrete in it. A story is a way to say something that can't be said any other way, and it takes every word in the story to say what the meaning is. You tell a story because a statement would be inadequate. When anybody asks what a story is about, the only proper thing is

to tell him to read the story. The meaning of fiction is not abstract meaning but experienced meaning.[58]

The only way to explain to you what I experienced when I first read Hemingway is to tell you to read those stories. And even then, you will read different stories. We may read the same texts, but the *dhvani* that manifests within you will be unique. Your beauty will be your own. If you reread a story that you read ten years ago, its *dhvani* within you will be new. Poetry's beauty is infinite.

6 THE BEAUTY OF CODE

This is what ugly code looks like:

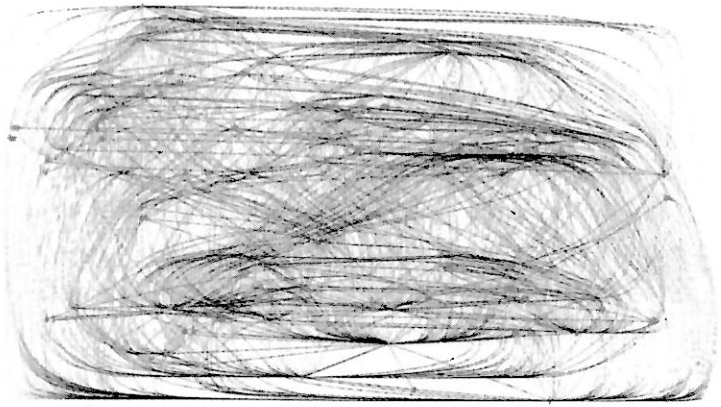

Figure 6.1: Dependency diagram (TheDailyWTF, www.thedailywtf.com)

This is a dependency diagram—a graphic representation of interdependence or coupling (the black lines) between software components (the gray dots) within a program. A high degree of interdependence means that changing one component inside the program could lead to cascading changes in all the other connected components, and in turn to changes in their dependencies, and so on. Programs with this kind of structure are brittle, and hard to understand and fix. This dependency program was submitted anonymously to TheDailyWTF.com, where working programmers share "Curious Perversions in Information Technology" they find as they work. The exhibits at TheDailyWTF are often embodiments of stupidity, of miasmic dumbness perpetrated by the squadrons