

Applied Synesthesia: A Technique for Learning Languages

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Introduction

It is odd that language instruction rarely begins with a review of mnemonic techniques. This despite the fact that ability to memorize is probably the most critical determinant of success for a new language student.¹

Standard and simple mnemonic techniques directly applicable to language learning include *connecting paths* and *salient images*. A connecting path takes a word in one language and brings it by stages to the corresponding word in another language. Each step in the path is relatively easy to remember, and by following the steps the student arrives at the corresponding word. For instance, a connecting path from the English “house” to the French “maison” might be “house”, “mouse”, “mice”, “mace”, “mace on”, “maison”.

A salient image creates an image (or story) which contains the desired link between the words in the two languages. To the extent that the image is unforgettable, the link will be remembered. For instance, a salient image connecting the English “kick” to the Spanish “patear” might (for a native English speaker) be a football player patting his ear after having been kicked by another player.

Connecting paths and salient images are powerful mnemonic techniques which can and should be taught in any introductory language class. They are simple to explain, improve retention, and add a pleasant, game-like aspect to memorization.

However, while these and similar techniques are definitely an improvement over leaving students to memorize through rote repetition, these techniques tend to collapse under the weight of rapidly learning the full vocabulary of a new language. Paths or images are forgotten in part or in whole, and there are confusions between words.

It is a thesis of this essay that the failure in bulk of connecting paths and salient images is due to the fact that these techniques are insufficiently grounded in the natural operations of human long-term memory. Mnemonics made in these ways are forgotten because our brains were not designed to remember them.

It is suggested that the key failings of existing techniques can be removed by basing a mnemonic strategy around the theory that human long-term memory is organized in terms of emotionally-compelling fables. A specific mnemonic technique based upon this theory is introduced, using applied synesthesia.

¹ It is sometimes suggested that level of interest is the most important determinant of success. Technique matters more. If one has to bet on a footrace, pick a bored athlete over an enthusiastic fat kid.

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Emotionally-Compelling Fables

It is a striking fact that certain things, such as key events in childhood and the plots of particular stories or movies, are remembered effortlessly for our entire lives. Other things, such as shopping lists, are hard to remember even briefly. A consideration of what we remember and what we do not, and of what evolutionary role memory plays in aiding our survival, leads to the theory that human long-term memory is engineered to support *emotionally-compelling fables*.

An emotionally-compelling fable (ECF) is the account of a series of events which, for a particular listener (or reader), has the following attributes

1. *Situation*. Is based upon a problem, question or situation which is significant in the life of the listener.
2. *Exploration*. Explores the problem, question or situation through a series of internally-consistent actions.
3. *Moral*. Suggests a resolution or deeper understanding of the problem, question or situation.
4. *Emotional response*. Produces an emotional response in the listener.

Aesop's fables are good examples of ECF's. Consider, for instance, the fable of the grasshopper and the ant. Briefly summarized, the grasshopper plays during the summer while the ant prepares for the winter. When winter comes, the ant survives and the grasshopper does not.

The grasshopper/ant fable fits the characteristics of an ECF: 1. it deals with the question of why we need to work; 2. it explores this question by comparing someone who works with someone who does not; 3. it points out that if you do not work, you are likely to die; 4. it tends to produce an emotional reaction, perhaps a combination of pity and horror.

Aesop's fables are of course very memorable. More generally, literature tends to be memorable to the extent that it tells a story about the consequences of decisions, essentially in the form of an ECF.

It is also of interest that while most activities in our own lives are forgotten, the few that are remembered tend to be those that have a lesson to teach us, again in the form of an ECF. Examples might include learning about the importance of not climbing out on the ends of tree branches, when honesty is or is not the best policy, etc.

Memory is a product of evolution. It can exist only to the extent that it helps us to survive. The primary survival value that memory can provide is to inform us (by analogy) of how a situation is likely to play out before we have to risk life and limb. Consequently, human memory is not a copying machine, it is a comprehending machine.

If we consider that a situation we find ourselves in can be thought of as the "starting point" of an ECF, then we are led to the following thesis:

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Human long-term memory is engineered to identify, record, and selectively retrieve emotionally-compelling fables.²

The necessity for a fable to produce an emotional response in order to be remembered appears to reflect two considerations. The first is a sort of quality check: if a fable does not produce an emotional response then it is probably not important enough to be worth cataloging in long-term memory.

The second consideration, more operational, is that emotion appears to serve as the index for long-term memory. A particular situation that we are placed in induces an emotional response. Our long-term memory then retrieves ECF's that produced the same or similar emotional response; on the grounds that they are the ECF's most likely to be relevant.

If long-term memory is based upon ECF's, then rapidly and permanently learning vocabulary lists depends upon efficiently representing the link between words in two languages as ECF's.

The technique of salient images, described in the Introduction, touches on some parts of ECF's. However, the importance of producing an emotional response (as opposed focusing on creating a humorous or striking image, or visual detail or intensity) is rarely emphasized. Also, the necessity of including a moral is not widely taught.

For instance, the salient image given in the introduction, linking “kick” to “patear”, could be quickly extended to an ECF by imagining the following

1. *Situation.* That the player patting his ear had been attempting to make a great play.
2. *Exploration.* That in the process of making the play, he made a risky move that resulted in him getting kicked in the ear.
3. *Moral.* A number are possible, such as: greatness requires sacrifice; sports are dangerous; etc. The person needing to remember the link between “kick” and “patear” should pick the moral that resonates most quickly and deeply with them.
4. *Emotional response.* Many are possible, such as anger, bitterness, determination, etc. The key point is that one must be sufficiently engaged in the ECF to feel an emotional response or the ECF is likely to be forgotten.

In terms of representing the relationship between “kick” and “patear”, the above four considerations add nothing to the simple salient image provided in the Introduction. However, in terms of representing the link in the way human memory is designed to

² The major exception to this thesis is that certain things have to be remembered not because they tell us about situations in general, but simply because they occur frequently in practice. For instance, one needs to remember the way home, and the names of one's family members. Here, one would expect that human memory would be engineered to recall an item to the extent that it occurs frequently. This is the basis of the “rote memorization” so unfortunately prevalent in modern language instruction.

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work, and therefore improving retention, the difference is profound. Someone who is able to build an ECF as above is more likely to remember the link between the two words indefinitely, without repetition.

However, there are two difficulties with the ECF methodology as presented above. The first is that it is initially time-consuming. It takes time and effort to build an ECF for every pair of words to be learned. This difficulty resolves itself with practice, to the point that an ECF forms almost subconsciously as the word and its definition are read. Amortized over the time needed to learn ten thousand words or so in a new language, the ECF methodology pays for itself fairly quickly.

A more fundamental problem is that most words are not as convenient as “patear” (for an English speaker), in terms of breaking down easily into components that can be used to build an ECF. While strained decompositions can be used, the following section presents a deeper solution: a means to systematically decompose any word into units suitable for rapidly constructing ECF’s. This solution makes use of synesthesia.

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Applied Synesthesia

Synesthesia, from the Greek for “joined perception”, has been described as the “involuntary physical experience of a cross-modal perception.”³ Common examples include perceiving colors associated with letters or shapes associated with music. Synesthesia is generally viewed as an innate (and presumably unlearnable) characteristic of a very small percentage of the population.

It is suggested here that synesthesia is present to some degree in everyone, and that it is a learnable skill.⁴ Anyone who has felt inclined to dance to music, or felt that a particular dance was “right” for a particular piece of music, has experienced a form of synesthesia.⁵

In my own case, I have always seen colors weakly associated with letters (and shapes, textures and colors with music, etc.), but never paid much attention to the phenomenon until realizing that it could be useful for supporting ECF’s.

The crucial advantage of synesthesia, for the purpose of supporting ECF’s, is that it greatly increases the amount of usable information associated with a word. By adding sensory characteristics associated with each letter, as well as emotional overtones, each letter becomes an actor that can be used to build up a fable.

Different people have quite different synesthetic perceptions of the alphabet (my own is described in Appendix A). Once developed, they are quite stable: it is difficult to even imagine a different association of color, texture, etc. being wedded to a particular letter.

In uncovering my own synesthetic alphabet, the technique I used was simply to “be quiet” and “listen” to the letters as I was reading. Over time, each letter developed increasingly strong sensory perceptions. There was an “Alice in Wonderland” period, in which the perceptions varied disconcertingly around a certain base, but over time they settled down.⁶ The approach to developing a synesthetic alphabet is deeply similar to learning a new style of dance. There is an initial period of frustration, perhaps even hopelessness. Ultimately, success depends upon perseverance and upon a willingness to

³ RE Cytowic (1995). *Synesthesia: Phenomenology and Neuropsychology*.

<http://psyche.csse.monash.edu.au/v2/psyche-2-10-cytowic.html>

⁴ This hypothesis has the useful characteristic that it encourages a specific research activity, namely training for synesthesia. It lends itself to interesting new psychology if the hypothesis is correct, and experimental falsification if not. The converse hypothesis, that synesthesia is an innate and untrainable oddity, lends itself to little more than the psychological equivalent of butterfly collecting. More generally, it is unfortunate that psychologists tend to view their discipline as primarily descriptive, recording the characteristics of the mind, rather than prescriptive, identifying cognitive best practice and codifying for general guidance the means for achieving it.

⁵ One might call this “audio-kinesthetic synesthesia” (AKS). Why is AKS almost universal, while other forms of synesthesia are rare to the point of non-existence? Perhaps because AKS is a shared, social phenomenon that is reinforced, whereas other forms of synesthesia are strictly within the individual and not reinforced. This is consistent with the hypothesis that synesthesia is learnable.

⁶ While the act of attention can help to develop or strengthen a synesthetic alphabet, there appears to be little ability to consciously control its form. The subjective impression is that the letters “define themselves”. Obviously, I could in principle imagine that the letter “a” was red, but it would be something that I had to remember, not something that I felt, and therefore less effective for ECF’s.

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surrender oneself to a feeling: in the case of dance, a feeling of the flow of the music and motion; in the case of a synesthetic alphabet, the feeling of a particular form of communication.⁷

An alternate approach, which I do not recommend, is simply to memorize and use the synesthetic alphabet provided in Appendix A. I do not recommend this for two reasons.

1. To the extent that one already have a sense of what a particular letter “should” be, one will get into nothing but trouble if one tries to overwhelm this by memorizing Appendix A or anyone else’s synesthetic alphabet.⁸ It will never feel right, and will be awkward and unnatural to use for ECF’s. A letter has a mind of its own.
2. Appendix A provides the synesthetic alphabet that grew organically and without planning in my own mind. It was not engineered, and is not optimal in terms of supporting information encoding.

However a synesthetic alphabet is arrived at, it is very useful to develop not simply visual associations for a given letter, but emotional ones as well. The importance of eliciting an emotional response to an ECF, in order to encourage recall, can not be overstated. Having emotional characteristics built into the alphabet simplifies the process of quickly creating effective ECF’s.

The following four examples of ECF/applied synesthesia mnemonics for German words are based upon the synesthetic alphabet described in Appendix A.

ECF’s need not qualify as literature. Making the effort to produce higher-quality ECF’s increases the ease and probability of recall. However, doing so also takes longer, and faced with the prospect of generating ECF’s by the thousands, there is a tendency to move quickly and repair as needed. If, checking later, a word definition is recalled then the ECF was “good enough”. If not, the ECF can be strengthened until the definition is recalled.

It is worth noting that the definition of each word occurs almost in passing in the below ECF’s. The definition is never the focus. The key is to build an effective ECF. If this is

⁷ Initially, reading synesthetically is much slower than reading “normally”. One has to pay attention to each letter. Consequently, one should read “normally” for routine tasks, and reserve separate time for reading synesthetically. This is somewhat similar to the fact that dance students do not forget how to walk.

⁸ In addition to synesthetic alphabets, a brief mention is due to alphabetic peg systems, in which each letter is associated with a noun (e.g., “a” with “ape”, “b” with “bean”, etc.). Peg systems are useful for memorizing a set of items, such as a shopping list, by associating each element of the set with a letter. Pegs can also be used to memorize a small number of random alphabetic passwords. However, an alphabetic peg system is completely unsuitable for bulk memorization of bilingual dictionary definitions, on account of its rigidity and fixed resolution. By the time one has made one’s fiftieth mnemonic involving an ape, the process becomes very tedious; also, confusions occur between different mnemonics sharing some of the same letters. Using a synesthetic alphabet of the kind described in Appendix A, by contrast, each letter has a much wider variability around a core appearance and emotional feel. An “a” can play a minor role in an ECF, appearing only for instance as brown paint or a clod of dirt, or if need be for a particular ECF “a” can take on an expanded representation involving essentially anything related to agriculture. The result is a much more efficient and dynamic system than is possible with pegs.

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accomplished, the definition will be remembered however tangentially it may be embedded in the ECF. If an effective ECF is not created, nothing will be remembered.

It may seem that these ECF's are very complicated simply to remember a word definition. They seem complicated when written down, but with practice usually form almost instantly in one's mind. The time to become sufficiently involved with the ECF to feel an emotional response to it is slightly longer. Writing down these ECF's took much longer than forming them: and even so, the text descriptions are incomplete both in detail and emotional overtones. An analogy is that one can see a vista instantly, but would have to spend a long time putting it into words to describe it to others.

Reference to Appendix A is necessary in order to understand the imagery of the letters as used in the below examples.

German Word	Translation	ECF
Gelegenheit	Opportunity	<p>The two "g"s form the gray, stone walls of a street in the old part of a town. The "l" is a sudden ray of bright sunlight cutting through the clouds and falling on the walls of the street. The first three "e"s blend into the background, becoming part of the lines between the stones. The "h" becomes a raised, wooden platform in a square at the end of the street. The "n" becomes a man standing on the platform, addressing a gathered crowd. The fourth "e" becomes the gaze of the man, staring at papers giving the text ("t") of a speech. His walking stick ("i") is leaning against the podium.</p> <p>The man is very nervous, this being the first speech of his first political campaign. He has started the speech poorly. Then he sees the ray of sunlight on the gray wall, and it lifts his spirits. He thinks that he has to make the best of the opportunity.</p>
Reise	Trip	A nobleman ("r") is looking ("e") through a telescope ("i") at a river ("s"). The final "e" is a rope holding a boat to a dock on the river. The man will soon be taking a trip on the boat. He thinks that the trip will be difficult, but exciting and enjoyable. Nothing ventured, nothing gained.
Wo	Where	The "o" becomes a circle of searchers, gathered on the top of a wooded hill on a dark, cold, rainy night. The "w" indicates their outward motion, looking for a boy who wandered away from a camp. Elsewhere, the boy, who has broken his leg, is wondering whether he will be found where he is. He thinks that he should not have left the camp, particularly on a night like this.
Zeit	Time	The "z" and the "e" jointly become the rapid flow of

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		historical events, viewed as somewhat shadowy and general people, places and things. The “i” is the pen of a scholar, desperately trying to write these events down (“t”), but thinking that he will never have enough time to keep up. Nonetheless, even an incomplete effort is better than nothing.
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There are many different ECF’s that could be formed from the letters in a particular word. It does not matter how one does it: as long as the criteria for an ECF are met, it will be recalled later when the word is viewed. Eliciting an emotional response is the key. Other factors, such as level of visual detail, are completely secondary.

“Reise”, given above, is interesting in that it is very close in appearance to the German word “riese”, meaning “giant”.⁹ In cases like this, it is good to emphasize the point of difference: lingering in the ECF for “reise” on the act of gazing, then on the telescope. For the word “riese”, on the other hand, one might feel a huge nobleman (“r”) leaning very heavily on a cane (“i”), and emphasize the close dependence of the man on the cane, to clearly remember that the “i” comes immediately after the “r”.

The “start-up cost” associated with learning the applied synesthesia methodology is of course much higher than for techniques such as connecting paths or salient images. One has to learn a new way of perceiving and using the alphabet. However, applied synesthesia allows the language learner to make better use of the features of natural human memory. The result is faster language learning, better retention, and more enjoyability.

⁹ The Germans are prone to this sort of thing.

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A General Approach to Language Learning

The preceding sections introduced the applied synesthesia methodology for learning vocabulary lists. This section suggests that applied synesthesia makes practical a new over-all strategy for language acquisition.

There is a technique for teaching someone to swim which consists of throwing them in the water and hoping for the best. By-and-large, this technique has given way to a more gradual approach of teaching one skill at a time, until the student by learning each skill in isolation has gained mastery of the water.

However, the equivalent of the “throw them in the water” approach to language instruction (appropriately enough called “immersion”) is not only still in practice but widely applauded. “Immersion” is sometimes supported on the grounds that it supposedly corresponds to how a child learns their first language: building up all language skills simultaneously. This is, of course, false. An infant spends over a year listening carefully to their native language before making any significant attempt to speak it, a linguistic modesty which adult students of language would do well to emulate.

Short of full immersion, standard classroom language instruction amounts to “immersion light”, teaching all four basic language skills (reading, writing, listening, and speaking) at the same time.

The approach suggested here, similar to swimming instruction, is to learn one thing well before going on to the next. The simplest and generally most useful of the language skills is reading. First learn to read a language well; only then, as needed, develop the other skills. Given a reading knowledge of a language, a subsequent immersion is more likely to be useful and enjoyable: it amounts to learning another application of skills already mastered.

I believe the reason the “reading first” methodology is not widely employed is that it emphasizes learning vocabulary. One can not begin to read a language without the ability to recognize a thousand words, and more realistically ten thousand. If acquiring vocabulary is assumed to be difficult, time-consuming, and unpleasant, then one might as well do something else (such as learning grammar, speaking and listening skills, etc.) while a vocabulary is built up.

However, applied synesthesia alters the balance of power by greatly simplifying the process of building vocabulary. This makes practical what I consider the less overwhelming approach of developing a reading mastery of a language before moving to other skills.

The approach to learning languages which I would suggest is therefore:

1. Learn to recognize at least the thousand most common words in written form (preferably, ten thousand).
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2. Start reading.
 3. After developing the ability to read a newspaper fairly easily, begin studying the grammar of the language. At this point, grammar instruction becomes a matter of consolidating patterns the student has already learned, rather than memorizing complex rules in the abstract.
 4. Develop other language skills (listening, speaking, and writing) as needed. At this point, immersion makes fairly good sense.
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Closing Comments

The applied synesthesia approach presented here tacitly assumed that the language being learned has a Latin-based alphabet. This is not a fundamental constraint. A synesthetic alphabet for Cyrillic¹⁰, for instance, can also be built by the means described above.

Non-alphabetic languages (such as Chinese) pose a different set of problems: here, it probably makes most sense to focus on developing synesthetic models of the radicals from which ideograms are composed.

Aside from synesthesia, a different approach to learning language vocabularies is to develop the ability to use eidetic (“photographic”) memory. Eidetic memories generally fade when things are named, or in the presence of other forms of symbolic reasoning.¹¹ To harness eidetic memory therefore requires as a first step learning to switch between symbolic and non-symbolic thinking.

It should be mentioned that applied synesthesia affects one more deeply than learning such skills as driving a car or playing tennis. Firstly, synesthesia alters one’s perception of the world in a quite literal sense. Not for the worse, in my opinion, but certainly one is living in a slightly different world with synesthesia than without it.

Secondly, applied synesthesia requires a heavy emotional load: one has to produce an emotional response to many thousands of words individually. There is something like an emotional muscle in the brain which initially tires under this load. As its strength grows, a consequence seems to be a general increase in emotional acuity. One does not necessarily feel differently about things than one did before, but the emotions one would have had in any case are felt more acutely and with more emotional richness or detail.

I mention these observations to suggest that anyone who masters the technique of applied synesthesia will in the process necessarily become a slightly different person.¹²

¹⁰ An interesting experiment would be to study how those who have a Latin-based synesthetic alphabet react to learning Cyrillic (or other non-Latin alphabet). For instance, one could impose the task of learning to write English using Cyrillic characters. If one hypothesizes (as I do) that synesthesia is a learnable skill, one would expect participants to develop an increasingly well-defined synesthetic Cyrillic alphabet over a period of time. If one assumes synesthesia is an unlearnable and uncontrolled response to the environment, one would expect a well-defined synesthetic Cyrillic alphabet to appear instantly.

¹¹ For this reason, eidetikers are more likely to be children or autistics than “normal” adults. Eidetic memories should also be more prevalent among successful practitioners of Zen, since Zen amounts to the deliberate suppression of symbolic thought (or, put differently, to induced autism).

¹² Those familiar with Luria’s reports (A.R. Luria, *The mind of a mnemonist: a little book about a vast memory*) may wonder whether remembering more inherently causes distraction or confusion, to such an extent that a powerful memory could be viewed as a disability. I do not think from my own experience that this is necessarily true, although I do not claim a memory on par with the one described by Luria. What does appear to be true is that an increased ability to form associations makes one more prone to digressions, making it more difficult to “think in a straight line”. One symptom of which is an inordinate fondness for footnotes.

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Appendix A: A Synesthetic Latin Alphabet

This appendix describes my own synesthetic Latin alphabet. It is provided to give a sense of its properties and as background for the examples given above. I do *not* recommend that anyone seeking to use the applied synesthesia methodology memorize this synesthetic alphabet. They should instead develop their own synesthetic alphabet, by the means described above.

An important point is that while each letter has a core color and texture, it builds out from there to a more abstract “personality”, including an emotional sense and common usages in ECF’s. Depending on need for a particular ECF, a letter may show a great deal of its personality, or simply fade into the background displaying only its core characteristics.

- **A.** The letter “a” is brown, with the texture of fertile dirt. In ECF’s, it can be literally dirt, or more abstractly a peasant or someone tied to the soil. It tends to be associated with poverty, with a simplicity and straightforwardness, but generally not with weakness. It is not a “sophisticated” letter.
 - **B.** Is a very dark blue, and almost always takes the form of a quiet pool of water. It is a very reflective, even spiritual letter. It tends to be associated with traditions, learning, peace, and with places for serious gatherings.
 - **C.** White and with a hard texture. Unlike “a” or “b”, it has little personality or philosophical overtones. It frequently becomes a white cup of coffee or a helmet. Associated with “h”, it is frequently a white mushroom growing in a forest.
 - **D.** A very light blue, with an ethereal feel. Frequently associated with the sky on a clear summer day. More generally, it has a sense of dreaminess, and of dreamy people.
 - **E.** A thin, black line. Frequently becomes a strong black cable, or a crack in a wall or floor, but can also be as abstract as indicating a direction of gaze. A “low-key” letter which rarely takes the lead in defining the sense of a word.
 - **F.** Tan, sometimes speckled, “feathery” in texture. Associated with flight and with birds, and with rapid, flying motions.
 - **G.** Gray, hard, rocklike in texture and hardness. Frequently becomes a strong, handmade stone wall or a cobbled street. It has an “old” feel to it, often associated with medieval cities.
 - **H.** Brown, hard, the texture of wood. Often becomes a tree, a forest, or a wooden plank or dock. By extension, can also refer to a person with a particularly rigid bearing or to a woodsman.
 - **I.** Silver with a mixture of white, smooth, straight, hard. Frequently becomes a walking stick, a telescope or a sword.
 - **J.** Bluish green, hard, smooth, faceted. Almost always becomes a jewel of some form. Overtones of beauty, wealth, privilege or opportunity.
 - **K.** Very dark black, vast, more a spatial background than a texture. Can become a dark night sky or someone dressed in a black cape.
 - **L.** Very white, usually vertical column. Can become someone dressed in white, lightening, or a white building. Associated with learning, in either a scientific or spiritual sense. Always brings with it a sense of peace.
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- **M.** Blood red in color, fluid. Almost always blood or related connotations, such as a wound or a battle. Carries a sense of suffering, but also of duty, honor and the workings of fate. Can also have a lighter sense, for instance a blush or the reddish cheeks of a child, or the rush of blood associated with anticipation or excitement. Can be a very deep sunset carrying an emotional impact.
- **N.** Tan, leathery in texture. Frequently becomes clothing, of a vaguely medieval type. By extension, a person or people of low but independent class, for instance tradesmen in a medieval setting.
- **O.** White, circular, somewhat hard but also flaky texture, something like coconut flakes. Can become any circular shape, particularly white shapes, such as the moon or an egg or clouds. Can also be a face and by extension a person. A person arising from an “o” tends to be watchful, kind and quiet.
- **P.** Light pinkish-white. Smooth. Oddly enough, while this letter has the visual appearance of pink it has the emotional connotations of purple, of royalty.¹³ “P” tends to become a prince or other member of a royal family. It is associated with privilege, responsibility and power, with the calm assumption of wealth and control.
- **Q.** Whitish silver color, hard, smooth, rounded shape. Almost always becomes a bomb before or during explosion. Oddly enough, it is usually not a frightening letter. It carries with it a sense of rapid change, not necessarily for the worse.
- **R.** Bright red or orange, smooth but with some texture, something like dried paint on a portrait. Tends to be associated with a member of the nobility, dressed in red. Lower in rank than a “p” but proud of station. Can also be the red of a car or of an apple, etc.
- **S.** Clear, smooth or fluid. Can become flowing water, a waterfall, or the clear plastic surface of a table, or surfaces in general.
- **T.** Tan, thin, hard, “twiglike”. Can become the twigs of a tree, particularly if close to an “h”. Can also be string or a thin rope. More generally, refers to any thin, branching structure, such as writing. By extension, frequently becomes a clerk or bookish scholar dressed in tan clothing of a material lighter in weight than “n”.¹⁴
- **U.** White, u-shaped, usually hard. A staid, quiet, somewhat uninteresting letter. It tends to fade into the background to become a bowl, a bay, a curve in a road, etc. In conjunction with a “q”, it usually indicates a spreading shock-wave.
- **V.** Generally white, light blue or green, most notable for its “vase-like” shape and texture. Can be a tall, thin glass, a hole in the ground, a person with a very pointed smile, etc.
- **W.** A watery-blue color, smooth or fluid in texture. Has a very strong connotation of wave-like motion, for instance a ripple on a pond or an earthquake.
- **X.** Black, hard, smooth. Tends to indicate a rotary motion: ceiling fans, helicopters, etc. Can also indicate the crossing of swords, and more generally of conflict (but without the heavy overtones of “m”).

¹³ This is an example of a letter having a mind of its own. I have never been able to resolve this contradiction.

¹⁴ The similarity in color between “f”, “n” and “t” is something I would like to alter but can not. Again, letters have a mind of their own. While on the topic of synesthetic complaints, another regret is that there is no strong source of green in this alphabet.

Applied Synesthesia: A Technique for Learning Languages

- **Y.** White, but with traces of black or shadows. Texture somewhat ambiguous, but tends towards soft and felt-like. Associated with a rapid, grasping movement, as if the bottom of the 'y' were a prehensile tail.
 - **Z.** Black, somewhat distant and shadowed. Usually smooth texture, like obsidian. Also associated with vertical but forward movements, sometimes bouncing like a kangaroo.
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