

USE OF IMAGES AND FICTION RESOURCES TO INCREASE LEGIBILITY IN ACADEMIC TEXTS

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***Abstract:** Traditional academic texts, under the robe of the academic respectability and rigor, have become increasingly poorly written and intimidating. The author seems to write only for his peers, without even worrying about a more general academic audience. In addition to being barely readable, these texts turn out to be terribly tiring and tedious. This paper aims to break this barrier by proposing to write academic texts within narratives that respect the so-called “natural course of events”, using images to translate words and abstract situations. It also aims to increase the legibility, motivation and design of these texts by making use of resources commonly found in fiction texts.*

***Key words:** academic text, images, fiction, legibility*

1. Introduction: Academic Text and Tradition

There is widespread common sense around the world that the author of an academic text has to be concerned only with the content of what he writes. At most, you have to walk carefully across the minefield of technical citation standards, use of quotation marks, and abbreviations. The result is texts that resemble a maze, within which the surviving reader will be exhausted from stumbling over jargon and endless bibliographic references.

This article aims to give researchers some guidelines that can connect them more friendly with their readers.

Steven Pinker (PINKER, 2014:60), in his book *Sense of Style*, tells us that “The more you know something, the less you remember how difficult it was to learn it.” He calls this the curse of knowledge: “The curse of knowledge is the only best explanation I know of why good people write bad prose.” I agree with him. A fairly trivial example is manuals written by manufacturers of anything. Days ago, a friend and I went to consult the car manual to set the car clock. After half an hour we gave up and he had to go back to the dealership to solve the problem. It is important to remember that we both have a university degree and a good knowledge of our language.

2. From Concrete to Abstract and from Abstract to Concrete

Throughout history, as we progressed in the knowledge of the world, we had to learn to make abstractions, and as a result we had to create abstract verbs and nouns to refer to those abstractions. Besides communicating concrete situations by saying that someone had drunk water or raised a stone, we also had to enter the realm of abstraction by saying, for example, that someone fell in love or that someone was allowed or not to do something.

But we also learned how to translate these abstract verbs and nouns into concrete images to help our interlocutors better understand what we meant. Thus, in English, to love someone was translated by the expression *to fall in love*, as if love were a container, a kind of concrete trap into which one might fall by accident. For being allowed to do something or not we can say that someone has received a green or red signal, by blending it with color-coded traffic signs. We can also, instead of saying that someone will not be able to do something, say, in an informal way in Portuguese, that he /she can take the horse out of the rain, using an old image, from the time we were driven by animal traction.

Phrasal verbs are an example of replacing abstractions by images. When, instead of saying *I admire Mozart and Beethoven*, we say *I look up to Mozart and Beethoven*, we replace the abstract verb *to admire* by an image, to look up to someone bigger than us. When instead of saying *You must reduce your text*, we say *You must boil down your text*, we replace the abstract verb *to reduce* by the image of a liquid that, when boiling, decreases in quantity because of evaporation.

Often these substitutions, obeying the law of entropy¹, lose their original meanings again, becoming opaque and thus abstract. It is the case of the verb *acarretar* (to cart), in Portuguese, in sentences such as: *O número excessivo de tributos no Brasil acarreta muita burocracia nas empresas*. (The excessive number of taxes in Brazil entails a lot of bureaucracy in companies). This verb is a parasynthetic derivative: *a + carreta + ar*. It means to transport in a cart. Its original use as a metaphor means *to carry*. In the sentence, using the SOURCE – PATH – GOAL image scheme, it means that the excess of taxes carries a lot of bureaucracy to companies. But that concrete meaning has already disappeared in such way that it is very common for native speakers to use instead of *acarretar* the regency of the abstract verb *resultar* that is *resultar em*, saying: *O número excessivo de tributos no Brasil acarreta em muita burocracia nas empresas*.

In the literature we find an immense amount of translations from the abstract to the concrete. One of the most famous is that which occurs in Shakespeare's *Othello* 2011: p. Kindle 1234), when Iago goes to Othello and says:

IAGO: Oh! Watch out for jealousy, my lord! He is the green-eyed monster who produces the food he feeds on!

¹ Entropy (from the Greek entropée = changing) refers to the second law of thermodynamics, according to which everything tends to lose energy, to decay.

This tendency is anchored to a characteristic of our minds, according to Damásio, which tells us that: “A mind is made of images from the representations of objects and events to their corresponding concepts and verbal translations. Images are the universal token of mind.”²

3. Blending and Human Nature

The process of blending, by which our minds bring things or events together, creating associations of various kinds, and promoting insights, is part of human nature and often happens unconsciously:

Blending is not something we do in addition to living in the world; it is our means of living in the world. Living in the human world is “living in the blend” or, rather, living in many coordinated blends. (FAUCCONNIER & TURNER, 2002: 390)

Thirty thousand years ago, our ancestors blended a stick and a stone and created the stone ax. When we baptize a child, we perform a blending between the water poured over the child’s head and his/her entry into the church.

Among the various blending processes, metonymy and metaphor stand out. Our perception of the environment in which we live is metonymic and multimodal. When we see a person sitting across the table, we see only part of it, but our mind tells us that we are facing an entire person. We make a blending between the part we see and the whole part that is present in our long-term memory. When I answer the phone and hear my mother’s voice, I don’t need to ask who is speaking, because her voice is part of her own and my mind blends both. When I smell coffee, walking into my house, I blend coffee and its smell. Metaphors, which are used to realize abstract things and events, follow the same process. When I say that Sebastian Vettel was a lion, in the Monaco Grand Prix, I blend a lion (his strength and courage) and the Formula 1 racer.

Reading any newspaper, it is very easy to see the use of metaphors to realize abstract situations, as in the following examples³:

2 António Damásio, *The strange order of things: life, feeling, and the making of cultures*, p. 107.

3 Good news for those who fight with the scales. Anyone who gains a lot of weight or loses weight and gets it back simply failed to balance the caloric checkbook, which can be corrected by reneging on fatty foods or carbohydrates.

Privatization and concessions to private enterprise are one of the pillars of the economic policy of Minister Paulo Guedes, who, on the one hand, throws all the chips in the Social Security reform to set off the public deficit and, on the other, articulates a growing openness to private capital to resume investments, warm the economy, generate jobs and income.

Notícia boa para quem **briga com a balança**.

Qualquer um que ganhe muito peso ou perca peso e o consiga de volta simplesmente não conseguiu equilibrar o **talão de cheques calórico**, que pode ser corrigido renegando alimentos gordurosos ou carboidratos.

(*O Estado de S. Paulo*, 17.07.2019)

As privatizações e concessões à iniciativa privada são um dos **pilares da política econômica** do ministro Paulo Guedes, que, de um lado, **joga todas as fichas na reforma da Previdência** para **detonar o déficit público** e, de outro, articula uma abertura crescente ao capital privado para retomar investimentos, **aquecer a economia**, gerar empregos e renda.

(*O Estado de S. Paulo*, 9.06.2019)

In an academic text it is perfectly possible to use that strategy. For example, this excerpt from an original academic text in the field of Dentistry:

In a surgery, when we have to extract the third molar in the lower jaw, there is an additional problem, because the root of this tooth is very close to the lower alveolar nerve (NAI), and any accidental damage to this nerve can cause permanent paraesthesia in the patient.⁴

This would be another version of the text using an image for making more concrete the problem of proximity of the inferior alveolar nerve to the root of the lower third molar:

In a surgery, when we have to extract the third molar in the lower jaw, a villain may enter in scene: the proximity of the root of this tooth to the inferior alveolar nerve (NAI). Any accidental damage to this nerve can cause permanent paraesthesia in the patient.

What we did was blending *proximity* and *a villain*, turning the proximity of the third molar root to the inferior alveolar nerve into an agent, following Williams's lesson, when he says: "You can use the principles of verbs as actions and subjects as characters to explain why your readers judge your prose as they do." (WILLIAMS, 2015:20) He also says that:

Readers want actions in verbs, but they want characters as subjects even more. We create a problem for readers when for no good reason we do not name characters in subjects, or worse, delete them entirely. It is important to express actions in verbs, but the first principle of a clear style is this: make the subjects of most of your verbs the main characters in your story. (WILLIAMS, 2015:20)

4 www.periodicoseletronicos.ufma.br/index.php/rcisaude/article/view/6514

What has changed in the second version of the text in Dentistry? In addition to turning an event into an agent through blending, we created a suspenseful plot in which a dentist can become a hero, overcoming paresthesia. Another resource, therefore, besides using images for making abstract situations more concrete is to create narratives and, if possible, include suspense and surprise (cf. Tobin⁵).

See, for example, an original text in mental health:

Violence and Mental Health ⁶

International research has indicated the association between experiencing violence and suffering mental health problems throughout the cycle of human growth and development. Studies involving from 6 to 10-year-old children in a poor and violent neighborhood in Washington, USA, indicate that exposure to this type of phenomenon (being victimized or being witness of it) is associated with mental distress symptoms like anxiety, depression, sleep disorders and intrusive thoughts. There is an association between family and community violence with internalized and externalized behavioral problems, pointing out that the strong relationship between community violence and the children's mental functioning occurs because their sense of security is threatened, hampering their growth and development. Other studies confirmed the association between victimization due to violence with physical problems, post-traumatic stress disorder, lack of concentration in school, sleep disorders and hypervigilance.

See now another version, simulating a narrative and using images obtained by “blending”:

Violence and mental health

The memory of having suffered violence or having witnessed violence hijacks the child's safety. Without this protective shield, her mind is invaded by the idea that something bad is always about to happen. This is called intrusive thoughts. The child begins to become anxious, depressed and does not trust anyone else. Sleep disorders, hypervigilance and lack of concentration at school start working on autopilot and lock her compass of feelings in the opposite direction of emotional development. This was the result of a study involving children from 6 to 10 years old in a poor and violent neighborhood in Washington. International researches have confirmed the adverse effects of this pathway to nowhere.

⁵ Vera Tobin, Elements of surprise: our mental limits and satisfactions of plot, 2018.

⁶ Simone Gonçalves de Assis; Joviana Quintes Avanci; Renata Pires Pesce; Liana Furtado Ximenes. Centro Latino-Americano de Violência e Saúde Jorge Careli, Fiocruz. Av. Brasil 4036/700, Mangueiras. 21040-261. Adaptated.

In the alternative version, we transformed events (sleep disturbance, hypervigilance, loss of concentration) into agents. We also used concrete images like hijacking, protective shield, invaded mind, autopilot, compass. Another thing we did was to reorder the facts within temporal iconicity, according to Lakoff's proposal, cited by Petruck (1996):

Lakoff (1986: 153) argues against a purely syntactic account of the coordinate structure constraint. More specific, Lakoff proposes a notion of a "natural course of events" characterized in terms of a semantics of understanding. Lakoff's "natural courses of events" or "scenarios" are "humanly-constructed holistic organizations of states and events".

An example is the chronological ordering among sentences to facilitate understanding such as:

Mary came home, showered and went to sleep.

Maria went to sleep after showering when she got home.

The first sentence respects the natural course of events. That is why it is easier to understand. The second, using subordination, subverts this order, and those who read it have more difficulty in understanding. Sometimes you even have to read it again.

4. Why Does It All Work

Why does creating emotionally colored narratives make it easier to read? The answer is: because of the design of the affects. As Cron (2016:13) says: "What actually causes that great feeling is a surge of the neurotransmitter dopamine. It's a chemical reaction triggered by the intense curiosity that an effective story always instantly generates."

Nucleus Accumbens ⁷

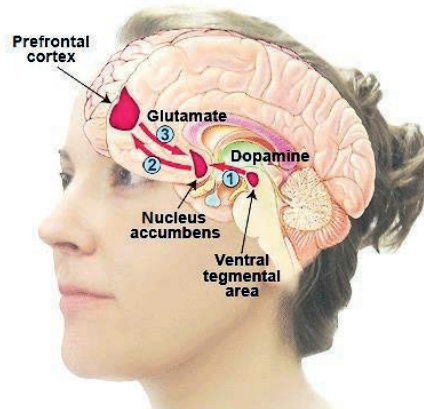
But it's not just about "intense curiosity." Modern neuroscience, based on brain MRI tests, demonstrates that overcoming challenges, overcoming dangerous situations releases dopamine in our brain in a region called nucleus accumbens. The nucleus accumbens is the region of the

⁷ https://www.google.com.br/search?q=nucleus+accumbens&source=lnms&tbm=isch&sa=X&ved=0ahUKEwiR-aaA_uTjAhVsK7k-GHRVqB94Q_AUIESgB&biw=1384&bih=982#imgrc=8rr786nm79xOcM:

brain responsible for pleasure. Everything that makes us happy releases dopamine in the nucleus accumbens, such as eating something delicious, love or being with whom we love.

That's why we take pleasure in extreme sports such as rafting, body jumping, gambling, horse racing etc. But a smarter way to feel this pleasure is, instead of personally facing a danger, blending ourselves and a danger that is away from us. Watching a hero win, seeing a happy ending also release dopamine into our nucleus accumbens.

Figura 1- *Nucleus Accumbens*



Fonte: <https://encrypted-tbn0.gstatic.com/images?q=tbn%3AANd9GcROlhyVfSFbdDIaxZL-kH3hNmUU1KqT6YFT0dtn_C9PL3xe2q0D>

Aristotle called it catharsis. In football, for example, we experience great joy when our team wins, although we have not made any spectacular moves or scored any of the winning goals. The same happens when we read a good work of fiction and identify with a character or an overcoming situation. Mario Vargas Llosa, the great Peruvian writer, winner of a Nobel Prize, says the following about fiction:

Condemned to an existence that never meets their dreams, humans have had to invent a subterfuge to escape their confinement within the limits of the possible: fiction. It allows them to live more and better, to be others without ceasing to be what they already are, to move in space and time, without leaving their place or their time and living the most daring adventures of body, mind and passions, without losing judgment or betraying the heart. ⁸

The great Latin poet Lucretius coined the expression “Suave mari magno” in his poem *De Rerum Natura*, referring to the pleasure we feel when we realize that we are free from the dangers that threaten others. The suffering of others would be to us a great smooth sea. This is an excerpt from this poem:

8 Folha de S. Paulo, Caderno Mais, 1995.

It is pleasant when, in the great sea, the winds turn the waters and, from the earth, we can watch the great anguish of others;

It is not that one's misfortune is a delightful pastime,

but to know the misfortunes of which we are free is pleasant.

It is pleasant even to contemplate the immense war competitions, arranged along the battlefield, without not being part of the danger;

There is nothing more pleasing than to dwell in the high plains, serene and uplifted by the science of the wise,

from where we can look down and see everywhere men trying to reach a path to their misguided existence, competing in talent, fighting for honors.⁹

That is why I propose to use fictional text resources as a kind of “blueprint” to write academic texts. And that is also why I fully agree with Stein (2014:7), when he says:

Though the ostensible purpose of nonfiction is the conveyance of information, if that information is in a raw state, the writing seems pedestrian, black-and-white facts in a colorful world. The reader, soon bored, yearns for the images, anecdotes, characterization, and writerly precision that mark information writing come alive on the page. That is where the techniques of fiction can be so helpful to the nonfiction writers.

When we write, we put down on paper what we think, know, or believe we know and pay little attention to the effect on the reader. That is discourteous in life and unsuccessful in writing.

And also, when he says:

Researchers, scientists, academicians marshal their facts to a higher standard, but with their neglect of the emotive power of language they often speak only to each other, their parochial words dropping like sand on a private desert.”

Despite our alleged reverence for fact, the truth is that our adrenaline rises most in response to effective expression. When a writer or speaker understands the electricity of fresh simile and metaphor, his choice of word empowers our feelings, his language compels our attention, acceptance, and action. When Shakespeare speaks, when Lincoln orates, we are moved not by information but by the excellence of their diction. (STEIN, 2014:10)

Let's look at another original academic text, followed by a version in which we apply both the reordering of events according to temporal iconicity, and the use of images within a plot:

9 <http://trabalharcansa09.blogspot.com/2009/10/lucrecio-de-rerum-natura-21-61-suave.html>

Original text:

During pregnancy various physiological, physical and psychological transformations occur in the woman's body. For this reason, the relevance of qualified follow-up by a multidisciplinary health team together with the dental surgeon during prenatal care is portrayed. In this sense, it is evident that complications during pregnancy can even affect the oral cavity. Thus, it is noteworthy that the prenatal guidance on preventive and educational care, control of plaque, healthy eating and oral hygiene should be addressed throughout the pregnant woman's dental treatment. Therefore, this study aimed to perform a literature review emphasizing the importance of dental prenatal.¹⁰

Rewritten text

During pregnancy, various physiological, physical and even psychological transformations occur in a woman's body. There may even be major impacts on the oral cavity. The lack of proper plaque removal from the teeth, for example, keeps the immune system overloaded, which, having to continually eliminate plaque bacteria from the blood, lowers its guard against other threats such as throat infections, infections in the ears, urinary system, etc., also harming the health of the fetus. For this reason, it is important that a dental surgeon be included in the multidisciplinary team that will take care of the pregnant woman. Simple oral hygiene and cleaning guidelines will build a safety net for both the mother and the future baby. This paper aims to perform a literature review emphasizing the importance of a dental prenatal.

The original text begins by defending the participation of a dentist in the multidisciplinary team that takes care of a pregnant woman's prenatal care. It then relates oral problems that justify this inclusion and next returns to the initial theme. In its new version, there was a concern to obey a chronological order (temporal iconicity), focusing in the harmful effects of the dental plaque. This generates a kind of suspense as it endangers the pregnant woman and the fetus. The dentist's participation in the multidisciplinary team corresponds to a "happy ending". There was also concern about using images through metaphors such as *impact*, *lowering guard* and *safety net*.

Conclusion

When writing about scientific topics in much of the world, including Brazil, the concern with language has traditionally been restricted to the spelling and grammatical correction of the text and the observation of citation and bibliographic reference rules. I hope this article of mine has shown that this alone is not enough. That we need to innovate by focusing on the reader, as if we were talking to him. Making use of appropriate narratives and images, often using comparisons and

metaphors, is not trivializing science, or desecrating it. On the contrary, it is to show respect to the reader, giving the text an ergonomic design that attracts his sensitivity, enhancing the understanding and the desire to continue researching and exercising creative thinking.

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