

Scientific Research, Writing, and Dissemination (Part 3/4): Scientific Writing

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Abstract

This is the-third-paper, in-tetology on the Scientific Research, Writing and Dissemination. Writing is a-universal-type of formal-scientific-communication, and yet, academics/researchers/scientists have a-rather dreadful-reputation, for being un-interesting, monotonous and, even, pathetically 'dry' writers. One-reason, behind-that, could-be, that majority of scientists are *not*, really, trained-writers. Moreover, pressure to-publish, poorly-prepared-manuscripts, and multiple-rejections, by-various-journals, dampen the-spirits of untrained-academic-writers, resulting in their-reduced-productivity. Scientific-style-writing may be 'thorny', in the-beginning, for 'greenhorn'-writers, but clear-communication and concise-writing, can-be-trained. The-main-objective of this-paper is to-offer early-stage-researchers (beginner researchers and scientific writing-apprentices) easy-applicable, yet, theoretically-insightful-introduction, to-the structural-components of-a-scientific-paper and basic-writing-guidelines. The-seasoned-writers will-also find few-interesting revelations and 'food-for-taught'. This-paper focuses on-scientific-writing (mainly for peer-reviewed publication) and largely presumes *no* explicit-disciplinary perspective, however, some-emphasis on-engineering-research, is given. The-main-instruments applied in this-study were: a-survey and a document-analysis. The-respondents identified, that almost-every-section of a-scientific-paper, is challenging, for them, although to a-different-extent. Majority (64%) indicated that they have-experienced rejections, in-their-publishing-endeavors, while the-rest said, that all-their-submissions, for-review, were successful. Out of those, experienced rejection, 57% stated, that, they usually re-submit, their-manuscript, to a-different-journal, after improving or correcting it, while 43 % preferred to-do nothing, after the rejection. 55% also confessed that they: (1) are *not* very-confident, in their-ability, to-write (for scientific- publication) in-English, and (2) do-not-know *exactly* what constitutes a-good-research-paper and fine scientific-writing. 36% stated that they are *not* so-sure about the-*proper*-structure of a-scientific-paper. The-study also-revealed some-signs of *Dunning-Kruger Effect*, in-writing, particularly, among-younger faculty. To-address the-findings of the-research, and to-give a-multifaceted-perspective, on-the scientific-writing, the-paper, in-addition, presents a-fusion of guiding-principles, found in-literature, and supplemented by the-author' input, about structuring and writing a-scientific-paper. In-particular, the-following was elaborated on: Misconceptions about scientific-writing; Expanded 'Hourglass-Model', based on the-IMRaD-format; Micro-issues of writing (grammar and punctuations); How to-deal with-rejection of a-manuscript; English as *de facto* language of scientific-communication; Characteristics of good-scientific-paper and writing-style; and Establishing one's unique-voice, in-scientific-writing, among-others. The-study is important; in making a-contribution (in-its-small-way) to-the-body of knowledge, on-the-subject-matter, and it-is-potentially-beneficial, to-scientific-writers, at *any*-stage, of their-research and scientific-writing- career.

Keywords: scholarly article, paper structure; journal publications, English, rejection, hyphen.

1. Introduction

1.1. Scientific-writing: concepts, types, reasons behind, and benefits.

Writing is one of the-remarkable-symbols and milestones of the-evolution, of human-civilization; it-is a-medium of human-communication, which expresses language and emotions, through the-inscription or recording of signs and symbols. The-history of writing goes-back to-about the-4th-millennium BCE, when the-complexity of trade and administration, in-Mesopotamia, outgrew the-capacity of human-memory, and, hence, writing became a-more-dependable-method of recording transactions, as-well-as, historical and environmental-events, in a-permanent-form (Powell, 2009).

The-advent of writing marked a-distinguishing-line between pre-history and permanently recorded history. Pre-history mainly-involves drawings; as-well-as: songs, rituals, legends, and myths--composed orally, and preserved (by-memory), for the-purpose of passing them, from one-generation to-the-next, by a-spoken-word. The-writing'-permanence has-made-possible such-intellectual-developments, of human civilisation, as: literature (including scientific-writing); publishing (including scientific-writing and its-publishing); libraries; and dictionaries, to-mention just a-few. Scientific-writing, broadly-entails: caring out a-comprehensive-literature-survey, gathering and analyzing data, and writing and polishing numerous- versions, of a-manuscript.

For the-benefit to potential-readers, there is a-need, to-clarify some-differences among academic/scientific and science writing (also-called 'popular-science-writing'). Many of us, use these terminologies interchangeably; however, there are some-distinctions, which are helpful to-appreciate, for those of us, wanted to-be precise. In-essence, academic and scientific-papers are published, in-peer reviewed research-journals, for the-community of scientists, while popular-science-writing is for-readers, who-are *not*. Davies (2008), for-example, points-out that,

many-scientists, in-communicating with the-wider-public, operate from the *deficit-model*, which assumes ‘public-deficiency, but scientific sufficiency’. *Scientific-writing* is technical-writing, by a-scientist, published in peer-reviewed-research journals, for the-an-audience of extremely-specialized-community, of other-scientists. For-example, journals like *Nature*, *Science*, and journals published, by a-large-reputable-publishers, with many-journals, e.g. *IISTE*, and so-on, publish scientific-writing. *Science-writing* is writing about-science, for the-popular-media. The-audience is much-more-general -- anyone with an-interest in-science, who-are *not* specialists, in-the-discipline. Science-writing is published in *Scientific American*, *Discover Magazine*, or, *National Geographic*, among-many-others.

In-general, scientific-writing tends to-be more-clearly-focused, less-paratactic, less-personalised, with information quite-densely-packed. In-addition, for this-type of writing, the-suppression of slang, colloquial and humorous-elements is in-order. A-number of grammatical-devices have-been also-introduced, which make the-text heavier and more-objective, as-well. One of such-devices is *objectification*, turning concrete-processes into abstract-things; done by back-grounding and/or fore-grounding of the-information, in-ways that allow an-argument to-be effectively-developed. Moreover, scientific-writing should-ascertain precise, objective, clear, and logical-claims, with semantic-connections among-events, entities, and attributes, etc. (Derntl, 2003).

On-the-other-hand, Rosales *et al.* (2012), identified three-different-approaches, to-writing: (1) a-skills-approach; (2) a-process-approach, also called academic-socialization; and (3) an-academic illiteracies-approach. According to the-*skills-approach*, writing is seen as a-generic, cognitive, individual- skill. If a-person *cannot* write, in an-academic-context, it-is because they have *not* acquired the-necessary skills. The-process or academic-*socialization-approach* implies that writing is *not* a-skill that can-be acquired, generically, but is tied to-particular-disciplines or contexts. This-approach acknowledges that-different disciplines have particular-writing-genres and ways of using-language. *Academic-illiteracies approach*, on-the-other-hand, is considerably-different, from the-preceding-two. It presumes that writing, in an-academic-context, is complex and unstable; it-is about learning and gaining an-identity, in ever-changing disciplinary-requirements, and also developing-authority, in a-particular-context. The-context is constantly shifting, being situated, in-time and place. Moreover, the-term ‘illiteracies’ acknowledges that academic writing encompasses more, than just-writing. A-writer needs critical-literacy, visual-literacy, research- literacy, information-literacy, and so-on, to-be a-really-successful-writer--writing with-authority. From this- perspective, writing is something that acquired, over-time and with practice, by participating in-research activities and research-dissemination-process.

In-addition, according to Anderson (2003) academic-writing should-be: (1) *Discipline-specific* (writing that conforms to-methods and conventions, expected within an-academic-field of study; demonstrates one’ knowledge of the-demands of one’ academic-community; and shows, that one is a-member of a-particular-academic-community); (2) *Evidence-based* (statements should-be-supported by-verifiable-facts, figures and other-knowledge; and by-relevant, real-world-examples (if possible)); (3) *Balanced* (writing should show a-range of background-reading on an-issue; statements should-be-based on-logical-reasoning; discussions should-present, opposing-views, fairly; conclusions should-be-drawn, from careful-reflection, of the-evidence); and (4) *Truthful* (statements should-be-based on-accurate, current-data and state-of-knowledge/art; information should-be from reliable-sources; proper-citations should-be-given, for the-sources of information and ideas; and writing must-conform to-standards of academic-honesty and integrity).

According to Day (1983), a validly-published-scientific-paper must-contain the ‘first-disclosure of results with sufficient-information, to-enable peers to: (1) assess observations, (2) repeat experiments, and (3) evaluate intellectual-processes’.

The-reasons, behind scientific-writing, range from the-dignified-selflessness, to-base-reasons of self-indulgence. Selflessness, for-example, *altruism*, is where one passionately-writes, purely for-the pleasure of writing, in-itself. This-pleasure derived, from the-creative-activity of writing, and from sharing one’s intellectual-quests, for the-desire to-advance human-knowledge, for the-benefit of humanity, at-large. For such-few-authors, writing is an-instrument of expression the-joy of scientific-discovery. At the-other extreme is a-self-indulgence, where writing may-be-considered, by-some, to-be an-imposed obligation or, even, a-burden, or a ‘necessary-evil’, needed, to-fulfill specific-minimum-requirements (for-example, number of publications), e.g. for getting a-promotion.

Moreover, Booth *et al.* (1995) convey three-motivational-reasons for writing-up and publishing research-findings, such-as: (1) *to remember*, because once something is forgotten, it-cannot-be reproduced, correctly, without having written-notes; (2) *to understand*, as writing about a-subject can *only* be accomplished, by-approaching the-subject, in a-structured-way, which itself leads to-better-understanding thereof; and (3) *to gain perspective*, as writing includes looking at something, from different-points of view, and obtaining a better-understanding of the-own-ideas and results. Peat *et al.* (2002), on the other-hand, has-listed several-more-pragmatic-reasons, for writing-up and publishing-research results, such-as: (1) having results, that are worth-reporting; (2) wanting to-progress Science; (3) desiring to-reach a-broad-audience; (4) improving the-chance of promotion; and finally (5) it-is, simply, unethical, to-conduct a-study, and *not* report the-findings. For many-

academicians, it-is, actually, an-implicit or unequivocal-requirement to-publish-papers. In-addition, Stock (2000), pointed-out on the-following- stimulus for researchers, to-write and publish their-research-work, as-follows: (1) scientific-communication (O'Connor (1995), for-example, points-out that this-is essential, if science is to-progress); (2) ideal and legal-protection of intellectual-property; (3) gaining reputation; and (4) thinking in-economic-measures, 'sale to-achieve high-prices' may-be-transformed to 'publish to-achieve many-citations' (*economic-theory of science*).

The-following-scenarios, however, are not-uncommon, where, for-instance: a-researcher made a-scientific-innovation, or a-discovery, but: (1) never wrote-it-up and published it; (2) it took too-long to-write it-up, so someone-else publishes-it-first; and (3) they produced a-manuscript, but could-not-publish, due to-financial-constraints; and (4) they publish the-findings, but nobody-understands, what, exactly, is written (due to-poor, vague, or misleading-scientific-writing); and so-on.

On-the-other-hand, scientific-writing and publishing, has numerous-benefits, such-as: *Personal developments* (through scientific-writing and publication, the-author achieves expertise and, eventually, becomes-acknowledged, by-academic-peers, as an-authority, in-similar-fields of endeavor); *Career-benefits* (initial-appointment to an-academic-position; renewal or confirmation of that-appointment; and promotion to a-higher-level-appointment); *Professional-benefits* (invitations to-lecture, or give a-key-note-speech, at-different-scientific-forums; appointments as-consultants to-external-agencies, expert-panels and advisory boards, and to-reviewer and editorial-boards; accreditation by professional-bodies, and application for-membership in-prestigious-learned-societies. From the-academic-research-point of view, writing and getting-published, improves one's prospects, of being-successful, in-applications for research-funding, extension of funding, and to-obtain further-funding. Grant-awarding-bodies, usually, closely-examine the publication-track-record, of the-applying-researchers, when considering dispensation of funds. *Institutional benefits* (publication in peer-reviewed-journals is arguably the-most-important-means to-get international- recognition, not-only for an-individual, department, School or Institute, but for the-affiliated-University, as-well, contributing to an-institution's academic-prestige and standing (Peh, 2008). It can-also serve, as- a-channel, to-establish-links, with other-research-centers, for-potential-training, and research-opportunities.

An-end-product of scientific-writing is a-published-scientific-article, which is a-technical- document, describing a-*significant* experimental, theoretical or observational-extension, of current knowledge, or advances, in the-practical-application, of known-principles (O'Conner & Woodford, 1976).

1.2. Scientific-publication: its essence and types

Robert Day (1983) gives, a-rather-stiff-definition of a-scientific-paper as: 'a-written and published-report, describing original-research-results'. On the-other-hand, Whitesides (2004) pointed-out that: 'A-paper is an-organized-description of hypotheses, data and conclusions, intended to-instruct the-reader. If your- research does-not generate papers, it might just as-well not-have-been-done'. A-quality-research, published in a-peer reviewed-journal, becomes a-source of information, point-of-reference, critique, and, sometimes, even, inspiration, for-other-researchers.

A-scientific-publication is a-document, in-printed ('hard') or electronic ('soft') form, which reports the-results of original-research. It-is-important, to-emphasize, that a-research-article should-report on research-findings, that are *not-only-sound* (valid) and previously-unpublished (original), but also add some-new-understanding, observations, proofs, i.e. potentially-important and value-adding-information (Gordon, 1983). A-*published-scientific-article*, on-the-other-hand, is an-unquestionable-indicator of an-achievement, of a-certain-academic-standard. It represents the-only permanent-record of the-scientific work, which has-been carried-out, completed, and accepted, by-peers. Besides, a-publication presents a-basis, for further-opinions, views and critiques, from fellow-experts-professionals and academics, separated, by-distance, and by-time. Publication of research-findings, in a-reputable peer-reviewed-journals (with high-impact-factor) can-be also-considered as a-dominant-international-currency, for employability and acceptability, which goes-beyond any-institutional and political-boundaries. Besides, according to McCulloch (2016): 'To-have a-certain-number of publications, of specified-quality, is-not-only to-be 'ref-able', but-also to-be employable and promotable'.

Major-types of scientific-publication are, as-follows: (1) Book; (2) Book-Chapter, in an-edited-volume; (3) Book-review; (4) Research-Paper; (5) Review-Paper; (6) Conference-Paper/Abstract/ Poster; (7) Thesis/Dissertation; (8) Short-Communication; (9) Monograph; (10) Translation-text; (11) Essay; (12) Explication; (13) Grant-applications; (14) Course-syllabi; and (15) Manual/instructions/guidelines.

In-addition, Eunson (2009) pointed-out on-another-common-type of scientific-writing, such-as Report. A-research-study adds to-the-body of knowledge; this-requirement distinguishes a-research-paper, from a-report. Reports categorized, as: Technical-brief; Feasibility-report; Experimental/research-report; Progress-report; Procedure/task-report; Field-report; Quality-control-report; Investigation-report; Test/ laboratory-report; Hazard-report; Evaluation-report; and Proposal-report, among-others.

This-study focuses on scientific-writing for scholarly (peer-reviewed)-paper.

1.3. Lack of awareness and misconceptions, about scientific-writing; and Rejections of manuscripts, for publication.

According to Irvin (2010), there are several-surprising-misconceptions (myths) about scientific-writing: (1) *The 'Paint by Numbers' myth*: Some-authors believe, they *must* execute consecutive-steps, to-write 'correctly'. However, rather than being a-lock-step linear-process, writing is 'recursive' (e.g. during-writing, authors do-cycle-through, and repeat the-various-activities, of the-writing-process, many-times); (2) *Writers only start writing when they have everything figured out*: Writers figure-out-much of what they want to-write, as they-write-it. An-analysis, of the-already-written-parts, breaks a-subject apart, to-study-it, closely, and from this-inspection, ideas for further-writing emerge; (3) *Perfect first drafts*: Sometimes, writers put unrealistic-expectations on early-drafts. However, no-one writes perfect-first-drafts; polished- writing takes a-lot-of-revision; (4) *Some got it; I don't—the genius myth*: When one sees their-writing ability, as-something-fixed, or out of one's-control (as if it-were in one's genetic-code, which *cannot* be-changed), then one would *not* believe they-can-improve, as a-writer, and as a-result, they do *not* make any-efforts, in that-direction. With effort and study, however, one can-improve, as a-writer; (5) *Good grammar is good writing*: When people say 'I cannot write', they, often, mean that they experience problems with grammatical-correctness. Writing, however, is about more than just grammatical-correctness. Good-writing is a-matter of achieving one's-desired-effect, upon an-intended-audience; and (6) *Never use 'I'*: Adopting this-formal-stand, of objectivity, implies a-distrust (almost-fear) of familiarity and, often, leads-to-an-artificial, puffed-up-prose. Nevertheless, in some-scientific-writing-situations one has to-avoid using *not* only 'I', but also 'we' (to-recoil, from ironic-inclusion, of potential-reader(s)).

Additional-delusion is that, scientific or academic-writing, is rather-complex, as there-are so-many issues, which must-be-taken into-consideration, to-produce a-quality-manuscript. Indeed, the-issues are many, as shown in Figure 1, nevertheless, with continuous-practice and focused-effort, good-results can-be achieved, and, eventually, scientific-writing could, even, become one's-second-nature -- *no* struggle, whatsoever, just pure-pleasure.

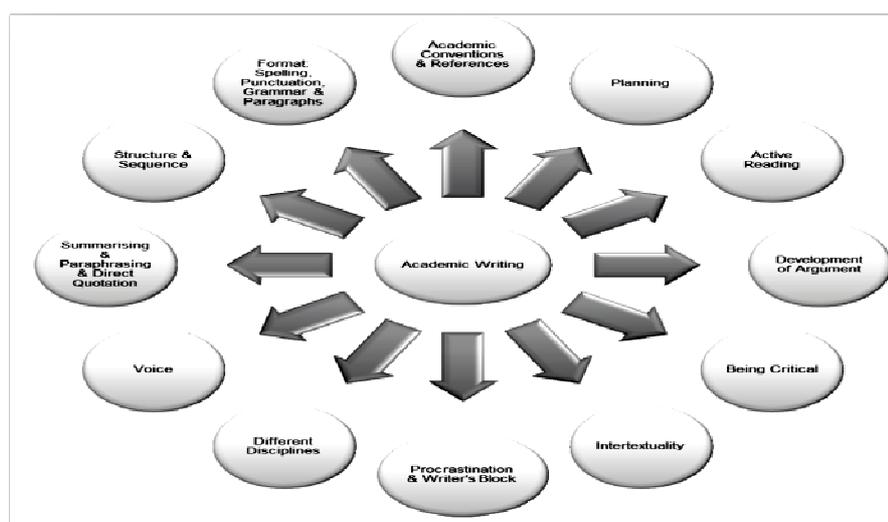


Figure 1: Issues in academic-writing (Fitzmaurice & O'Farrell, 2009).

There-are also a-number of misconceptions, about rejections of manuscripts, by-journals. One of such misconception is: *It is not novel to repeat an experiment*. Many-manuscripts are-rejected, because a reviewer said: 'That is already-been-done'. Many-others have-never-been submitted because the-writer feared such-a-response. However, in areas, such-as e.g.: Physics, Chemistry, Biology, and Medicine, it-is customary that different-groups repeat an-important-experiment, under slightly-different-conditions, or with slightly-different-methods-to-see, if it-can-be, independently-corroborated. Moreover, results are *not* accepted, by the-scientific-community, unless they have-been independently-verified (Denning, 1980).

First-attempt-authors often complain on the-high-rejection-rate of their-manuscripts. Worsham (2008) substantiates, that the-acceptance-rate, of any-good-scholarly-journal, is typically-quite-low, so the-chance of rejection is, always, relatively-high. Kapp *et. al.* (2011), mention that the-rejection-rate of leading-international-research-journals, currently-averages around 90%. A-study, among editors of 73 accredited South-African-journals, also-confirmed an-exceptionally-high rejection-rate. In-addition, according to Masic (2014) cited by Starovoytova & Namango (2016a): 'Retractions in academic-publishing have reached an enormous-apex, increasing tenfold, in the last-three decades, the biggest-reasons for this is plagiarism and duplications (self-

plagiarism) and poor-quality of a-manuscript’.

Lack of uniqueness and innovation in-research, poor-research-design, inappropriate-methodology, errors in selecting proper-statistical-tools and techniques, inadequate-training on scientific-writing, grammatical and syntax-errors, and various-other-flaws, are major-contributory-factors, leading to a-poor manuscript. In-addition, some-authors arrive to-flawed or statistically-unsupported-conclusions, based on uncritical-acceptance of statistical-results. ‘Critical’ here is *not* used in-the-sense of ‘to-criticize’ as in find-fault-with. Instead, ‘critical’ is used, in the-same-way as ‘critical-thinking’ is used. A-synonym might-be ‘analytical’.

On-the-other-hand, top-journals, repeatedly-rejected, articles, which later-on turned-out to-be scientific-breakthroughs and, even, won the-Nobel-Prize (Fröhlich, 2007); meaning that even great-ideas, which are *not* expressed-clearly, could-be overlooked and, therefore, rejected.

Furthermore, getting published, in-reputable-journals, is an-extremely competitive-venture. Most-journals receive more-papers than they can-physically-publish; the-more-prestigious a-journal-is, the-higher the-number of submissions-received and rejected-by-it. Logically, poorly-written-papers are the-first-ones, to-be-rejected.

Each, of the-above-misconceptions, individually, or cumulatively, might lead-to-problems, in-scientific-writing.

1.4. Research purpose

Currently, at *any*-university, or a-research-institution, performance-pressure and obligation to-publish, well-publicized-phrase ‘*publish or perish*’ has-become a-necessary-evil (Bajwa & Sawhney, 2016), mainly, for promotions. It-has also-created a ‘rat-race’ and rivalry, among-colleagues, for-acceptance, for publishing and for *rapid*-publication. Besides, a-common-problem, for many-potential-writers is that they-find it-difficult to-formally-translate, the-findings and outputs, of their-research, into an-understandable and publishable-format (Albarran & Scholes 2005).

On the-other-hand, a-written-word (used, in publishing) is permanent and unchangeable-record. This-also-correlates with the-recent-study by Starovoytova & Namango (2017a) cited Baždarić (2009), pointing-out that: ‘The-published scientific-paper is a-strong-reference and lasting-legacy and, forever, shall-remain subject to-examination and criticism’, therefore it should-be properly-structured and well-written.

According to Gasparyan (2011), there is, internationally, an-increasing-concern, with the-quality of scientific-writing. In-almost-every academic-discipline, publications are the-most-important and, often, the-*only*-measurable-output. Even if a-paper get-published, however, its-quality, and value-addition, to-the-particular-field, remain a-big-concern. For-example, it-is estimated that *not* less-than-15% of the-scientific-papers, published-worldwide every-year, are *not* beneficial to-the specific-domain, they-are-covering (Sulçebe & Kelliçi, 2015). Pöschl (2004), for-example, very-boldly and candidly, expressed his-assessment on the-quality, of scientific-papers:

Large-proportions of scientific-publications are careless, useless or false, and inhibit scholarly-communication and scientific-progress. This-statement may sound provocative, but unfortunately is not an-exaggeration. Many-scientific-papers fail-to-provide sufficiently-accurate and detailed information, to ensure that fellow-researchers can efficiently-repeat the experiments or calculations and directly follow the-line of arguments, leading to the-presented-conclusions. Even in reputable-peer-reviewed-journals with high-impact-factors many-contributions exhibit a-lack of scientific-rigor and thorough discussion. All too often papers fail-to-reflect the-actual-state of-the-art and do-not-take into-account related-studies in a critical and constructive-way.

On-the-other-hand, a-major-prerequisite for a-manuscript, to-pass a-rigorous-peer-review-process, prior to-publication, is a-clean, concise and coherent-writing-style, as-well-as meticulous-organization and elaboration of the-statement, unfolding in-the-paper. To-achieve this, very-many-revisions may-be necessary; first-draft, as mentioned-earlier, in this-paper, is never-perfect. Besides, it-is generally recognized, that writing-*well* is important, for success in a-particular-field of study, as-well-as in a-writing-career (Malkinson, 2008). Moreover, to-be successful in research, it-is *not* enough, just to-publish papers; to-be-victorious, one must-have those-papers cited, by-other-experts (Schimel, 2012; Malvar, 2008).

Writing is a-universal-form of formal-scientific-communication, and yet, scientists have a-rather dreadful-reputation, for being un-interesting, monotonous and, even, pathetically ‘dry’ writers. Writers, at times, do *not* have confidence or lose their-confidence in-writing, due to-concerns about their-basic language-skills, or about being-able-to-write the-highly-stylized-language, of a-particular-discipline-papers (Catterall, 2011; Montgomery, 2003). One-reason, behind-that, could-be, that majority of scientists are *not*-really trained-writers.

According to Badenhorst (2008), ‘Any time you start a new writing project, you embark on a new-journey’. This-passage points to-the-courageous and exciting-voyage of discovery, and also reflects the-difficulty that many of us, have with the-process of writing, such-as, for-example, the-struggles to-achieve clarity of thought and briefness of message. On-the-other-hand, many-scientific-writers, once they have-reached a-certain-level of expertise, with academic-writing, do neglect-to-continue developing their-writing-skills, or to-explore their-

identity, as a-writer (Rosales *et al.*, 2012).

On-the-other-hand, many-international-authors have-published their-research-findings on scientific-writing; in-particular: Norris (2016); Lester & Lester (2015); Sulçebe & Kelliçi (2015); Bonnard *et al.* (2012); Taavitsainen & Pahta (2012); Jamali & Nikzad (2011); Baždarić (2009); Anderson (2003); Hengl & Gould (2002); Hammermeister (2002); Procter (2002); Koopman (1997); and Swales (1993), among-others. Those-authors looked at-different-elements of scientific-writing; at-times, they focused *only* at-one single-element, e.g. a-title, an-abstract, or a-lexicon, therefore giving a-fragmented-coverage. Other-writers, according to Rosales *et al.* (2012), focused on tools or skills, rather than on-the-process of writing. This-work, however, attempts to-present the-subject-matter in a-more-systematic-way; covering the-*entire* process and considering scientific-writing as an-integral-part of research, an-intermediate-process, between Research-process and a-Scholarly-publication (see Figure 2).

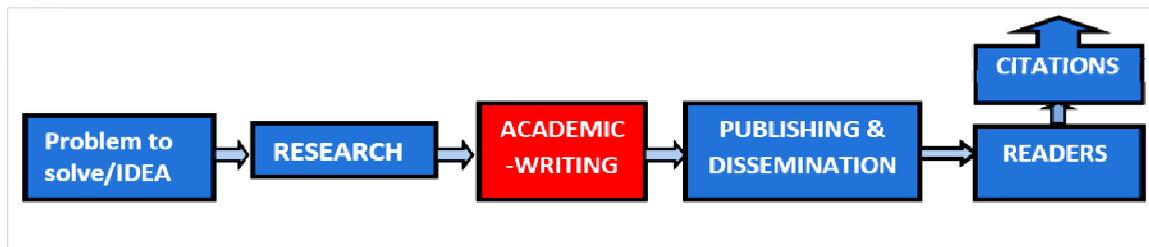


Figure 2: Focus of the study (modified from Starovoytova, 2017b).

Pressure to-publish, poorly-prepared-manuscripts and multiple-rejections, by-various-journals, dampen the-spirits of writers; particularly-so for ‘greenhorn’-writers, at the-beginning of their-writing-efforts. Nevertheless, clear-communication and concise-writing, for a-scientific-audience, can-be trained (Davis, 1997). In this-regard, the-current-paper presents a-fusion of a-survey, on the-scientific-writing, at Engineering-school, and guiding-principles, found in-literature, supplemented by the-author’ input, about structuring and writing a-scientific-paper. The-main-objective of this-work is to-supply early-stage researchers (beginner-researchers and scientific-writing-apprentices) with practical-introductory-guide to the-structural-components of-a-scientific-paper and basic-writing-guidelines. The-seasoned-writers, on-the other-hand, will-also find few-interesting-revelations and ‘food-for-taught’. This-paper focuses on scientific writing (mainly for peer-reviewed-paper) and presumes *no* explicit-disciplinary-perspective.

To-give a-multifaceted-outlook on-the scientific-writing, the-paper also presents a-fusion of guiding-principles, found in-literature, and supplemented by the-authors’ submission, about structuring and writing a-scientific-paper. In particular: Misconceptions about scientific-writing; Expanded ‘Hourglass Model’, based on the-IMRaD-format; Micro-issues of writing (grammar and punctuations); How to-deal with-rejection of a-manuscript; English as *de facto* the-language of scientific-communication; and Establishing one’s unique-voice, in scientific-writing, among-others, were elaborated on.

The-study is important and potentially-beneficial to scientific-writers, at *any*-stage, of their-writing career.

2. Materials and Methods

2.1. Design of the study

The-study was divided into 3-distinctive-parts, which shown in Figure 3.

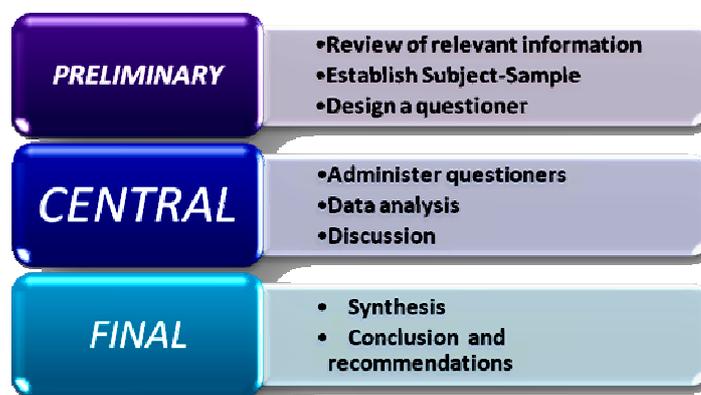


Figure 3: Sequential-parts of the-study (Starovoytova & Namango, 2016b).

In-addition, interested-readers could refer to Starovoytova *et al.* (2015), to-find informative synopsis regarding Kenya and its-educational-system. Besides, study by Starovoytova & Cherotich (2016) provides valuable-particulars, on the-university and the-school of Engineering, where the-study was conducted.

2.2. Sample size

To-evaluate perceptions on-scientific-writing, among-senior-faculty, at the-Engineering-school, a-designed confidential self-report-questioner was used, as the-main-instrument for this-study, with the-sample-size of 15 subjects.

2.3. Main instrument - the questioner

Analogues to Starovoytova (2017b), the-study implemented an-approach of projective-technique, by requesting questionnaire-respondents questions, about their-perceptions on scientific-writing of research findings. The-respondents were-guaranteed-confidentiality, and the-questionnaire was filled in anonymously, with no-identification-information. A-designed-self-report-questionnaire was used in eliciting-information, from the-subject-sample; it consisted of two-sections, first-section is the-demographic characteristics of the-subjects; second-section, is on the-personal-views of the-faculty on scientific-writing, itself and relevant, to it, issues.

2.4. Data Analysis

The-questioner was pre-tested, to ascertain its-validity and reliability. Validity was tested by pre-testing of the questioner, analogues to Starovoytova *et al.*, (2016). Moreover, the data-collection-instrument was subjected to statistical-analysis to determine its-reliability, via a-Cronbach's alpha-co-efficient (Kothari, 2004), computed by the-Statistical-Package for Social-Sciences (SPSS-17) version 22-computer software program. Descriptive-statistics was also-used-to-analyze both; qualitative and quantitative-data.

3. Results and analysis.

3.1. Validation of the instrument

Upon-validation, the-questioner was found acceptable (in-terms of its coverage, length, and organization) with minor-editing. Questionnaire-data were-coded, entered into-SPSS, and checked for-errors. Data were analyzed, list-wise, in SPSS, so that the-missing-values were-ignored. Cronbach's-alpha-test of internal- consistency was-performed, and established high-inter-item-consistency (Cronbach's $\alpha > 0.8$).

3.2. Analysis of the questioner.

Total of 15-questioners were administered, out of which, 11 were submitted-back, giving a-response-rate of 73 %.

3.2.1. Analysis of part I: Demographic-Characteristics

Figure 4 shows Demographics of the-participants of the-survey.

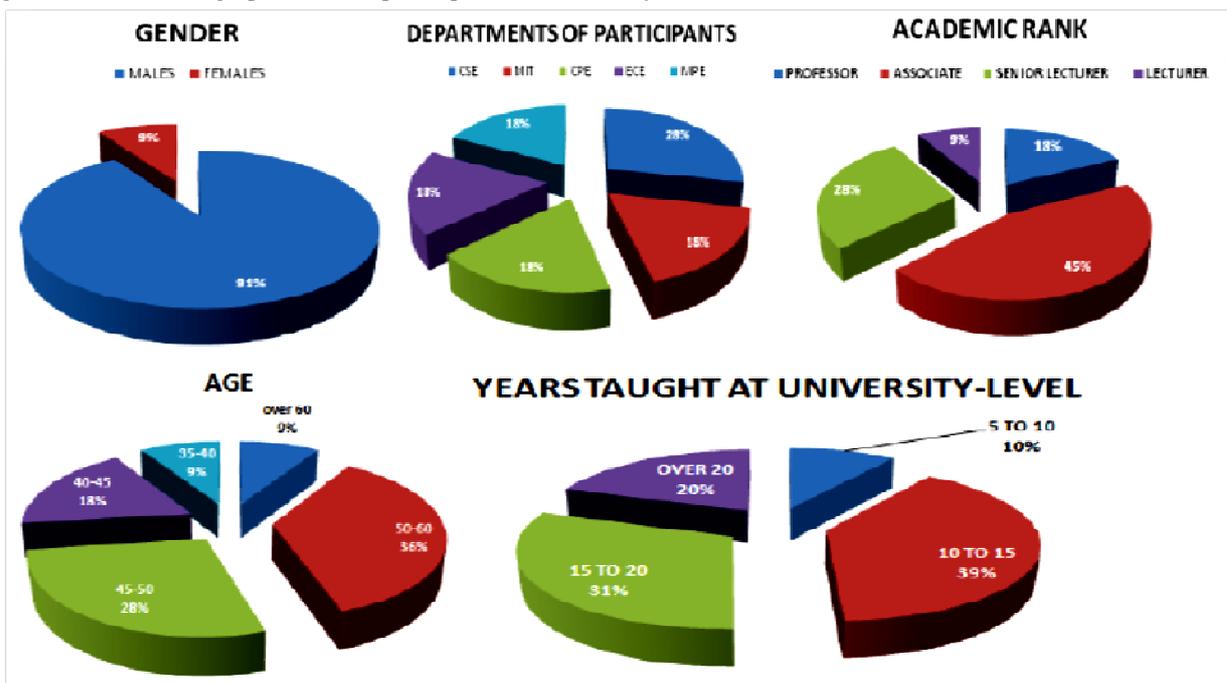


Figure 4: Demographics of the participants (Starovoytova, 2017b).

3.2. 2. Analysis of the-responses

The-respondents identified the-section(s) of a-paper, which is/are the-most-challenging, for them, to-write, as-folllows: Analysis of results 45%; Abstract 36%; 27% indicated Materials & Methods and Results sections; Discussion, Recommendations and References were equally-difficult for 18% of the-respondents, while Introduction perceived as difficult by *only* 9%.

Moreover, 36% stated that they are *not* so-sure about the-*proper*-structure of a scientific-paper.

Majority (64%) indicated that they have-experienced rejection, in-their-publishing-endeavours, while the-rest said, that all-their-submissions, for-review, were-successful.

Out of those, experienced rejection, 57% stated, that, they usually re-submit, their-manuscript, to a-different-journal, after improving/correcting, while 43 % preferred to-do nothing, after the rejection.

55% confessed that they are *not* very-confident in their-ability to-write (for scientific-papers), *in-English*.

4. Discussion.

This-section will try to-address the-major-issues, revealed by the-responses, as-well-as, matters arising from these-issues.

4.1. Rejection experiences

Majority of respondents (64%) indicated, that they have-experienced rejection, in-their publishing- endeavors. The-enthusiasm and the-joy of writing, diminish with-repeated-rejection of manuscripts, even, in-authors, with good-potential (Kurdi, 2015; Onwere, 2014; Sharma, 2010). Within the-academy, publications are considered the-dominant-currency, of employ-ability and promote-ability; hence, rejections tear-down author(s) self-esteem.

Rejection of a-manuscript, by a-journal, although, devastating at-first, is *not* really the-end-of-the-world; on-a-contrary, the-authors should-appreciate the-efforts-made by the-reviewer(s) or editor(s)'and for giving the-author(s) an-additional-chance toward producing a-high-quality-output, in-terms of both; communication-quality and scientific-merit. Good-criticism is constructive and *proper*-review-report, usually, points-out on the-limitations of a-paper, giving author(s) a-road-map of the-appropriate-course of action, to-transform a-paper to a-higher-level of an-acceptable standard, which will greatly-enhance the-probability for-acceptance, at-the-second-attempt. Authors should respond to *each*-issue, raised by-the peer reviewer(s), in a-systematic way—either; defend their-position in an-objective, justifiable-way, or comply with the-suggestion, by modifying the-text, then, following the-editor's instructions, and re-submitting the-improved-manuscript, in a-timely-fashion.

For-example (Turbek *et al.*, 2016) stated, that: (1) if the rejection is due to-paper' being-outside-the-scope of the-journal, to which it-was first-submitted, it-is-logical to-submit it, to a-more-relevant-journal; (2) if the-reason, for dismissal, is scarcity-of-data, or insufficient-analysis, or other-technical-reasons, the-deficiencies could-be-rectified by-gathering-more-data, undertaking-more detailed and appropriate-analyses, providing-additional-interpretation of results, and so-on; and (3) if the-authors are convinced that the-reviewers' lack of proper-understanding of the-authors' viewpoints, is the-dominant-reason, for-rejecting the-paper, the-authors could-offer more-detailed and compelling- explanations. In-such-situations, the-author(s) should-seek the-editor's suggestions, and advice, on-the best-way, to-proceed.

In this-study, out of those, experienced rejection, 57% stated, that, they usually re-submit, their-manuscript, to a-*different*-journal, after improving or correcting it, while 43 % preferred to-do nothing, after the-rejection. The-negative-reviews, may-result in: (1) re-submission, after correction, for re-review, or (2) outright-rejection. In the-first-case, the-article is, still, existing; but there-is, an-uphill-task, to-bring it-up, to-the-required-standard; whereas, in-the-second-case, the-article is dead, with *that*-journal. But the-author(s) can, still-try to-resuscitate-it and submit, the-improved-version, to-the-other-journal. The-rejected-writers, in this-study, preferred this-option.

On-the-other-hand, authors, are strongly-advised *not* to-pursue swap-publication of a-paper, rejected for-*fatal*-flaws, because that could-damage their-career and reputation. Moreover, 43% of the-respondents, preferred to-do nothing, after the-rejection; for some of these, it-could-be the-end of the-road. Overall, this-withdrawal is very-regrettable, and it-is, indeed, a-potential-loss, as these-writers *not* being-able, to-reach-their-writing-potential and fully-contribute, to the-developments, in their-field. In such-cases, senior-colleagues should-come into-the-picture, sharing their-experiences of their-own negative reviews, and providing their-support, encouragement (never to-give-up) and guidance, on-how to-improve the-rejected-manuscript.

The-study also-showed some-signs of *Dunning-Kruger Effect*, in-scientific-writing, particularly, among younger-faculty. This-effect refers to-the-tendency of people, who-are-unaware of how-little they-know about a-subject, to-be-overly-confident, of their-abilities and judgment. The-effect consider, that unskilled-people often rate their-knowledge and ability much-higher, than it, actually, is, suffering from *illusory-superiority*, while more-highly-skilled-people underrate-their-own-abilities, suffering from *illusory-inferiority*. An-implication of the-Dunning-Kruger-effect is that people, who know, a-little about a-subject, may-assume they understand it, more, than people, who have-more-knowledge, and are-able-to appreciate how-little they-really-understand. This-effect, hence, could-be contributing to-numerous rejections, as inexperienced-writers overestimate, their-

knowledge and abilities, for-example, on scientific writing-process. This-overestimation, in-turn, results in-situations, where young-writers, at-times, submitting their-manuscript for review, with *no* proof-reading done, by the-more-experienced-colleagues. The-writers should-engage a ‘critical-friend’, to-review and improve the-quality of the-manuscript. This-aspect of ‘informal-review’ can-also be-achieved, through the-use of a ‘publication syndicate’ (Gee, 2011; Rhoads, 2006; McVeigh *et al.*, 2002; Baldwin & Chandler, 2002)-- a-small-group of colleagues, who review each-other’s work-in-progress, on a-regular-basis, in a-proven, safe, and collegial-manner.

Respondents also-complained, that editors rejected results, which-are considered-as-negative, and, hence, discouraged-them, from publishing. In the-author’s humble-opinion, negative-results should-be published, due to-following-considerations: (1) negative-results are *also* results; and (2) if negative-results are *not*-published, other-researchers would-be completely-unaware of them and would, then, repeat the-same-research, with the-same-negative-result, going round and round, and, hence, wasting their-time, energy, and resources.

4.2. General-structure of a-scientific-paper.

36% stated that they are *not* so-sure about the-*proper*-structure of a-scientific-paper; hence, it-will-be discussed further.

The-three-basic-aspects, to-effective scientific-writing, are: *thought, structure, and style*. *Thought* is a-matter of having some-worthwhile-results and ideas, to-publish. *Structure* is simply a-matter of getting the-right-things, in the-right-place. *Style* is a-matter of choosing the-fewest and most-appropriate-words, phrases and terminology, and using the-rules of good-grammar.

Prior to-exploring the-micro-issues of writing (lexicon, grammar, and punctuation), it-is beneficial, to-review the-macro-issues, particularly, the-structure of a-scientific-paper. Writing a-journal article, can be an-overwhelming-process; however, breaking-it-down, into-manageable-tasks, can-make the-overwhelming, the-routine. Each-part of a-paper serves a-different-purpose, and has a-narrowly defined-content and purpose. Understanding how each-section functions, will-help the-authors minimize overlaps and repetitions, hence, contribute to-clarity and brevity, in the-writing-presentation, of the-study’s-findings (Cáceres *et al.*, 2011).

Unlike a-novel or a-newspaper-article, a-scientific-article has a-required-structure (well-defined procedure) and style, which is by-international-consensus, known as IMRaD-- ‘Introduction, Methods, Results and Discussion’ (Hengl & Gould, 2002), which is considered as a-*non*-arbitrary-format, directly reflecting the-process of scientific-creation and discovery (ICMJE, 2011).

The-structure, of a-research-paper, comprises 3-core-parts, namely: introduction, body and discussion. According to Swales (1993) the-progression, of the-thematic-scope of a-paper, within these-parts, typically follows a-pattern called the ‘Hourglass Model’ (see Figure 5a). Virtually-every form of academic-writing, follows the-model, in-general (Anderson, 2003).

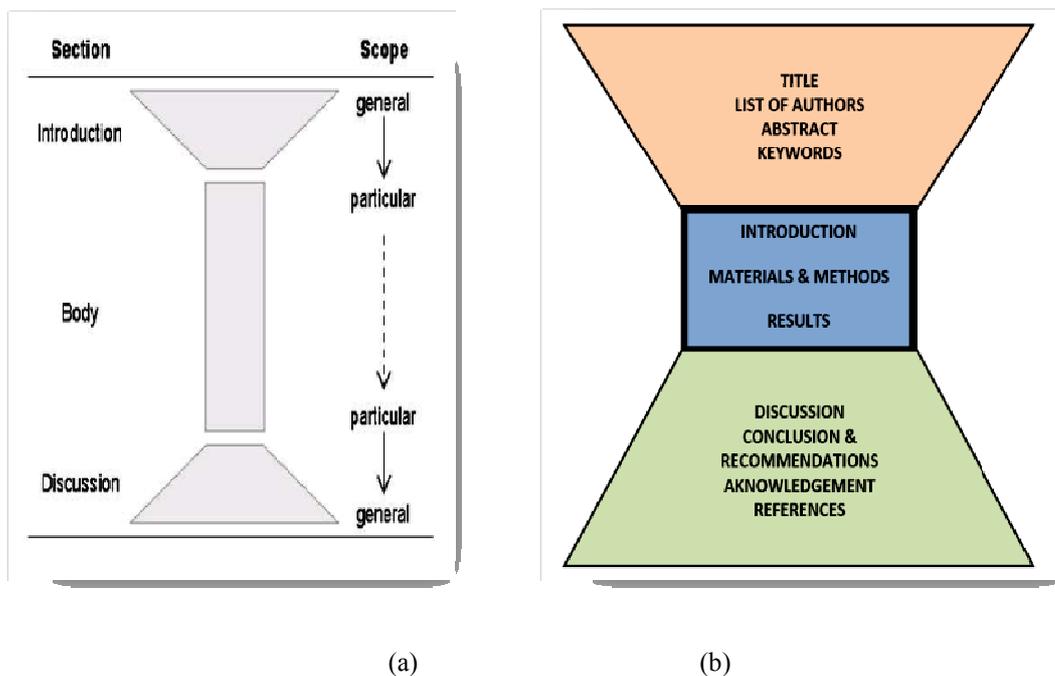


Figure 5: Structure of a-scholarly-paper.

(a) Original ‘Hourglass-Model’ (Swales, 1993); (b) Expanded ‘Hourglass-Model’, based on the-IMRaD-format.

The-subsequent-sections, of this-publication, are to-explain, sequentially, every-element of the-expanded-model (how scientific-research-papers should-be organized, to-meet the-demands and norms of scientific-publications).

4.2.1. The-Title-section

Great-scientific-writing starts with understanding on how-to-write a-great-title. This-is one of the-most important-tasks and, for some of us, the-most-difficult-one. Undeniably, the-title is the-very first-part of a-paper; hence, it-is read, first, and it-is read, the-most. In-many-cases, regrettably, it-is the-*only* part that is read of one'-paper, meaning that the-title, in-fact, failed to-attract, or to-appeal-to a-potential reader, even if it-was-relevant, to a-reader'-inquest.

According to Jamali & Nikzad (2011), the-prevailing-trend is, said to-be that, on-average, the-number of readers from one-section of a-paper to-the-next, in-the-above sequence of Figure 5(b), decreases by a-factor-of 10. That means for-every-10-readers, who look at-the-title, one reads the-Abstract; for-every-10, who read the-Abstract, one goes to-the-Results-section, especially Tables and Figures; for-every-10, who read the-Results, only-one-reads the full-paper. Consequently, for every-person, who reads the-full-paper, 1,000 people read the-title!

The-title has two-functions: (1) to-attract other-researchers, to-read one's paper; and (2) to-provide, the-best-information-possible, to-help electronic-search-programs find one's-paper, easily. Electronic indexing-services rely-heavily on-the-accuracy of the-title, to-allow users to-find papers, that are relevant, to their-research. The-title may-be-reprinted, in-bibliographies and subject-indexes, stored in-bibliographic databases, and cited in-other-articles. Therefore, the-title is an-extremely-important-component of a-paper, and therefore, it should-be, at-a-very-minimum, good, if *not* excellent.

Day (1983) defines a-good-title as: 'the-fewest-possible-words that adequately-describe the contents of the-paper'. In-addition, the-title: (1) Should concisely-convey the-fundamental-nature of the-research; for-example, variable-factors manipulated, parameters-measured, etc. may-be-included; and (2) Phrasing the-title as a-question can-be-powerful and effective. Besides, according to Peat *et al.* (2002), effective-titles should: (1) Identify the main-issue of the-paper; (2) Begin with the-subject of the-paper; (3) Be-accurate, unambiguous, specific, informative, and complete; (4) Attract readers; (5) Contain as-few-words, as-possible (many-journals limit titles to 12-words); (6) Be unproblematic to-understand and *not* misleading; (7) Describe the-contents of the-paper (ideally, the-methodological and content-specific substance of the-paper) accurately and specifically; (8) Avoid abbreviations, formulas, and jargon; (9) Not include any-verb; (10) Not contain low-impact introductory-words, such-as: Observations, Investigations, Study, and Effect of, among-others ; (11) Not-be 'flashy', as in-newspapers (avoid over-statements and exaggerations); (12) Report the-subject of the-research, rather than the-results; and (13) Follow the-style preference of the-target-journal.

Furthermore, Jamali & Nikzad (2011) differentiate title-types, as-follows:

(1) *descriptive* titles, which describe what the-paper is about (e.g. 'Investigating the-role of academic-conferences on shaping the-research-agenda'); (2) *declarative* titles, which make a-statement about the-results, presented in the-paper (e.g. 'Academic-conferences shape the-short-term research-agenda'); (3) *interrogative* titles, which pose a-question (e.g. 'Do academic-conferences shape the-research-agenda?'); and (4) *compound* titles, which may combine several of the-above, separated by colons, or question-marks (e.g. 'Do academic-conferences shape the-research-agenda? An-empirical-investigation').

The-same-authors, further, investigated the-impact of the-title-type, on the-download, and citation-count of a-paper; interrogative-titles have more-downloads, *but* fewer-citations. Compound-titles (with colon) are longer, and have fewer-downloads and cites. Long-titles tend-to-get fewer-downloads and citations, than shorter-titles (Jamali & Nikzad, 2011). In-synopsis, a-great and effective-title should-be *catchy* and should-give maximum-information, in the-smallest-amount of allowed, *by the-publisher*, space.

4.2.2. The-List of Authors section

Authorship is about publicly putting one's name, to a-scientific-publication. The-authors-list should-include all-those, and *only*-those, who-have *actively* participated in-the-work. In-particular, the-authors must fulfill *all* of the-following-four-criteria: (1) Substantial-contributions, to-the-conception, or design of the-work; or the-acquisition, analysis, or interpretation of data; (2) Drafting the-work, or revising it, critically, for-important-intellectual-content; (3) Final-approval of the-version, to-be-published; and (4) Agreement to-be-accountable for all-aspects of the-work, ensuring that questions, related to-the-accuracy or integrity, of any-part of the-work, are appropriately-investigated and resolved (Sulçebe & Kelliçi, 2015). Only-those, who-have-met, *all-four*-criteria, for-authorship, should-be designated, as-authors. Those, who do *not*-meet all-the-criteria, should-be included, in the-acknowledgement-section, of a-paper.

The-major-problems with authorship-issue are: (1) the-exclusion of deserving-participants; (2) the-inclusion of undeserving-ones; or (3) order-disputes. 'Honorary', 'guest', or 'gift' authorship includes these, who had-little, or nothing to-do-with the-content of a-paper. 'Gift' authorship, for-example, occurs when someone, who has *not*

made an-intellectual contribution to a-paper, accepts, or even insists on, an-authorship (Rennie & Flanagan, 1994). These-kind of authorship dilute the-credit, due, to-the-people, who-actually did-the-work, inflates the-credentials, of the-illegally added-authors, and makes the-proper-attribution of credit more-difficult, and, hence, should-be-avoided. Similarly, ‘ghost’-authorship, where a-person, who-writes a-paper is *not*-listed, among-the-authors, misleads readers, and also should-be-condemned. A-recent-study by Starovoytova (2017c) on barriers to-scientific-research, have exposed yet-another-kind of authorship, brutally-honestly, named as ‘*publishing prostitution*’.

Besides, the-list of authors establishes accountability, as-well-as, credit. Ideally, any-part of an-article, critical to its-main-conclusions, must-be the-responsibility, of at-least one-author. On the-other-hand, apportioning-credit, for work-done, as a-team, can-be difficult, nevertheless, it needs to-be allocated, appropriately. Authorship-conventions may-differ, greatly, among-disciplines, and among research-groups. In-some-disciplines, the-group leader’s name is always-last, while in-others it-is-always first. In-some-scientific-fields, research supervisors’ names rarely-appear on-papers, while in-others the-head of a-research-group is an-author, on almost-every-paper, associated with the-group. Besides, authors, contributing-equally, are listed-alphabetically, and the-publication specifies equal-contribution. According to Templin (2001), in-Japan, however, authors are-frequently listed, in-order of their-academic rank, rather than by-order, of how-much, each-person, contributed to-the-study. Wager & Kleinert (2010) in-their-study, pointed-out, that a-scoring-system may-be devised to-put relative-weigh, in-proportion to the-nature and quantum, of the-individual’s contribution.

Moreover, the-distribution of accountability can-be especially-difficult, in-interdisciplinary research. Authors, from one-discipline, may declare, sometimes-rightfully, that they-are *not*-responsible, for the-accuracy of material, provided-by-authors, from another-discipline. A-contrasting-view, is that each- author needs-to-be-confident, of the-accuracy, of everything, in the-paper. The-solution to-this-problem is to add a-footnote, accompanying-the-list of authors, which apportions responsibility for-different-parts, of the-paper. Journal-Editors, sometimes, may-require authors, to-justify the-assignment of authorship, hence it-is best to-limit authorship, to *only* the-colleagues, who-made a *true*-academic-contribution.

Some-journals/publishers require official-contributor-ship; which is defined as authors declaring in *detail*, in-advance of publication, their-individual-contributions to scholarly-papers (Rennie, 2001).

Selected-fields, particularly-those, for which numbers of authors of 100 or-more, also-known-as ‘hyper-authorship’, are *not* uncommon (i.e., in-certain-sub-fields of physics, such-as astrophysics), where use of randomization-techniques, for the-same fairness-rationale; even further-complicates the-ability, to-trace-authorship-contribution (Birnholtz, 2006; Davenport & Cronin, 2001).

4.2.3. The-Abstract-section

An-abstract, also called the *Précis or synopsis*, is a-mini-version (summary) of the-whole-paper (Day, 1988), that precedes the-article, and condenses full-paper, into a-fraction, of its-original-space. Basically, an-abstract comprises a-one-paragraph, of a-complete, but selective-summary, of the-whole-paper; hence is usually-written last (after completion of all-the-other-sections), and in-the-past-tense. The-abstract is more-specific, than the-conclusions-section, and can-have a *staccato* literary-style. Many-times, the abstract will-be-published, by-itself, in an-index to-the-article, and, often, only the-words in the-abstract can-be-searched, using library-databases; hence, the-abstract is a-critical-element of the-research-paper.

Besides, abstracts have-become increasingly-important, as electronic-publication-databases are the-primary-means, of finding research-reports, in a-certain-subject-area (Koopman, 1987). An-abstract is the-single most-important-part of the-manuscript, and, yet, often-neglected and poorly-written. On the-other-hand, journals have strict-limitations, on-the-length of abstracts, usually in-the-range of 150-250 words, so, everything-relevant to-potential-readers should-be in the-abstract, everything-else, should *not*. Various-methods can-be-used to-evaluate abstract-quality, e.g. rating by readers, checklists (*not* necessary in structured-abstracts), and readability-measures, such-as Flesch Reading Ease (Bui, 2015; Ufnalska & Hartley, 2009).

According to Day (1983), there are two-general-types of abstract: (1) an *informative* abstract extracts everything-relevant, from the-paper, such-as: primary-research-objectives, addressed; methods employed, in solving the-problems; results obtained; and conclusions, drawn. Such-abstracts may serve as a-substitute, for the-full-paper; and (2) an *indicative* or *descriptive* abstract rather describes the-content of the-paper and may, thus, serve as an-outline, of what is presented in the-paper. This-kind of abstract *cannot* serve as a-substitute, for the-full-text; while informative-abstracts may-be-viewed as standalone-documents. The-abstract, should-be, preferably, definitive, rather-than descriptive; i.e., it-should-give-facts, rather-than pronounce, that the-paper is ‘about’ something. Alternatively, a-mixed-approach, incorporating both-types; informative and descriptive, can-be used, for-example, like in this-paper.

A-checklist, listing relevant-parts, of an-abstract is proposed in (Koopman, 1987), whereas the-author suggests, each-part to-be-packed into one-sentence: (1) *Motivation*: Why do we-care about-the-problem and the-results? (2) *Problem statement*: What-problem is-the-paper trying to-solve, and what is the-scope of the-work? (3) *Approach*: What-was-done to-solve the-problem? (4) *Results*: What is the-answer to the-problem? (5)

Conclusions: What implications does the-answer(s) imply? An-abstract must-briefly-present every-component, of the-study and should: define its-scope; outline the-procedures used (selection of study-subjects, methodology, key-findings, and statistical-methods); summarize its-main conclusions and implications. The-implications and benefits of the-study should-be consistent, with the-results and should-be-highlighted. It-should-also include the-research-question hypothesis/aim, very-brief-background (from Introduction), general-summary of the-methods (from Materials & Methods), significant-results (from Results) and conclusions (from Discussion).

However, there-are some-things that should *not* be included in an-abstract, such as: information and conclusions not-stated in-the-paper, references to-other-literature, the-exact title-phrase, and illustrative-elements, such-as tables and figures (Day, 1983). Abbreviations or acronyms, unless they-are standard or explained, complex, winding, verbose-sentences, and detailed-experimental-procedures and data, should-be also-avoided. In-addition, institutional-identity should never be-disclosed, in the-main manuscript, as-majority of the-journals follow a double-blinded, peer-reviewed process (Bajwa & Sawhney, 2016), and this-information can-influence the-objectivity of the review-process, unless, the-research is a case-study, where identification is unavoidable.

Besides, authors should strive-to-be creative, in generating reader's-curiosity; to-enable readers to-make a-judgment, whether to-keep-reading or *not*, the-abstract is one of the-most-important-elements, of a-scientific-article. For further-useful-hints and comments, on preparing and writing-abstracts, refer to Bonnard *et al.* (2012); Hammermeister (2002); Procter (2002); and Koopman (1997), to-mention just-a-few.

In-synopsis, a-concise and standalone-abstract serves as a-resume for the-manuscript, helping the-readers to-decide whether it-is relevant, to their-work (Goodman, *et al.*, 2015).

4.2.4. The-Keywords-section

The-key-words (or short-phrases) are expressions, by which the-paper should-be indexed, by-abstracting services. Words, which appear in-the-title, should *not* be repeated as-keywords, because titles and keywords are listed-together, by-abstracting-services. They-are, however, should-cover all-aspects of the-study. Most-journals allow not-more-than six-keywords, while some-journals do-*not*-allow any-keywords.

4.2.5. Body of a-paper.

Generally, the-body of a-paper answers two-questions: (1) *how* was the-research-question addressed (materials, methods) and (2) *what* was found (results) (Day, 1983). The-body of a-paper reports on the-actual-research-done, to-answer the-research-questions or a-problem, identified in the-introduction. It should-be written, as if it-is an-unfolding-discussion, each-idea at-a-time. Normally, the-body comprises several-sub-sections, whereas actual-structure, organization, and content depend-heavily on the-type of paper, for-example (adapted from Foley (2013) :

In *empirical papers*, the-body of the-paper describes the-material and data, used for the-study, the methodologies applied, to-answer the-research-questions, and the-results, obtained. It-is-very important that the-study be described, in a-way that makes it possible, for peers, to-repeat or to-reproduce it (Day, 1983).

Case study papers describe the-application of existing-methods, theory or tools. Crucial is the-value of the-reflections, abstracted from the-experience and their-relevance to-other-researchers, working on related-methods, theory or tools.

Methodology papers describe a novel-method, which may-be intended for use in-research or practical-settings (or both), but the-paper should-be clear about the intended-audience.

Theory papers describe principles, concepts or models, on which work in-the-field (empirical, experience, methodology) might-be-based; authors of theoretical-papers are expected to-position their-ideas, within a-broad-context of related-frameworks and theories. Important-criteria are the-originality or soundness of the-analysis, provided, as-well-as the-relevance of the-theoretical-content, to-practice and/or research in-the-field. The-next-sections present constituents of the-body, of-the-paper, according to Figure 5b.

4.2.5.1. The-Introduction section

The-introduction-section is where a-researcher provides the-background of the-topic, for the-reader(s), to-understand the-points, which will-be brought-up, later. Introduction-section should-be-written in present tense; providing relevant-background-information, with-citations to-other-published-material; should-be developed as a 'funnel'(Figure 5 shows that the-top of the-hourglass is quite-broad; following the-model, this-section, hence, starts with a-very-general-overview of-the-topic (global point-of-view), then slowly focus-in and to-getting more-specific, about the-particular-experiment, leading to the-purpose of the-study). The-introduction-section leads a-reader, from a-general-subject-area, to a-particular-field of research. Three-phases of an-introduction can-be-identified (Swales, 1998): (1) *Establish a territory* (bring-out the-importance, of the-subject *and/or* make general-statements, about the-subject *and/or* present an-overview on-current research on-the-subject); (2) *Establish a niche* (oppose an-existing-assumption *or* reveal a-research-gap *or* formulate a-research-question, or problem *or* continue a-tradition); (3) *Occupy the niche* (sketch the-intent of the-own-work *and/or* outline important-characteristics of the-own-work; and give a brief-outlook, on the-structure of the-paper.

Gathering-background-information, and having-past-knowledge, is paramount, in-academic or scientific-writing. According to Sulçebe & Kelliçi (2015), literature-review and a-detailed-coverage of the-themes, under-

consideration, are-obligatory and must-have the-following-purposes: (1) Identification of knowledge-gaps, in-the-existing, up-to-date, information that the-proposed-article aims to-fill-in; and (2) Avoidance of repeating the-same-message or research-project, of previously-published-material. Besides, the-literature-review (which can-be divided into sub-sections) identifies the-influential historical contributions, outlines the-state of knowledge/art, and justifies the-novelty, of the-article's contribution. Hence, the-literature-review gives-credit, to our-predecessors, and justifies the-need and novelty, of the-article's own-contribution.

Another-important-issue is *inter-textuality*, which is the-combining of past-writings into original, new-pieces of text. Factoring-in inter-textuality, the-goal of academic-writing is *not*, simply, creating new-ideas, but to-offer a-new-perspective, and a-link, between already-established-ideas. The-specificity and the-originality of the-study, in-question, must-be presented, in-relation to-existing-theories and methods, on-the-subject. Four to five-major-publications on-the-problem/topic, addressed by-the-study, should-be critically-presented. Gaps, encountered in the-literature, and any-conflicting-data should be-noted, as-well.

A-good-introduction is relatively-short. It-tells why the-reader should-find the-paper interesting, explains why the-author(s) carried-out the-research, and gives the-background, the-reader-needs to-understand, and to-judge the-paper. It-is paramount, that the-first-sentence, of the-introduction, captures the-reader's-attention. Particularly, *Introduction should*: Define the-scope of the-study; Define the-problem; State the-objective(s); Identify-gaps in the-knowledge, about-the-subject; State the-purpose of the experiment; Summarize the-background to the-research (sufficiently, but *not* too-widely); State the question(s) that researcher(s) asked; Provide a-context for-the-investigation; Briefly-explain the-theory involved; and Present a-hypothesis (if any), or an-expectations.

Ideally, the-introduction-section should-end with-the 'road-map' paragraph, which outlines the-remaining-sections, of the-paper. This-paragraph serves two-important-functions: (1) it puts the complete-contribution of the-article, in-the-context of the previous-contributions; and (2) it guides a-reader, who may-wish to-skip, some-sections of the-article, directly to the-sections, that interest them. This paragraph will-also-help the-author(s), to-organize and present, the-logical-flow of information.

4.2.5.2. The-Materials and Methods-section

The-section of Materials and Methods (Methodology) is like a-blueprint (map) for the-whole-research, and it should-be-written, in past-tense, and in-narrative-form. It refers to more-than a-simple-set of methods; it refers to the-rationale, and the-philosophical-assumptions, that-underlie a-particular-study. The-section chronologically-describes the-process (in-the-order it was-performed), to-complete the-research. This section should-provide *all*-the-information, needed, to-allow another-researcher, to-judge the-study or, actually, repeat the-experimentation.

Authors should-strive to-avoid-any unclear, misleading or confusing-statements; particularly-so, when explaining the-procedure-used, and its-purpose. A-good-illustration to-this-end is a-true-story about the-elementary-school science-experiment, to-show the-danger of alcohol: The teacher set-up two-glasses; one, containing-water, and the-other, containing vodka. A-worm was dropped into-each-glass. The-worm in vodka, died-immediately, while the-worm, in-water, swam-around-happily. When the-teacher asked the pupils what the-experiment-showed; little-Kip exclaimed: 'If you drink vodka, you would *not* have worms!' This-illustration confirms, that to-avoid misinterpretation, the-purpose and the-relevance, of the-experiments, should-be clearly-explained, alongside with giving references, to the-detailed-procedures.

In-particular, the-section should-include: (1) Temporal, spatial, and historical-description, of study-area, and the-selection of the-subjects, under-study/studied-population (if applicable); (2) Functional-variables (such-as: timing, temperature, speed, concentration, etc.) and rational, for tracking those-variables; and (3) Assumptions, underlying the-study. Besides, procedures should-be listed, and described, or the-reader should-be-referred, to-papers, that have-already-described, the-used-procedures. If standard-methods were used, the-reference, to-those, should-be-given, but the-detailed laboratory-procedure should *not* be listed. Modifications (if any), from the-standard-procedure, however, should-be indicated. Specialized-equipment (if any), should-be fully-described, including brand-name, manufacturer, and year of manufacture, alongside with its-setting-parameters. Besides, statistical-methods, should-incorporate, inclusive-name of software-programs used (Eunson, 2009).

Furthermore, the-authors should-be precise, complete, and concise; include *only* relevant information, with *no* unnecessary-information (information that does-*not*-add any-value, to the-paper).

4.2.5.3. The-Results-section

The-results-section presents the-new-knowledge; therefore, it-is the-core of the-paper. It-is written, in past-tense, and in narrative-form. The-results, including unexpected or negative-results, should-be-*only* communicated, with no-interpretation. The-presentation of data may-be either chronological (to-directly correspond with the-Methods), or in-the-order of *most-to-least* importance.

Besides, it may *not* be-possible, to-discuss all of the-results. Authors-should-focus, on those, which relate-directly, to-research questions/hypotheses, and present the-results, simply and clearly; by reducing-them to, the-statistically-analyzed summary-form of: figures, graphs, and tables. While tables present accurate-numbers,

figures and graphs, show trends and features; the-best-form of presentation should be used; *not* both. In-addition, figures display important-trends, simplify detailed-data, and show basic- methodologies (Bajwa & Sawhney, 2016), where any-ambiguity, in the-data, becomes immediately-clear.

The-data, presented in-tables and figures, should *not* be-repeated in the-text, but they-should complement each-other. Tables and figures, attract the-most-attention, after Title and Abstract, however, the-authors should use them *only* if they are-absolutely-essential and if they-are, indeed, adding value. Each table/figure should 'stand alone', to-enable the-reader, to-understand the-contents, without reading the-text. Tables, should-have *headings* (positioned on-top of tables); figures--*captions* (positioned at-bottom of figures). Headings and captions should-be explicit, but *not* wordy.

Moreover, the-SI-system (*Le Système International d'Unités*) is used, generally, for-reporting measurements, in all-research-publications. Some-exceptions, however, are present for-applied-disciplines; for-example, in Textile-Industry and in Textile-Engineering (originated in Britain), yards, inches, Oz and pounds are still-predominantly-used. Units should be-presented separately, *not* as-part of headings and captions. To-report the-data, in-tables and text, up to 4digits of data-representation is allowed; decimal points and units should-be-adjusted, accordingly (e.g., 70,000g = 70kg). The-data should-be-given round-off-treatment, e.g. to one-tenth of SE (standard-error) values (if, for-example, SE is 1.756, round-off will read 1.8). In-the-absence of a-particular-number or a-value, in the-table, 'N/A' should-be indicated, instead of dashes or zero. For numbers less-than 1.0, a-zero (0) should-be added, before the-decimal-point, (e.g., '0.734' instead of '.734'). The-preferential-arrangements of data should-be so, that similar-elements are read-down, *not* across, as mental-calculations are-easier, if numbers are-placed vertically, than horizontally.

The-Results-section provides key-findings, in a-purely-objective-manner, and lay the-foundation, for the-Discussion-section, where those-data are analyzed and interpreted.

4.2.5.4. The-Discussion-section

In-this-particular-section, the-authors explain meanings, and implications of the-results. The-section pulls everything together, and shows the-importance, the-significance, and the-value, of the-accomplished-work and it-is, therefore, the-most-innovative and, for some of us, most-demanding-part, of the-paper, to-write.

Discussion also-provides a-unique-chance, to-authors, to-really-shine, by demonstrating their-ability to-synthesize, analyze, evaluate, interpret, and reason, logically and effectively. The-authors close the-loop, by revisiting their-overall-purpose, research-questions, and hypotheses, and answer the '*so what*' questions, identifying their-unique-contribution, to-knowledge.

Discussion-section interprets *each* of the-results, in-detail; it-is written in-both; present and past-tenses. Current-knowledge (from literature) is stated in present-tense, whereas researcher(s) own-work is presented in-past-tense. The-discussion-section should-cover-all-aspects of the-study; it-can-pass also beyond-the-results, achieved, and can-cover or criticize methodological-problems, and express author(s) opinions (van Wagenen, 1990), as all-the-arguments are made, in this-section. Besides, contribution to-the particular-field, is a-great-legacy, of a-scientific-paper; as-such, it-is-necessary that the-authors take their clear-positions, during the-discussion. Therefore, it is *not* enough to-just-retrieve the-results and compare them, to-those of other-researchers, rather, it-is-necessary to-contextualize them, in-light of the-current literature, and recent-advances, in-the-field, explicitly mentioning how the-findings of the-study, answer what was unknown, until now (Cáceres *et al.*, 2011).

The-original-results are to-be-compared with previously-published-works (the-similarities and differences should-be-highlighted, and the-strength and the-limitations (questions left unanswered, major experimental-constraints, lack of correlation, and negative-results) of the-study should-be clearly presented). Findings, at-times, can also-lead to diversion, into-another, and, at-times, unexpected-subject, which makes discussion even more-comprehensive and interesting. A-good-discussion, in-particular, should: (1) *Not* repeat what has already been-said, in the-review of literature; (2) Relate the-results to-the-questions, that were set-out, in-the Introduction; (3) Show how the-results and interpretations agree, or do-*not*-agree, with current-knowledge on-the-subject, i.e., previously-published-work; (4) Explain the-theoretical-background, of the-observed-results; (4) Indicate the-significance of the-results; (5) Deal with *only* the-results, reported in-the-study; (8) Stay-away from generalizations and conjectures, that are-not-substantiated, by the-results presented; (9) State conclusions, with evidence, for-each; and (10) Suggest future-research, that is planned or needed, to follow-up.

Whenever-possible, it-is-recommended to-describe the-effect-sizes, and the-confidence-intervals; since these-information reflect, on the-relevance and applicability of the-findings, and allow the-results to be-used, confidently, in-future meta-analysis studies (APA, 2008).

Another-common-element in a-discussion-section is the-application of the-results-obtained, to-solve a-specific engineering, or scientific-problem. Some-journals, for-instance, the *Journal of Hydraulic Engineering*, even require a-separate applications-section, for this-purpose. Authors, however, should-be conservative, e.g., never making a-declaration, of which they are *not* 100% sure, as not to-open the-door for a-negative-review, or the-eventual-rejection of their-article.

4.2.6. *The-Conclusions and Recommendations-section.*

The-conclusions is, where the-author(s) wrap-it-up, by emphasizing the-most-important-findings and their-potential-implications. It-is-important, to-remember, that this-section should *not* present any-new information. In-many-ways, the-conclusion-section is a-mirror of the-introduction (notice in Figure 5 how the-hourglass-shape becomes-broad-again at the-bottom; the-paper should-do the-same-thing). The-readers should-be brought-away from the-specific-focus of the-research, and back, to a-broad-point of view, showing, for-example, how the-findings apply, to-the world, as-a-whole. Conclusion-part should articulate the-key-message, that-has-been-discussed, in-the-manuscript, and also highlight the-new and most-original-aspects of the-study. It-should-be brief, to-the-point, and should *not* mention anything, which has-*not*-been-discussed, earlier in-the-text. Similar to-the-Abstract-part, *no*-reference should-be cited, in-this-part of the-manuscript.

It-is also-recommended, to-point-out the-limitations of the-study, and to-suggest future-angle. By identifying the-limitations, of the-research, authors demonstrate their-scientific-maturity, and emphasize the-power of generalization, of their-findings. By recommending further-studies, they show commitment to their-field, influencing other-researchers, to-explore new-aspects, of the-same-theme (Cáceres *et al.*, 2011). It-is-imperative, however, to-realize, that the-authors do-*not*-expect to-give-recommendations to ‘save-the-world’; besides, identifying weaknesses, or gaps in-the-research, is just as-important, as-offering solutions-to-problems.

4.2.7. *The-Acknowledgments-section*

Receiving a-credit, by-the-way-of acknowledgment, rather than authorship, indicates that a-person or an-organization did-*not*-have, a-*direct*-hand, in-producing the-work, in-question, but may-have-contributed in: funding, criticism, or encouragement to-the-author(s). Various-schemes exist, for classifying acknowledgments; Finkelstein (2004), for-example, gives the-following six-categories: (1) moral-support; (2) financial-support; (3) editorial-support; (4) presentational-support; (5) instrumental/technical-support; and (6) conceptual-support, or peer-interactive-communication (PIC).

Acknowledgement can-be-expressed in a: (1) *general-way*, to a-granting-agency, that supplied funds, or a-laboratory, which supplied materials and which equipment-was-used; and (2) *specific-way*, to a-person or persons, who gave the-author(s) advice, or helped-them in-data-collection or analysis, or any-other-significant-manner. In-particular, any-specific-input to the-work, should-be acknowledged – e.g. editing, proof-reading, specific-academic-advice or ideas, general-advice or ideas, such as on-structuring of the-work, assistance with collecting-data, in the-field or in a-laboratory, statistical-support, lab-technical support, support in respect of a-specific-disability, translation-services, and so-on. Any-specific-permissions the-authors were granted; e.g., for use of copyrighted-material, use of a-specific-datasets, use of a-patented process, etc. There is also a-growing-trend to-acknowledge the-contributions of the-reviewers. This-is a-rather-controversial-issue. Since acknowledgment-sections *cannot* be referenced, or listed on a-curriculum-vitae, this seems only a-means of getting the-reviewers to-agree with a-revision, and accept the-paper. And, finally, as Spence (1994) pointed-out: ‘...by all-means recognize secretaries, wives, or husbands, lovers and parents – but *not* in-the-manuscript’.

4.2.8. *The-References-section*

Organizing a-proper-reference-list is one of the-most wearisome-aspects, of finalizing a-manuscript, for-publication. One of the-essential-principles, of scientific-writing, is to-avoid plagiarism; hence, credit *must* be-given, when using another-person’s ideas, opinions, theories (also quotations or paraphrases thereof), or information, which is *not* a-common-knowledge (see more-details in Starovoytova, (2017d)) . This-is achieved by-citing, related-work, within-the-text, and by-listing all-cited-references, at the-Reference-section/list (at the-end of the-paper).

A *citation*, or a *reference*, is a-way of properly-acknowledging, where one makes-use of the-work of others. ‘Citing’ gives such-an-acknowledgement, within the-main-body of a-text, while ‘referencing’ is a-broader-term, which covers both; in-text-citations and the-more-extensive-information about one’s source-material, which should-be presented, at-the-end, in the-Reference-section. These-two-terms, alongside with ‘attribution’ are used-interchangeably. One should *not* include references, which were *not* cited. Refereed-journal-articles, research-monographs, and books, are preferred, over less-reliable-sources, such as-personal-communications, un-refereed conference-proceedings, or web-site-addresses.

The-number of references should-be reasonable (neither too-many *nor* too-few). The-use of ‘abstracts’ of conferences and congresses, and unpublished-materials, as-references, should-be avoided. Personal-communications are information, that has-been-conveyed, personally, to a-writer, such-as: emails, telephone-calls, and direct-conversations, or other-material, such as-unpublished-material or personal letters (*not* publicly-available). These-are acceptable-sources and should-be clearly-indicated, at the-point of use, in the-text; for-example, (Starovoytova, D. (2016). pers. comm. 7th August), however, they-should *not*-be included, in a-formal reference-list. Moreover, the-author supposed to ask-permission, from the-source, before citing any-personal-communications. Furthermore, all-cited-references, should-be verified (as much-as-possible), by-the-author(s), using the-original-sources.

On the-other-hand, there is *no*-need to-repeat the-same-citation, at the-end of every-sentence, or quote,

provided that *no*-other-sources was used, in that-discussion; the-author(s) should make-it-clear, to the-reader, that particular-part is *all*, based on the-same-source. One-way of making the-source clear, without repeating the-full-citation is to-use the-Latin-term '*ibid*', meaning 'the-same-place'. For-example: 'Faculty plays a crucial-role in helping students to develop academic-integrity (Starovoytova & Namango, 2016, p.59), and 'There are many-contexts, in which faculty can explicitly teach students what academic-honesty...' (*ibid*).

Besides, different-publishers require different-formats or styles, for citing a-paper, in-the-text and for-listing references. The-most-commonly-used referencing-systems are variations of the-following (Day, 1983):

Name and year system: References are-cited by their-respective-authors and the-year of publication, e.g. (Starovoytova, 2017). This-system is very-convenient, for authors, as the-citation does-*not* have to-be changed, when adding or removing references, from the-list. However, it becomes difficult to-read, when subsequently-citing many-references, in-one-single-parenthesis.

Alphabet-number system: This-system lists the-references in alphabetical-order and cites-them by-their-respective-number in parentheses or (square) brackets, e.g. 'As reported in [7], ...'. This-system is relatively-convenient, for-readers, as it-does-*not*-break the-flow of words, while-reading a-sentence with-many-citations. On-the-other-hand, the-author has-to-be-watchful on-the-references, cited in-the-text, as their-numbers may-change, when the-reference-list is updated.

Citation order system: This-system is similar to-the-alphabet-number-system, with one-major difference: the-reference-list is *not* sorted-alphabetically, but in-the-order of appearance (citation by number) in-the-text.

Name and year system of Referencing is mainly-used for Engineering-publishing, hence, more-details are in-order: (1) with several-publications of the-same-author, in the-same-year, 'a', 'b', etc. should-be-used, after the-year (example: Starovoytova 2016a; 2016b, etc.); (2) when there are 2-authors, citing in-the-text, should-be as, for-example, Starovoytova & Namango (2016), but in the-Reference section, the authors-initials should be added, for each-author, followed by essential-details on the-paper, e.g. Starovoytova, D. and Namango, S. (2016). "..."; (3) when there-are 3 or-more authors, the-citing in-the-text should-be, for-example: Starovoytova *et al.* (2016), and in-the Reference-section *all*-the-names, with initials of the-authors, should-be given; (4) 'Mc' should be alphabetized, following the-order of the-letters, *not* as if it were written out 'Mac', for-example: MacBrayne, MacKenzie, McDonald; (5) in-names, with-prefixes such as 'de', 'van', 'von', 'arab' and so-on, the-form, in which the-name is-listed by-the author concerned, should-be used, or the-journal's-directives should-be sort; and (6) so-called 'hand waving-reference' should-be avoided, for-example: do-*not*-refer to 'Madara's classic work', without specifying what Madara's work was or how it-is related, to-what is-being-reported.

Variations of the-referencing-systems, mentioned above, are-used, in most of the-common standards, such as in-the American Psychological Association (APA) Style; Chicago Style; Council of Biology Editors (CBE) Style; and Modern Language Association (MLA) Style (Gibaldi, 1995), among-others. Regardless of the-citation-style, however, there-are two-basic-rules for the-list of references: (1) every-cited (in-the-text) source must-be listed (in the-list of references) and (2) every-listed source must-be-cited. In-other-words, the-References-section and text-citations, should match, *absolutely*, e.g., the-name & year or the-number (in-the-text) connects with-the-full-source-details, in a-footnote and/or in-reference-list.

In-order for a-manuscript, to-be-accepted, for-publishing, authors, have-*no*-other-alternative, but adhering to-the-style, imposed on-them by-the-publishers. To-be on a-safe-side, therefore, the-most important-rule is, to-follow, very-closely, the-instructions, of a-particular-publishing-journal (so-called 'house style' for that-journal).

On-the-other-hand, various-computer-software-packages are available, which allow references to-be-readily-recovered, from-databases, easily-inserted, into a-document, and automatically-adjusted, whenever any-alterations are made. These are known as 'reference management' packages or 'reference managers'; examples are: *EndNote*, *Mendeley*, *Zotero*, and *RefMe*, among-others. Reference-managers store and manage bibliographic-data, and act as a-mini-database of references-used. One can retrieve comprehensive-reference-information, directly from many-online-databases, saving the-time of typing them-in, by-hand. Besides, references can-be-presented, in whichever-format is required, from a-selection of available-styles.

The-macro-issues of writing, such-as the-structure of a-scientific-paper, are universal, regardless, of the-language of expression. The-next-logical-step would-be to-describe the-micro-issues of writing (grammar and punctuations); those, however, are specific-to a-particular-language. The-following-narrative is limited to-English-language, as it-is the *de facto* language of scientific-communication.

4.3. English, as '*de facto*' language, of scientific-communication

55% of the-respondents confessed, that they are *not* very-confident, in their-ability, to-write (for scientific-papers) in-English.

Language is the-vehicle, for scholarly-communication (Jaygbay, 1998). Scientific-writing, in- English, started in the-14th-Century (Taavitsainen & Pahta, 2012), and currently English, has-become *de facto* the-language of science. To-write and publish, in-other-languages, restricts an-author's potential visibility to a-small-

fraction, in-comparison of that, when the-article is written, in-English. Almost-all scientists, whatever their-native-tongue, have *no* other-alternative, but to-learn-English, to-discover what other-scientists are doing, and to-be a-part of the-scientific-community, in-their-field. However, if English is one's-second or, even, third-language, the-writer, probably, not as-familiar, as-native-English-speakers, with the-vocabulary and expression, of the-language and, therefore, feel-hesitant about writing-freely, without assistance of proofreading-services, which, in-turn, necessitate additional-time, and expense, to the-writer, in-question. Moreover, Starovoytova & Namango (2017a) cited Vasconcelos (2009) and Roig (2008), who pointed-out, that English, as a-second-language, is a-stimulus, to-plagiarize.

On the-other-hand, English-language has variant-spellings; i.e. many-words can-be-spelled 'correctly' in more-than-one-way. Many of these-variations are due to-the-differences, between the-British and the-US-forms of spelling. Some-mixed-forms are also-used; e.g. Canadian-English, that has elements of both; the-British and the-US-styles. None of these-forms, however, can-be argued, as 'the-only-right' form. This can-cause puzzlement, especially for those-of-us, whose-first, or even-second-language of communication, is *not* English. The-best and easiest-way-to-overcome this-problem is, simply, to-follow journal's-style and Instructions to Authors.

Besides, the-English-language recognizes 3-genders: feminine, masculine, and neuter, which can-be identified by-the-choice of the-appropriate-pronoun (he, she, or it). Authors should-avoid any-gender-bias, in their-writing. Using 'he/she' or 'his/her' avoids the-gender-bias; however, that-sort of sentence-structure is tongue-tied. Using 'they' instead of 'he/she' in-such situations is now-becoming widespread, for-example: "Everybody should-be-aware of their-responsibilities".

Another-issue of importance, in scientific-writing, in-English, is the-use of jargon. *A-jargon* is 'a-mode of speech, familiar only to-a-particular-group or a specific-profession'. Each-discipline has its special 'language' and technical-terminology, that may-be-understandable to-member of that-discipline, but *not*-necessarily, to-others. In-engineering, in-particular, this is very-prevalent; for-example, Starovoytova (2015) pointed-out that TRIZ-inventor, G. Altshuller saw, that science and technology, had become a Tower of Babel. Each wrote in their-own-scientific-language, and technical-terminology, and similar-problems were-solved, with analogous-solutions, with huge-duplication of work. Authors, therefore, have-to-be careful about the-use of such-jargons, particularly, within multidisciplinary-research-framework.

The-English-language is a-universal-tool, which enables scientists, to-share-results, of their- research, with the-international-scientific-community, and hence proficiency, in-English, is paramount. Writers use different-approaches to-acquire sufficient-English-proficiency. For-example, Goryanova *et al.* (2015), in-their-study, pointed-out on an-interesting-approach used, in one-of the-National Research Universities, in-Russia, to-design and deliver a-92-hours-course on 'Writing for Publication'. The-two modules of the-course ('Structure, Content and Style of Scientific Research Articles', and 'Grammar Peculiarities of Writing Scientific Research Articles') were delivered, by an-English-native-researcher and writer, while third-module ('Coherence and Cohesion in Writing Scientific Research Articles') was offered, by a-Russian-scientist and writer. The-course, is proven-to-be-successful, for-fine-tuning, of writing-skills, and raising-awareness, on the-structure and organization, of scientific-research-articles (in the-14 covered fields), as-well-as, proper-language-use, in the-context of scientific-writing.

Readers, interested in-the-improvement, of their-English, can-refer to Word Power: English language skills, led by-qualified native-speaking English-language-teachers, and also check the-following websites: (1) www.engvid.com; (2) www.youtube.com/results?search_query=english++with+jade; and (3) www.bbc.co.uk/learningenglish, among-others.

4.4. Micro-issues of writing

4.4.1. Grammar and spelling

Scientific-writers are frequently-accused of being-pedantic about spelling, grammar, and punctuation. Their-doctrinaire, probably, justifiable, as effective-scientific-writing requires expressing one-self clearly, accurately, and precisely; to-this-end, good-grammar, proper-spelling, and appropriate-punctuation, are paramount. Besides, incorrect-grammar might lead to-the-rejection, of manuscripts, from reviewers (Pearce, 2003).

The word '*grammar*' is derived from Greek γραμματική τέχνη (*grammatikē technē*), which means 'art of letters', from γράμμα (*gramma*), 'letter', itself from γράφειν (*graphein*), 'to draw, to write' (Harper, 2010). In-linguistics, *grammar* is the-set of structural-rules, governing the-composition of clauses, phrases, and words, in any-given-natural-language. The-term refers-also to-the-study of such-rules, and this-field includes: morphology, syntax, and phonology, often-complemented-by phonetics, semantics, and pragmatics.

In-particular, *syntax* is the-technical-term, for the-rules, governing-the-way words, in any-language, are-put-together, into-sentences. Syntax is particularly-important in-English, where a-small-change in-word-order, could-completely-change the-meaning of the-sentence. For-example: 'The-doctor saw the-patient' is different-from 'The-patient saw the-doctor'. The-rules of syntax are notoriously-complex, in English-language, and hence,

are outside of the-scope, of this-concise-paper.

Spelling is important, for-exactly-the-same-reason, that grammar and punctuation, are-important. Incorrect-spelling makes for poor-communication, in-scientific-writing, as it requires a-high-degree of accuracy, to-express the-message. It also-reflects the-possible-negligence, on-the-side of the-writer(s), lowering-the-quality, of the-entire-piece of work. To-improve-clarity, conciseness, and cohesion, a-writer should: (1) Omit unnecessary-words; (2) Put actions, in-verbs (avoid nominalizations); (3) Place verbs near subjects; and (4) Put familiar-information, first (Duke Scientific Writing Resource, 2011).

Besides, to-make the-text more-organized, and hence, a-research-article more-appealing, the-text, of each-of the-discussed-above-sections, should-be-separated, in sub-sections or signposts, which can-be arbitrary, but they, *do* improve, dramatically, the-structure of a-paper. One-thing to-remember, is that sub-sections should *only* be used, when there-will-be more-than-one sub-section. On-the-other-hand, readers, generally, respond-well, when sentences have-a-varied-length and when paragraphs have-a consistent-length; the-former, however, *not* always possible.

Within-sections, each-paragraph should-also have a-well-organized-flow. They-should have a-key-sentence, supporting-sentences, and a-concluding, or summary-sentence (Gray, 2003). On the-other-hand, paragraphs should-be-interconnected, with good-transition-statements. Conjunctive-adverbs, such-as: therefore, hence, thus, consequently, and however, among-others, are worthy-tools, to-force a-conclusion to-develop. By-following this-format, paragraphs will-be-clear, convincing, and easy to-organize.

Moreover, sentences in-academic-books and journals, can-be quite-complex, made-up-of, one or more, subordinate-clauses, joined in-various-ways, including conjunctions or relative-pronouns, or linked-through-punctuation. The-basic-rule remains the-same, however: one-complete-idea, one-complete sentence.

Many-books, on English-style and grammar-checks, in word-processing-software, recommend the-use of active-voice, because passive-voice, possibly, will-make the-text monotonous and boring, add words, reduce impact, and, even, cause confusion. When writing the-article, the-active-voice (he-said, we-derive, they-found) is-preferred, to the-passive-voice (was-communicated by, is-derived as-follows, was-found by). In-scientific-writing, the-passive-voice is, often, more-convenient and sometimes, is even, unavoidable. Wherever the-active-voice is used, however, the-sentences appear stronger, more-convincing, and much-clear. Moreover, Webb (2001), also-points-out, on another-important-factor, to-consider, when writing. The-factor is the-preference, for-writing, in the-first-person (*personalized*), third-person (*distant*) or passive-voice (*assumed*) perspective.

Furthermore, Straus (2008), in his-study, pointed-out, that some-scientific-writers use unnecessarily-complicated-way of expression, by so-called *verbosity* (a-form of wordiness, with a-lot-of words, usually, to-make-it-sound more-important and extra-intelligent). The-primary-purpose of a-scientific paper, however, is to-inform readers, and *not* to-impress-them, with the-writer's affluent-vocabulary, and smooth-lexicon-skills.

4.4.2. Punctuations

Writing looks, a-lot, like-having a-blindfold, over a-writer's-eyes, with no-ability, for them, to-see, exactly, whom they-are talking-to. Separated from the-audience, in-place and in-time, writers *cannot*-see their audience, to-test how their-communication is-being-received, or if there-will-be some-kind of response. The-words on-the-page are silent, so a-writer must-use words-choice and punctuation, to-communicate the-tone of a-message (Irvin, 2010).

The 14-punctuation-marks in English-language (period, question-mark, exclamation-point, comma, semicolon, colon, dash, hyphen, parentheses, brackets, braces, apostrophe, quotation-marks, and ellipses) may connect, divide, enclose, indicate omissions, and organize sentences; most of them can-perform more- than-one-function. The-use of punctuation is determined by-grammatical-conventions, and the-writer's intention. Some-writers do, and, some do-*not* provide any-attention, and do-*not* give, any-weight to- punctuations. On the-other-hand, these of us who do, strongly-believe, that punctuation, undeniably, substitutes for the-writer's facial-expressions.

One-particular-type of punctuation-marks, a-*hyphen*, deserves a-more-closer-look. A-reader of this-paper, probably, already-observed, that hyphen is used-substantially, by-the-authors. Although the-hyphen functions primarily as-a-spelling-device, it-also functions to-link and to-separate words. The-most-common-use of the-hyphen is to-join compound-words (Examples: able-bodied, self-contained, sister-in-law); Occasionally a-hyphen (or dash) replaces the-preposition to (0–100 for: from 0 to 100); A-hyphen is used to-form compound-numbers from twenty-one to ninety-nine and fractions, when written-out (e.g., twenty-seven, one-tenth); Hyphens also-used with modifiers, where: (1) a-hyphen used to-join words, used as a-single-adjective (e.g., four-year-old-tree [NOT four-years old-tree] or four-year-old-trees); (2) Two-word and three-word-unit modifiers, that express a-single-thought, are hyphenated, when they-precede a-noun (an out-of-date-car, a clear-cut-decision); (3) If each of the-words can modify the-noun, without the-aid of the-other-modifying-word or words, a hyphen is, usually, *not* used (e.g., a new digital computer—*no* hyphen); (4) if the-first-word is an-adverb, ending in *-ly*, a-hyphen should *not* be-used (e.g., a hardly used computer; a highly desirable event); and (5) with the-prefixes *ex-*, *self-*, and *all-*; with the suffix *elect-*; and with all-prefixes, before a-proper-noun or proper-adjective (e.g.,

president-elect).

It-is-worth, to-emphasize, however, that hyphens can drastically-change the-meaning of the-sentence; thus, writers should use them accordingly--with caution.

On-the-other-hand, each-word, in a-sentence, can-be defined, by the-role, it-plays. The-different -roles are known as 'parts-of-speech'. Incorrect-use of speech-marks, are still, one of the most-misused punctuation-marks. In-most-disciplines, speech-marks should *only* be-used, when something is-being *said*, *not* when-something has-been-expressed, in-writing (Straus, 2008). The-majority of quotations in academic-work will, therefore, require inverted-commas, and not speech-marks; though the-reader(s) should-check, the-conventions, of their-discipline, to-confirm this. Moreover, according to University of Essex (2008):

The difference between speech marks (sometimes called "double inverted commas") and inverted commas ('single inverted commas') is very-simple. One-way to-distinguish-them is to remember, that speech-requires the-physical-presence of two-people, a-speaker and a-listener, hence it needs double-inverted-commas: "speech-marks". When something is being-referenced from a-book, however, only one-person is present (the-reader), hence 'single inverted commas' should-be-used.

This-rule, however, is *not* very-commonly, applied, by the-authors, probably, because of lack of awareness, and hence, understanding; moreover, many of widely-accepted Reference-styles, require, that the-titles of articles, published in-refereed-journals, should-be put in "speech-marks", which is, according to-proper- English, is incorrect.

Writers, wanted to-cross-check the-correctness of English-language, in-their-scientific-manuscript, can go to: www.whitesmoke.com; or www.reverso.net/spell-checker/english-spelling-grammar.

Besides, knowing *only* macro- and micro-elements of scientific-writing (presented in two previous-sections) is *not* sufficient, to become an-effective-writer. The-following-narrative, hence, provides some-additional-angles, on the-subject-matter.

4. 5. Good research-paper and competent-scientific-writing.

55% of the-subject-sample revealed, that they have a-rather-vague-grasp, on what *really* constitutes a good-research-paper, and a-fine-scientific-writing. Both-concepts, on-the-other-hand, are related, as good-research-paper is a-product of ethical-research, and fine-scientific-writing; both, incorporating aspects of quality, and quality-management.

Peer-review is the-main-mechanism, of scientific-quality-management, where submitted-papers are reviewed, by-peers-experts, prior to-publication. With-regard to the-writing-style of the-manuscript, the-following-characteristics are-relevant to-reviewers, and might-influence their-recommended-decision: (1) clarity of writing: readability, organization, conciseness, and technical-quality, of the-paper; (2) suitable- title and abstract; (3) appropriate-use, of well-designed-figures, and accurate-tables; (4) sound-conclusion and discussion; and (5) length of the-paper, relative to-its-usefulness. Additional-factors might-also increase the-likelihood of a-manuscript-acceptance (Yuksel, 2003), such-as: (1) strong-reputation of the-author; (2) successful-test of the-proposed-theory; and (3) unusual-content, from that usually-published, in-the-journal.

To-produce a-well-written-scientific-paper, scientific-writing must-be precise; which requires an-advanced-level of detail. Meticulous-description of objects, forces, methodology, etc., can easily-lead to rather-complex-sentences, expressing too-many-ideas, without a-break-point, that-is-difficult to-follow and, is-likely, to-be confusing. To-avoid *very*-long-sentences, it-is advisable 'to-cut the-snake', by-splitting long-sentences into, logically-connected, shorter-ones. On the-other-hand, sentences, that are too-short, and poorly-connected, can-be bothersome, to-read. As a-general-rule, there should-be *no* more-than 20-25 words, in any one-sentence. Another-postulate is that, there-should-be *one*-message in a-sentence, *not* more, *not* less. Furthermore, signaling and linking-language should-be used, to-enable smooth-transition, between sentences and paragraphs. Besides, good-scientific-writing is: (1) *impartial* - it avoids making assumptions (Everyone knows that ...) and unproven statements (It can never-be-achieved ...). It presents how and where data were-collected and supports its-conclusions with evidence; and (2) *accurate* - it-avoids vague and ambiguous-language, such-as: about, approximately, and almost (Eunson, 2009).

In-addition, scientific-writers should-*not* be afraid to-be-critical, of other people's works and ideas. Healthy and constructive-criticism are 'part and parcel' of everyday-academic-life; hence the-critical-point of view, should-come-across, to-the-reader, as a-justified and well-articulated-case, and *not* simply, as an-opinion. Effective and mature-scientific-writing is, essentially, *persuasive* or *argumentative-writing*, that follows the-rules of formal-rhetoric (which, many of us, probably, have-never-been-taught). Persuasive- writing is where one has to-write to-prove a-point, to-change someone's opinion, or to-clarify an-issue. Generally, a-writer is arguing a-point, with the-goal of convincing-someone that their-position is correct. Rather than a-shouting-match between-two-disagreeing-sides, argument instead means a-carefully-arranged and supported-presentation of a-viewpoint (Thaiss & Zawacki, 2006).

Moreover, being-critical is *not*-just about tearing-apart, the-work of others. Adopting a-critical-stance, to a-

text, means paying-close-attention to-the-text, in-terms of definitions, ideas, assumptions, and findings, or arguments. It-is focused-questioning and interrogation, which-is *respectful* of what-others-have-done and contributed (Kamler & Thomson, 2006). Besides, each-one of us, as-writers, approaches a-subject-matter, from a-distinctive-individual-perspective, reflecting the-educational- background, level of intelligence, individuality, philosophical-values, or life-experiences. There-is *no* absolute-expert-authority, a-researcher or an-intellectual; whose-input is so-perfect, accurate, complete, or indisputable, that the-rest of us, can no-longer give-opinions, on the-topic. In-order-to-construct a-strong and logical-argument, Leki (1998), points-out on-the-importance to-avoid these-widespread-mistakes, such-as: (1) Exaggeration and un-substantiated-generalizations; (2) Over-simplification, of your-argument, or of the-opposing-argument; (3) Logical-flaws; (4) Appeals to-inappropriate-authorities; (5) Emotionally charged-words; and (6) Out-of-date facts.

As a-skill, writing is a-complex-task, in-itself, but it-is-made all-the-more-challenging, due to-the-specialized-nature, of academic-discourse. Academic-writing differs from other-types of writing, such-as journalistic or creative-writing. Both-forms of writing (scientific-papers and popular-science articles), however, must-fulfill the, so-called, 'ABC' of communication (accuracy, brevity, and clarity). In-most-forms, of academic-writing, a-detached and objective-approach, are required.

In-particular, although engineering-education tends to-be rather-explicit, in-terms of expressing technical-ideas, many-process-aspects of education and research, tend to-be-implicit. This-is predominantly so, with-regards to scientific-engineering-writing (Rosales *et al.*, 2012). Writing, in-engineering, is an-important-part of research, and thus writing is, first of all, thinking, as according to Barzun & Graff (1977) 'Writing requires that we create some-order in our-thoughts and project it outside, where everybody can see it'. Writing-should-be also a-creative-process; and *not* just dry-technical-reporting, but a-story telling (Schimel, 2012; Anderson, 2011; Montgomery, 2003), connecting relevant-information, in a-logical- narrative. Good-writing-style is also, naturally, more-understandable, and enjoyable, to-read.

It-is also-recommended, to-avoid 'filling the-River-Nile in a-small-bowl' by getting too-wordy, or with over-statements, as, in-reality, only-a-few-studies can-make *real*-discoveries and innovations, which can-change the-course of engineering, or any-other-discipline, for that-matter. According to an-article by Starovoytova *et al.* (2015), the-most-interesting-concept of the Theory of Inventive Problem Solution (TRIZ), is that 99.7% of inventions utilize already-known solution-principle, and considered-to-be mere-improvements, to-existing-systems; *only* less than 0.3% is truly-pioneering, ground-breaking inventions, or scientific-discoveries.

Another-important-element, of-scientific-writing, is uniqueness, which manifests in-the writing style, and personal-voice, of a-writer. *Voice* is a-difficult-concept to-define, but developing a-voice is an-important-aspect, of becoming an-effective-writer. Every-piece of scientific-writing has a-voice; voice refers to-the-way one-reveals-themselves, to-others, when one writes (Richards & Miller, 2005). According to Mulvaney & Jolliffe (2005), voice may-be-thought of as:

a combination of the-personality of the-writer, that comes-through, to-the-reader; the perspective the-writer-assumes, often influenced by the-audience being addressed, as-well-as by the purpose and previous-level of knowledge ... and the-tone of the-passage. For a 'greenhorn'-writer, however, it-can be difficult, to-find and to-express their-voice.

It-takes self-confidence; continuous and regular-writing-practice; time; patience; great-attention to-details; and numerous-revisions, for a-writer, to-develop a-distinct and recognizable-voice, in-scientific community.

On-the-other-hand, the-required-qualities, of good-research-paper, alongside its-presentation, are as-follows: (Lester & Lester, 2015; Eunson, 2009; Fitzmaurice & O'Farrell, 2009; Finkelstein, 2004; Anderson, 2003; Derntl, 2003): (1) *Rigorous*: Research is a-laborious-hard-work, and it-requires great-patience and control. Research-paper requires rigorousness, to-maintain its-quality; (2) *Controlled*: it-should-have to-be-controlled or measured. Everything, that added, in a-research-paper, is pre-planned and *cannot* happen, just by-chance; (3) *Accurate*: Accuracy is imperative, because without it, a-research-paper *cannot* be-valid and generalize-able. In-every-step of the-research, the-researcher has to-cross-check the-accuracy; (4) *Clear*: A-research-paper should-have to-be-free of ambiguities and it-should-have great-clarity. Clarity is one of the-main-essences of research; in its absence, the research-paper is worthless; (5) *Concise*: Writers should-try-their-best, to-add *only* relevant, original and interesting-content, to-make the-paper distinctive and appealing; (6) *Valid*: The-actual-strength of a-research-paper is its-validity. A-valid-research is applicable, to-various-situations, in-general, or it-can-be-applied to a-specific-situation, people, or society; (7) *Verifiable*: The-data, in a-research-paper, should have-to-be verifiable and provable; there should-be *no* loopholes, in the-information; (8) *Sequential*: A-research-paper should-be-written in a-logical-manner; (9) *Precise*: A-research-paper should-have-completeness, and it-should-contain *detailed* investigation, of the-research-topic; (10) *Original*: A-research-paper should-present original-content, supplemented by properly-referenced-information, from other-sources; (11) *Coherent*: Every-part of a-research-paper should-be-linked, to-make a-whole-piece; (12) *Generalize-able*: The research-paper findings should-be generalize-able and the-findings should-be-applicable, to the-society, in one-way, or the-other; (13) *Specific*: Research-topic is generally-based on some-problem or a-relationship, between variables; this-problem

should-be specifically-stated. For-example “The-impact of gender on-graduation outcomes”, in-this-statement the-variables are clearly-defined. There-could-be further segregation of the-variables, but it-should be-stated-specifically; (14) *Measurable*: Certain-research-analysis instruments, such SPSS-tool, or some-physical-instruments, like spectrophotometer etc., or data-collection-tools (based on the-research-requirements), such-as questionnaires, annual-reports, etc., should be-used; (15) *Attainable*: The-data, required for the-research, should-be-attainable and available; (16) *Realistic*: The-analysis and results must-be-realistic; they should *not* be-manipulated. The-proposed-hypothesis, for the-research, would-be either accepted or rejected; and (17) *Properly-Formatted*: There-is a-certain-format to-follow, usually, so-called journal’s ‘house-style’ (mentioned earlier, in this-paper).

In-addition, they say, that “*no-matter how-many-panels a-person stack on top of each-other, they still need nails, to-prevent the-pile, from falling-apart*”. The-same-logic applies to a-scientific-writing. Tiny-things, such-as flow, structure, voice, and word-choice, will-connect the-story, clean and polish the-paper, and make it enjoyable, to-read (Turbek *et al.*, 2016). Besides, scientific-papers *cannot* just-happen, unless they-are given a-priority, in-life. To-achieve-this, it-is important, to-develop good-time-management-skills, that enable a-writer, to-distinguish between, the-urgent and the-important issues, in one’s working-day (Covey, 1994). Furthermore, it-is paramount, for authors, avoiding any ‘scientific-misconduct’, to-keep-away from rejections, retractions, loss of job; revoked awards and degrees; lawsuits, questioned-integrity; loss of grant-money, or even jeopardizing their-reputation and destroying their-career. Interested-readers can refer to Starovoytova & Namango (2017a); and Starovoytova & Namango (2017b), for more-details on scientific-misconduct.

Furthermore, many-academic-researchers, do, constantly-work, on refining their-writing-skills, throughout-their-careers. Even for professional-scientists and researchers, there is always room for improvement, to-write more-effectively (Turbek *et al.*, 2016).

Focusing on the-strategies-for-success, laid-out, in this-paper, will *not* only improve writing-skills, for writers at *any*-stage of their-career, but-also make the-scientific-writing-process easier, more-efficient and enjoyable. However, readers should-keep-in-mind that there is *no* magic-recipe, to-write a-scientific-paper, and as one gains-experience with scientific-writing, one will-begin to-find one’s-own-voice.

As a-final-point, the-author, wishes to-quote Albert Einstein, who once-said ‘A person who has never made a mistake has never tried anything new’. On-the-other-hand, Benner (2001) in-his-study, pointed-out on five-levels of development, in scientific-writing: (1) Novice; (2) Advanced-Beginner; (3) Competent; (4) Proficient; and (5) Expert. In-the-same-spirit, to-become an-effective and successful writer--an-expert, authors should-strive reading and writing, daily. Research has-shown that those-writers, who write 30minutes, every-day, are 5 to 10-times are more-productive, than those, who-wait, for extended periods of time, in-which to-write (Gray, 2003). Besides, Grympna (2007) once said ‘... the best writing comes from an internal need to write rather than simply from an external need to publish’. Therefore, academicians should-write-often and write freely, make-their-mistakes, learn, from-those-mistakes, gain-experience, and hopefully, eventually, become original, interesting, and successful-writers.

5. Conclusions

This-study revealed, that the-respondents have experienced difficulties, in-scientific-writing and publishing; in-particular, in-the-following-areas: (1) structuring of a-scientific-paper; (2) writing particular-sections of a scientific-paper; (3) rejections and how to-deal with them; and (4) English-language of scientific-writing.

It-is *not* a-secret, that everything-is-simple and straightforward, when one knows how-to-do-it; the-skill of academic-writing is *not* an-exception. Successful-writing is all-about precise, suitable, logical and recognizable-expression, of one’s-thinking. Some-academicians, however, perceive scientific-writing as a-distinct, un-natural, and eccentric-language. To-demystify this-misconception, the-author trusts, that this-article proves practical and valuable, for-academic-fraternity, in future-writing, for *any*-scientific journal, by, hopefully, easing the-transition, when facing daunting-writing-challenges. Besides, effective scientific-writing should-be cultivated at an-early-stage of the-career. This-work, therefore, should-be particularly-useful, for-ambitious-beginners, seeking-to-join the-publishing scientific-community. Nevertheless, it-is, expectantly, also-useful, for-writers, at-*all*-stages in-their-education and careers, including, those-scientific-writers, working for industry and governmental-institutions.

To-become a-successful-writer, authors, should-strive to-demonstrate excellence, comprehensive understanding of the-topic, insightful-analysis, that leads to a-compelling-argument and signifying original or independent-thinking, with-time, trained to-manifest, as a-distinct-voice. Moreover, good-time management-skills, ethical-values, and complete-dedication, are paramount. Studies, conducted with scientific-correctness, and reported, with quality, logically, have-better-chances, to-be-published and cited, in-high impact-journals, giving recognition and visibility, *not* only to-authors, but also to-their-institutions, and effectively-contributing to the-overall-development of Science and Engineering.

The-scope of this-article covers *only* the-basics of research-writing; advanced-aspects can-be accessed, for-

example, via the-ICMJE-website (www.icmje.org).

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