Blunder at the Oscar awards ceremony

It was the greatest mistake in Academy Awards history. *Moonlight* . . . won over La La Land . . . but Moonlight's win was overshadowed by a massive blunder which saw Faye Dunaway announce La La Land as the Best Picture.



"MOONLIGHT"

ADELE ROMANSKI, DEDE GARDNER AND JEREMY KLEINER, PRODUCERS

Best Picture

Before: What was wrong

- Topped by Oscars logo: waste of space.
- The winner listed below, in same size and weight as a long list of names
- The category, important piece of information, in tiny type at the bottom. You'd probably have to squint to see this.

BEST PICTURE

"MOONLIGHT"

Adele Romanski, Dede Gardner and Jeremy Kleiner, Producers



After: what was changed

- Category at the top, in large type, to assures the presenter about the correct card, but not bold
- Winner's name, bolder than anything else on the card
- Names underneath not in capitals
- Oscars logo to the bottom and smaller

Before

Susto et Esentirio

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Susto et Esembli

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After

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ter is a major resource in the fast urbanizing world. lowering the emissions of greenhouse gases (GHGs ers. However, most studies so far have considered th chain in isolation (and) lacked system approach that can is paper presents the energy and carbon footprint of v ludes wastewater transport and treatment. Total ener

profile constitute low-cost and easy-to-imp

ablishment and are popular among farmers

Tabatabaie, 2003; Dong et al. 2010).

were filled with soil (Calcic Cambisol, FAO-UNESCO, 1977) from packed to a bulk density of approximately 1.2 g/cm³. The soil had to

nd field capacity (FC) was 22%.

Besides a relatively persistent also show high host specificity up to

lize better than other networks (Lin et al., 1996; Gao and Er, 2005; Guo an Only a few studies have taken into account environmental variables in sof marine fish. Efforts were made by different researchers to implement ecasting the marine fish catch with environmental variables (Georgakara

van et al., 2015; Yadav et al., 2016. The season-wise landing of tota

Designing effective documents

- What is an effectively designed document
- How to choose a font
- How to format a paragraph
- How to choose page size and margins
- How to recognize and practise good design

An effectively designed document

- Attractive and informative cover
- Info on source, audience, purpose
- Looks match purpose and audience
- Quick overview
- Relative importance of different 'layers' of content
- 'Physically fit' for intended use

From font to a bound document

- Letters: font (typeface)
- Words, spacing between words
- Lines: length, line endings
- Paragraphs: line spacing, para markers
- Headings: hierarchy (levels of headings)
- Pages: size, margins
- Binding: clips, spiral, saddle, etc.

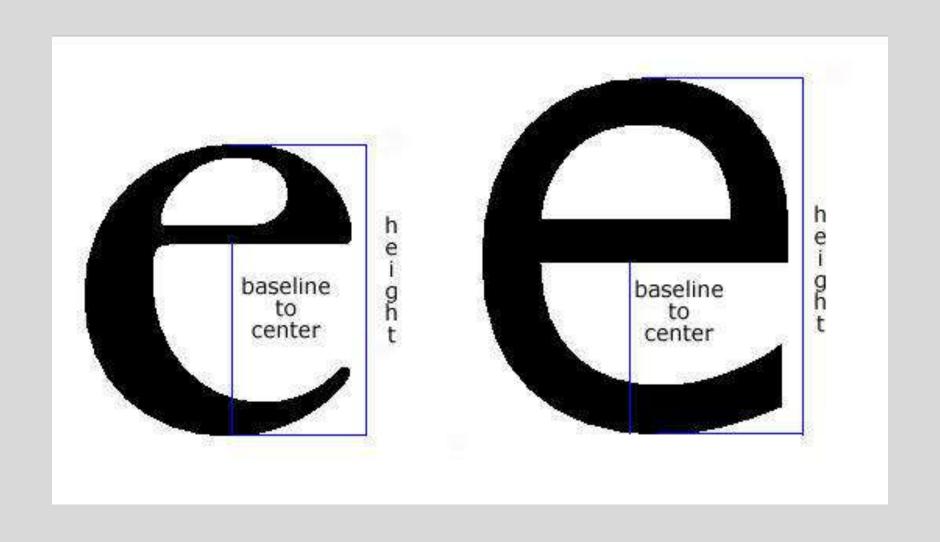
Examples of research, 1

- Characters shown in random sequence
- Twenty typefaces, 47 characters:

$$a-z$$
, $0-9$, $\div = + ? \% \pm \$ \# @ \& !$

- Each character for 34 ms at 1.5 seconds
- Scored for accuracy
- Small c and e: Garamond, 10% correct; Verdana, 100% correct

Legibility of small C and e



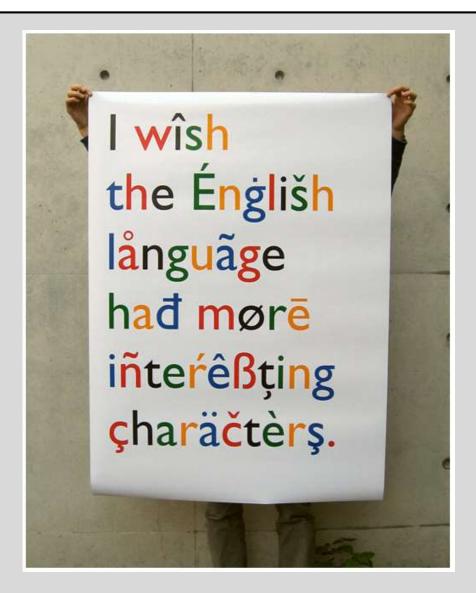
Choosing a font, 1

- Required characters and symbols available
- Legible at small sizes
- Clearly distinguishable characters
- Easy availability on most devices and systems

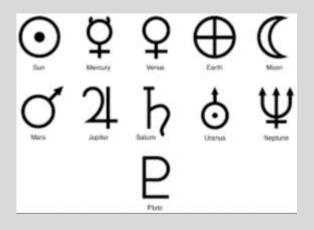
Choosing a font, 2

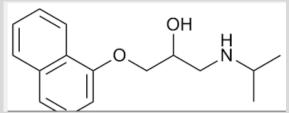
- Appropriate 'atmosphere' value: formal, informal, technical, elegant, neutral, funky, . . .
- Suitable for monitors, small devices, MICR, OCR, etc.

Required characters, 1



Required characters, 2





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8	7
	_
Ď	J

Αα	alpha	Nν	nu
Вβ	beta	Ξξ	ksi
Γγ	gamma	00	omicron
Δδ	delta	Ππ	pi
Εε	epsilon	Ρρ	rho
Ζζ	zeta	Σ σς	sigma
Нη	eta	Ττ	tau
Θθ	theta	Yυ	upsilon
Iι	iota	Φφ	phi
$K \kappa$	kappa	Xχ	chi
Λλ	lambda	ΨΨ	psi
$M\mu$	mu	$\Omega \omega$	omega

University
Houna T
We, the CHANCELLOR, the VICE - CHANCELLOR and the MEMBERS of the EXECUTIVE COUNCIL, on the recommendation of the SENATE of the UNIVERSITY of POONA certify that
of B.J. Medical College, Pilite having been examined for the Degree of
Bachelor of Medicine & Bachelor of Surgery
in
8 mpte
VICE-CHANCELLOR.

Black letter or Fraktur

ABCDEFGHIKLM NONGRUNMX 到31234567890 abedefghijklmnopgr lkstunmenz

The sun is hot,
the water's cool.
Won't you join us
as we party in our pool?

It's my Sweet 16! Hope you join us!

On	Descri
From to	Love
At	Sam

Comic Sans





Font for CVs: will you get a call?

- Applicants more likely to be called for interview if CVs (résumés) are in appropriate typeface.
- http://usabilitynews.org/does-thetypeface-of-a-resume-impact-ourperception-of-the-applicant/

MICR (magnetic ink character recognition)

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ABCDEFGHIJKLM
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OCR (optical character recognition)

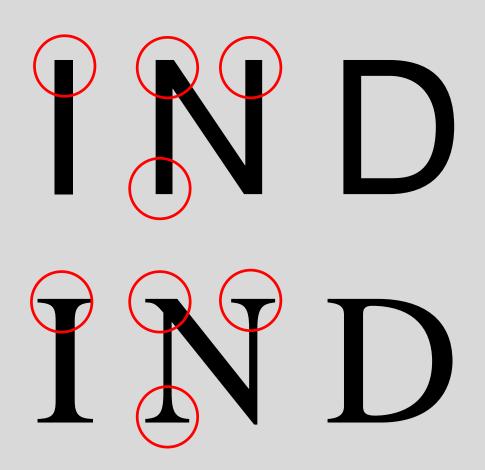
OCR-A

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0 CR - B

ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz 1234567890

Typefaces with and without serifs



Apex of capital A



Serif or cusp on left.



Serif or cusp on right.



Serifs both sides.



No serifs or cusps.

Lowercase (small) g



Single-storey (with or without loop).



Double-storey (with or without gap).

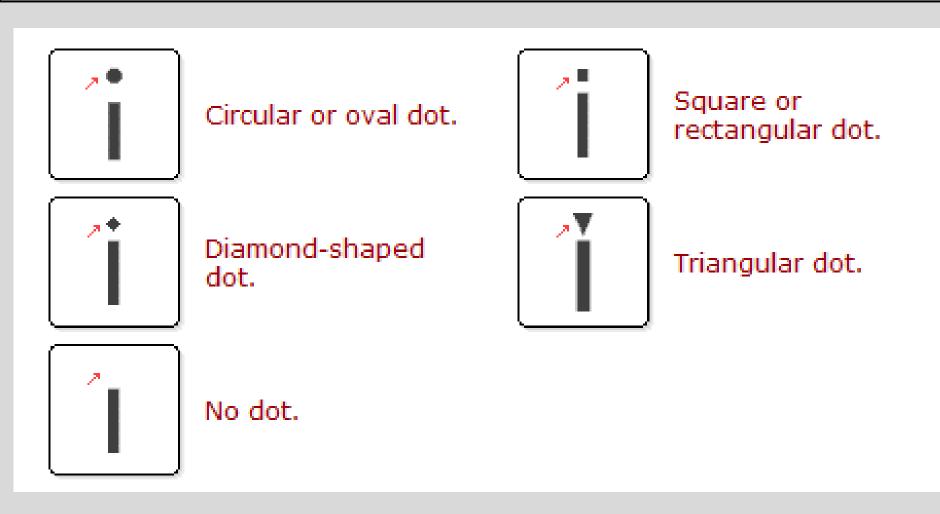


Gap.



No gap.

Dot on small i and j



Times New Rom and Times-Roman

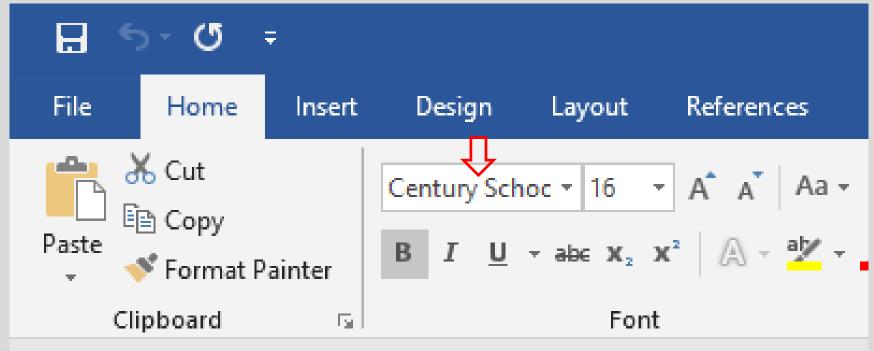
EDTA-extractable	EDTA
Easily reducible Mn	ERMn
Carbonate	CA
Times-Roman Organic matter	OM

Times New Rom

EDTA-extractable	EDTA
Easily reducible Mn	<u>ERMn</u>
Carbonate	CA
Organic matter	OM

Font name in MS Word may mislead





Adjust line length

- Lines too long: skipped or read twice
- Lines too short: tired eyes because of constant focusing and re-focusing
- Optimum length: 65 characters including spaces between words
 (JAIISH lines are 50 characters long)
- Line length: margins and font size

Justified lines = variable word spacing

At the very back of the eye is the retina, which is the image-detecting zone. If you look at the retina under a microscope, there is a tangle of cells seemingly forming a jumbled mass that looks a little like a net—hence the name retina, from the Latin rete for 'net'. These cells in the retina respond to changes of light.

Left-justified lines = uniform word spacing

At the very back of the eye is the retina, which is the image-detecting zone. If you look at the retina under a microscope, there is a tangle of cells seemingly forming a jumbled mass that looks a little like a net—hence the name retina, from the Latin rete for 'net'. These cells in the retina respond to changes of light.

Uneven spacing between letters

When students 'learn to read' (Extensive Reading), they are practicing the skill of reading by reading for information – reading a story book for example with the aim of enjoying the reading without consciously knowing they are learning. The aim is to build reading fluency - not necessarily to learn new things (although they may learn some), and to deepen their knowledge of already met language items and to get a better sense of how these fit together communicatively. This allows them to process language faster and improves comprehension and enjoyment. Students can also 'learn to read' by building their set of reading skills and strategies and by doing speed reading activities designed to improve comprehension speed and overall fluency.

Indents: first-line and hanging

The sun was up so high w judged it was after eight o'clock grass and the cool shade think and feeling rested and ruther o satisfied. I could see the sun or

This paragraph is formatted using a hanging indent. Hanging indents are not standard in documents such as business letters, but you may see examples of the hanging indent on web pages, newsletters, PowerPoint presentations, etc.

Extra space between paragraphs

because the two disagreed on a crucially important matter - Golgi remained convinced that Cajal was wrong to reject the reticular theory. It was of course Golgi who was wrong and fundamentally so. Other questions over Golgi's interpretations raised serious doubts in the minds of some of the scientists advising the Nobel Council as to the appropriateness of his nomination for the prize. But whatever the merits of the case for a shared prize, 1906 marked the beginning of the modern era in the neurosciences and it was the first of a series of Nobel Prizes to be awarded to neuroscientists over subsequent decades.

Cajal could not have anticipated the extraordinary advances in brain science that were about to be made. His recognition of the neurons as polarized units of information transmission was a defining moment in neuroscience. But at the start of the 20th century many questions about precisely how and in what form neurons signal information in the brain remained unanswered. By the middle of the 20th century, neuroscience had become the fastest growing discipline in the history of scientific endeavour and by the end of that century a more or less complete understanding, in exquisite molecular detail, of how neurons generate electrical and chemical signals would be achieved.

In this very short history of man's discovery of the workings of the brain I cannot avoid reference to the discredited pseudo-science of phrenology, a theory developed by the idiosyncratic Viennese physician Franz Joseph Gall (1758-1828). Gall believed that the brain is the organ of the mind but he went much further and postulated that different distinct faculties of the mind, innate attributes of personality, and intellectual ability, are located in different sites in the brain. Gall reasoned that different individuals will have these innate faculties and that the degree of their development would be reflected in the size of the surface region of the brain that housed that particular faculty. These ideas have a very modern ring to them, but Gall thought that the skull would take the shape of the brain's relief and therefore that the bumps on the

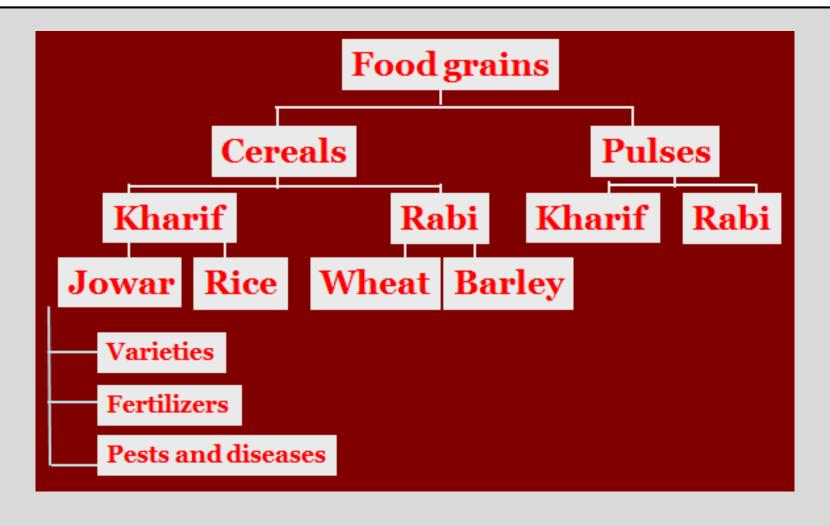
Lines too close

"... This is a book about writing clearly. I wish I could be short and simple like some others more widely known, but I want to do more than just urge writers to 'Omit Needless Words' or 'Be clear.' Telling me to 'Be clear' is like telling me to 'Hit the ball squarely.' I know that. 'What I don't know is how to do it. To explain how to write clearly, I have to go beyond platitudes."

Lines well-spaced

"But I want to do more than just help you write clearly. I also want you to understand this matter—to understand why some prose seems clear, other prose not, and why two readers might disagree about it; why a passive verb can be a better choice than an active verb; why so many truisms about style are either incomplete or wrong."

Hierarchy of headings



Hierarchy of headings

12.5 Introduction, Invasiveness and Impacts: The Example of Two Widespread Invasive Species

In this section, the invasion history, invasiveness and impacts of IAPs in India's PAs is illustrated by using examples of two widespread invasive plant species, L. camara and P. juliflora.

12.5.1 Case Study 1: Lantana camara

12.5.1.1 Introduction and Spread

The European 'plant hunters' of the seventeenth and eighteenth centuries brought back a number of botanically and horticulturally interesting plants from their voyages and introduced them to botanical gardens across Europe, from where



MICROBIAL CONTAMINANTS IN DRINKING WATER

1.1 INTRODUCTION

In water treatment plants, the goal is to produce pathogen- and parasite-free drinking water, not necessarily sterile water. There are, however, several sources of contamination in a potable water system (Percival et al., 2000):

- . Drinking water source (see Chapter 2).
- · Inadequate treatment in the water treatment plant.
- Water distribution system (WDS): Treated water quality may deteriorate in the distribution system. Pathogens and parasites may be introduced into treated water through cracks in the water pipes, back-siphonage or cross-contamination.
- . Biofilm development which may after water quality.

This chapter surveys the major microbial pathogens and paresites which may contaminate drinking water.

1.2 TRANSMISSION ROUTES OF PATHOGENS AND PARASITES

Transmission involves the transport of an infectious agent from the reservoir to a bost. It is the most important link in the chain of infection. Pathogens can be transmitted from the reservoir to a susceptible host by various routes. The transmission pathways of water-related pathogens are summarized in Figure 1.1 (WHO, 2011c).

1.2.1 Person-to-Person Transmission

The most common route of transmission of infectious agents is from person to person. Examples of direct contact transmission are the sexually transmitted diseases such

Microbiology of Drinking Water Production and Distribution, First Edition, Gabriel Bitton, © 2014 John Wiley & Sons, Inc. Published 2014 by John Wiley & Sons, Inc.

1.3.1.1 Vibrio cholerae. Vibrio cholerae is a gram-negative, coma-shaped with a single polar flagellum, facultatively anaerobic bacterium which is a member of the aquatic microbial community and causes cholera, an endemic disease prevailing in Asia (e.g., Bangladesh) and other parts of the globe. This pathogen releases an enterotoxin that causes a mild to profuse diarrhea, vomiting, and a very rapid loss of fluids and electrolytes, resulting in the patient death relatively in a short period of time if not properly treated. Cholera cases are estimated at 3-5 million, resulting in 100,000-120,000 deaths annually mostly in developing countries like Asia, Africa, and Latin America (WHO, 2011a). There are approximately 200 known serogroups of Vibrio cholerae, and only serogroups O1 and O139 are known to cause disease outbreaks (Huk et al., 2002). This pathogen is transmitted mainly via contaminated food and water. Vibrio cholerae was detected in contaminated food and drinking water, using immunological or molecular techniques. In aquatic environments, this pathogen generally attaches to solids and plankton such as zooplankton, cyanobacteria, and algae and persists under the viable but nonculturable (VBNC) state (Brayton et al., 1987; Huk et al., 1990).

1.3.1.2 Salmonella. More than 2000 serotypes of Salmonellae are encountered in the environment. An estimated 2–4 million human Salmonella infections occur each year in the United States (Feachem et al., 1983). Salmonella species are the cause of typhoid and paratyphoid fevers and gastroenteritis. Salmonella typhi, the etiological agent of typhoid fever, produces an endotoxin that causes fever, nausea, and diarrhea lasting 3–5 days, and, in severe cases, may be fatal if not properly treated with antibiotics. Salmonella is transmitted via contaminated food (e.g., chicken, milk, and eggs) or drinking water. Typhoidal Salmonella species (e.g., S. typhi, S. paratyphi) are associated with waterborne transmission whereas the nontyphoidal species (e.g., S. typhimurium) are associated with person-to-person contact and foodborne transmission (WHO, 2011c).

Chapter 1

Methods for Isolation and Cultivation of Filamentous Fungi

Helena Nevalainen, Liisa Kautto, and Junior Te'o

Abstract

Filamentous fungi are important organisms for basic discovery, industry, and human health. Their natural growth environments are extremely variable, a fact reflected by the numerous methods developed for their inolation and cultivation. Fungal culture in the laboratory is unadly carried out on agar plates, shake flasks, and bench top formenters starting with an inoculum that typically features fungal spores. Here we discuss the most popular methods for the inolation and cultivation of filamentous fungi for various purposes with the emphasis on custome production and molecular microbiology.

Key words Filamentous fungi, Plate cultures, Liquid cultures, Fermentation

1 Introduction

Filamentous fungi are a diverse group of eukaryotic organisms with one common feature, that is, their nutrition. Fungi are beterotrophic (chemo-organo-hererotrophs) in nature which means that they are not capable of photosynthesis and thus require organic matter for growth and energy formation [1]. Fungi can live as saprophytes on dead plants and animals or their wastes or parasites assimilating tissues of living plants and animals. A typical fungal life cycle features formation of threadlike vegetative hyphae which form a mycelium, a three-dimensional structure of hyphae capable of effective assimilation of nutrients and aggressive growth. Hyphaeemerge from germinating spores (conidia) that may be uni- or multinucleate, haploid or diploid. Fungi are typically isolated by plating a sample (e.g., soil, organic matter, liquids) on a Petri dish containing a rich medium such as malt extract agar and potato destrose agar (PDA) supporting the growth of a variety of fungi. In addition to the nutrients available, the main external factors affecting the fungal growth include pH, temperature, humidity, and light. The type and concentration of carbon and nitrogen source and the cultivation temperature are amongst the most important physical factors having an effect on the type of reproduction

ian T. Paulsen and Andrew J. Holmes (eds.), Environmental Microbiology, Methods and Protocols, Methods in Molecular Biology, vol. 1086, DCN 10.1007/978-1-60703-713-9_1, d) Springer Science-Business Media, LLC 2016

this type of culture. One typical application of solid culture is production of fungal mycelia and spores to be applied for biological control [3]. Solid culture is also seen as a way to modify the enzyme profiles produced by fungi as the profiles may differ from those produced in liquid culture. An excellent overview of the principles of solid-state fermentation is provided in [4].

In this chapter we describe the most popular media and methods for the isolation and maintenance of filamentous fungi on plate cultures, growing hyphae for the isolation of genomic DNA and RNA, and screening fungal colonies for enzyme activity. We also discuss setting up of various types of shake cultures and growing fungi in a laboratory fermenter.

2 Materials

2.1 Plate Cultures

Plate cultures usually contain agar as a solidifying agent. Some agars, such as PDA, are enriched with nutrients and can be purchased as "ready-made," whereas minimal agars require addition of relevant nutrients such as a carbon and nitrogen source. In addition to nutrients essential for growth, various other components can be introduced into the agar media. For example, antibiotics may be added for the selection of fungal transformants or to prohibit bacterial contamination. The surfactant Triton-X100 is typically applied to restrict the growth of fungal colonies on the plates. Here we describe the preparation of PDA plates and some variations of their use and minimal agar plates with an example of screening of xylanase activity secreted by fungal colonies.

2.1.1 Components for PDA Plates

- PDA (e.g., Difco #213400, Voigt Global Distribution Inc, Lawrence, KS, USA; Oxoid # CM0139, Oxoid Australia Pty Ltd, Adelaide, SA, Australia).
- Triton-X100 (e.g., Amresco, Inc., Solon, OH, USA, #0694), 10 % (v/v) stock prepared in purified water.

The second aim of this study was to investigate whether the social impairment and repetitive behaviours that characterize autism developed over time in the participants with childhood PLI. Language impairment and autism are disorders with features and abnormalities that vary across development (Bishop and Norbury 2002). In the case of children with PLI, it is possible that deficits relating to the social and repetitive autistic domains become more apparent as children get older and are exposed to different environments and experiences. Such a finding would suggest that PLI is best viewed as a high functioning form of autism.

Methods

Participants

Childhood

Clinical participants attended special speech and language schools in the UK. Participants were subcategorized as cases of SLI or PLI based upon a series of assessments. An SLI diagnosis was given if a child scored at least 1 standard

First-line after heading: no indent

3.2 Thermophiles

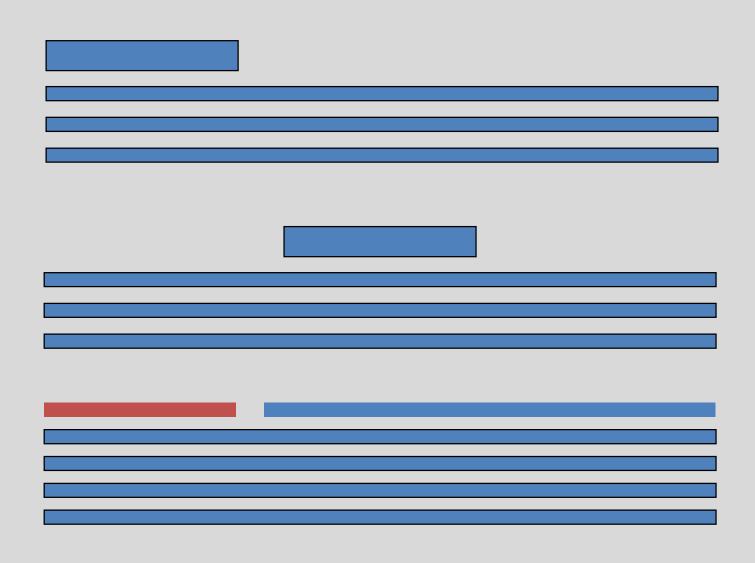


Thermophiles require high temperatures to thrive, and have several medical applications because their cell membranes have evolved to endure intense heat. As a result, these extremophiles are in demand for treating types of cancers involving intense heat. Since global warming has and will continue to have an impact on the environmental temperature, there has to be ways to reduce the effects of high temperature on human lives. Thermophiles have a mechanism in which they are able to convert carbohydrate-rich substances into hydrogen, and because they are able to withstand and grow at extremely high temperatures, this makes them applicable for use in the medicinal and therapeutic formulations. One major advantage that thermophiles may have is that they prevent the growth of pathogenic organisms from entering into the human society, since they survive at high temperatures at which most pathogens would not be able to proliferate (Suzuki et al. 2013).

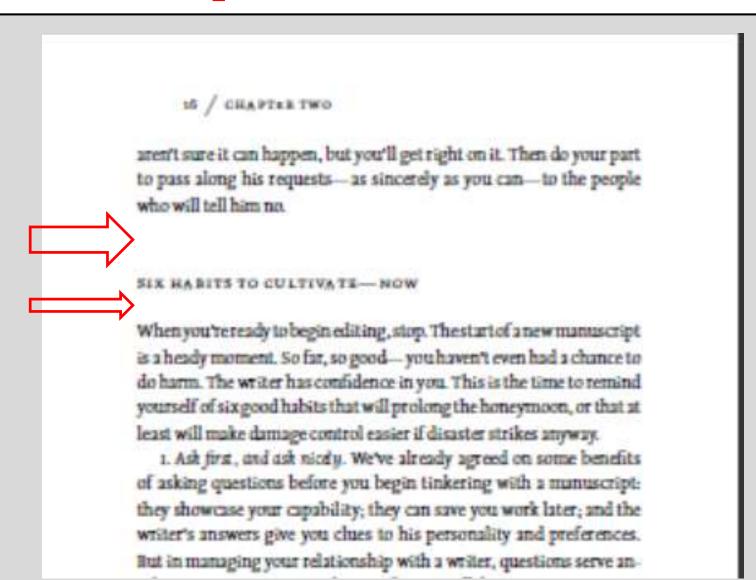


Major neurodegenerative diseases such as Huntington's and Parkinson's are characterized by protein folding malfunctions and the inclusion of formations inside neurons in the brain (Jorge et al. 2011). Thermophiles may have extremozymes with capabilities such as the inhibition of conformational changes of native or mutant proteins, which may be useful to develop cures for neurodegenerative diseases (Jorge et al. 2011). Jorge et al. (2011) suggested that novel organic solutes known as thermolytes could serve to protect proteins' native structures. Thermolytes have been revealed to affect the growth curves of HEK293 cells, which have been cultured to aid in the treatment of Parkinson's disease. The results of this research showed a decrease in cell density in the cells that were treated with thermolytes compared to untreated control cells (Jorge et al. 2011). Studies were conducted to test the similar effects of thermolytes in Huntington's disease using transfected HEK293 cells with Htt-103QEGFP, and revealed an Mg- and DGP-mediated significant effect on the formation of Huntington aggregates (Jorge et al. 2011).

Alignment to signal importance



More space above; less below



Avoid equal space above and below headings

terprofessional education should be a priority for every department that is training students to join healthcare (Blue et al., 2010).

Competencies for IPE

The goal of IPE is to increase the effectiveness of clinical education and patient care. The students need to understand the IPE dynamics by focusing on knowledge, skill, and values that pertain

More space above; less space below

WHAT IS 'RESEARCH'? 10

from your thesis; to 'middle career', perhaps a time to write a single-authored book or other appropriate output; to 'fater career', when you might be asked to write a guest contribution to an edited volume (Blaxter et al. 1998a: 140). Again, it depends on your discipline and, above all, on your understanding of how people construct a programme of publications at different stages in their careers. Take a look at a few websites: what and where are junior and senior researchers publishing in your discipline or sub-discipline? What is the trajectory of their publications over their careers?

Research profile

Are you thinking ahead? Do you want to be published in certain journals, not in others, and think you have no chance of getting into the high-ranking journals? It may seem premature to be thinking of developing a research profile, but your first publication may present you to the research community in a particular way. It is important that you can live with that.

If you want to develop a profile, will you have to focus your publications in a certain area, not publishing too widely? Or will you be able to use diversity, in your writing, to make a broader impact, thereby resching a range of audiences?

What is 'research'?

I discovered long ago In collecting and classifying marine animals that what I found was closely intermeshed with how I felt at the moment.

(Steinbeck 1962: 181)

This suggests that what constitutes 'research' will be closely related to your own interests and perspectives. All sorts of studies count as research, in some disciplines, and the growing rigour and credibility of a range of qualitative methods has opened the door for those who do not want to use statistics, for example.

Research is as much about the work you are currently doing, including teaching, as anything else. If you have expertise, experience and a profile in an area, then it makes sense to find your research in that area, unless you hate it with a passion. If you can find the right journal, and can construct a sufficient contribution, then you have a potential publication.

For example, a brief survey of the sub-field of social work dealing with residential childcare produced the following types of 'research' in published journal articles:

More space above; less space below

WHAT IS 'RESEARCH'? 19

from your thesis; to 'middle career', perhaps a time to write a single-authored book or other appropriate output; to 'later career', when you might be asked to write a guest contribution to an edited volume (Blaxter et al. 1998a: 140). Again, it depends on your discipline and, above all, on your understanding of how people construct a programme of publications at different stages in their careers. Take a look at a few websites: what and where are junior and senior researchers publishing in your discipline or sub-discipline? What is the trajectory of their publications over their careers?



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For example, a brief survey of the sub-field of social work dealing with residential childcare produced the following types of 'research' in published journal articles: HOW TO WRITE THE MITHODS SECTION OF A RESEARCH PAPER

one approach to writing the methods section. Because this section is so intimately related to the principles of scientific research, I begin with a review of basic research concepts, and then follow with a discussion of important points to incorporate when writing the methods section.



Basic Research Concepts

The scientific method attempts to discover cause-andeffect relationships between objects (ie, physical matter or processes). In the physical sciences objects are regarded as variables, and a variable is anything that can assume different values. Elucidating a cause-and-effect relationship between objects requires that variables are classified as independent, dependent, or confounding. An independent variable is one that, when manipulated, causes a change in another variable. The variable that changes in response to that manipulation is referred to as a dependent variable. For example, arterial oxygen tension is a dependent variable that responds to manipulations in independent variables such as barometric pressure and oxygen concentration. A confounding or extraneous variable is anything other than the independent variable of interest that may affect the dependent variable. Therefore, a change in a dependent variable may be due wholly or in part to a change in a confounding variable. For example, a change in minute ventilation can after arterial oxygen tension by its effect upon alveolar carbon dioxide partial pressure.

Evaluation of a potential cause-effect relationship between 2 objects is accomplished through the development of the study design. A study design is simply a strategy to control and manipulate variables that provide an answer to the research question regarding potential cause-and-effect relationships.

Validity refers to the credibility of experimental results and the degree to which the results can be applied to the general population of interest. Internal validity refers to the credibility of a study and is determined by the degree to which conclusions drawn from an experiment correctly describe what actually transpired during the study. 1 Erroywal validity refers to whether (and to what degree) the results of a study can be generalized to a larger population.1 Unfortunately, all biological systems are profoundly complex, so simple, unambiguous, direct relationships between objects can be difficult to ascertain. The internal validity of a study is judged by the degree to which its outcomes can be attributed to manipulation of independent variables and not to the effects of confounding variables. Therefore, the study protocol must be designed to control (eg. to keep constant) as many extraneous factors as possible so that any potential cause-and-effect relationship between 2 objects can be judged accurately. It is important

to emphasize that confounding variables can never be fully controlled. Furthermore, the influence of these variables may not be fully approciated by those conducting the research. External validity is primarily determined by how subjects are selected to participate in a study and by the use of randomization procedures that limit potential bias in how subjects are assigned to treatment groups.

Content and Writing Style of the Methods Section



Historically, the methods section was referred to as the "materials and methods" to emphasize the 2 distinct arms that must be addressed. "Materials" referred to what was exumined (eg. humans, animals, tissue preparations) and also to the various treatments (eg. drugs, gases) and instruments (eg. vantilatous) used at the study. "Methods" referred to how subjects or objects were manipulated to answer the experimental question, how measurements and calculations were made, and how the data were analyzed.

The complexity of scientific inquiry necessitates that the writing of the methods be clear and orderly us avoid confusion and ambiguity. First, it is usually helpful to structure the methods section by:

- 1. Describing the materials used in the study
- 2. Explaining bow the materials were prepared
- 3. Describing the research protocol
- Explaining how measurements were made and what calculations were performed
- Stating which statistical tests were done to analyze the data?

Second, the writing should be direct and precise and in the past tense. Compound sentence structures should be avoided, as well as descriptions of unimportant details. Once all elements of the methods section are written dawn during the initial draft, subsequent deafts should focus on how to present those elements as clearly and logically as possibly. In general, the description of preparations, meanumements, and the protocol should be organized chronologically. For clarity, when a large amount of detail must be presented, information should be presented in subsections according to topic. Within each section and subsections, material should always be organized by topic from most to least important.

Subjects

Judging the external validity of a study involving human subjects (ie, is whom the study results may be applied) requires that descriptive state be provided regarding the basic demographic profile of the sample population, including uge, gender, and possibly the racial composition of the sample. When animals are the subjects of a study, it is important to list species, weight, strain, sex, and age.

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HOW TO WRITE THE METHODS SECTION OF A RESEARCH PAPER

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Centred heads need to be short

reader may have to do some skimming of the rules and their discussions. To help the skimming eye, I have subdivided the longer discussions, and when possible I have begun paragraphs with examples of specific constructions that may match the reader's problem.

THE SENTENCE

Most of us don't have to be told what a sentence is. This is fortunate, because it is possible to poke holes in any simple definition. We can say that a sentence is a word group that expresses a complete thought, but *I said yes* is a complete sentence, yet hardly a complete thought; like many sentences,

Size and weight signal importance

When to Work

The first question many ask is when is the best time to prepare the beds. If you are the very organized type of person that plans well ahead, fall is the best time and spring is the worst. That's because you shouldn't work the soil when it's wet and cold. But how many of us are that well organized? When you decide you want a cash garden, you want it right then. So go ahead at any time of the year as long as the soil isn't frozen or so muddy that when you squeeze a handful, water drips out and it's perfect for making mud pies. If it's that bad, cover the squares with clear plastic to let the sun in and keep the rain out, and soon the soil can be worked.

The Garden Layout

A square foot garden is composed of any number of four-foot square planting areas. Each area can be bordered with string, wood, railroad ties, bricks, or anything you can think of. Putting a border around each garden block helps to define it and keeps visitors from walking in the garden soil.

Ornaments to signal importance



Pathogens in Water and Biofilms

Andreas Nocker*, Mark Burr**, Anne Camper***

*Lecturer in Drinking Water Microbiology, Cranfield Water Science Institute, School of Applied Sciences, Cranfield University, Cranfield, UK

**Research Assistant Professor, Department of Land Resources and Environmental Sciences, Montana State University, Bozeman, Montana, USA

***Professor, Center for Biofilm Engineering, Montana State University, Bozeman, Montana, USA

INTRODUCTION

As for any other organism, the goal of a waterborne pathogen is to propagate and disseminate itself. The place where propagation occurs and the mode of dissemination have important implications. Some pathogens spend most of their lives in the water environment and only coincidentally encounter a host. They are typically well adapted to the low nutrient concentrations and physical, chemical and biological conditions encountered in water. Water can be seen as their natural habitat and propagation can occur both in water and in the host. Examples of these so-called

Colour for impact (soft copies)

sary enthusiasm. Their initial reticence is just as well. Lots of reactions that might theoretically be possible just will not happen at an appreciable rate without some help. As we shall see presently, this gives the cell a chance to maintain a bit of order!

Combining ratios

We now know that atoms combine with one another in a strict numerical fashion, and it is certainly not always monogamous pairing. Thus, oxygen takes on two hydrogens to form a threesome called water, as we saw above. In CO₂, carbon dioxide, however, a single oxygen is not sufficient to cope with one carbon atom; it takes two oxygen atoms. These are not just random numbers. The principle governing these combining ratios is called valency. Hydrogen has a valency (a combining power) of one, oxygen two and carbon four. Accordingly, if a single carbon atom combines with hydrogen, it requires four hydrogen atoms to satisfy the greedy appetite of the carbon. This makes the molecule of methane, CH₄.

Stable electron shells

How does this work? It all depends on the number of electrons in each atom. The electrons assigned to each atom are not just randomly arranged; they are organised in sets or 'shells', each of which can only hold a fixed maximum number of electrons. As each shell fills up, any new electrons have to move into the next shell.

A 'widow' line

Affiliations

Department of Communication, Southeast Missouri State University

Corresponding Author

Jayanti Ray
Department of Communication
Disorders Southeast Missouri State
University
Email: jray@semo.edu

Key Words

Interprofessional education Clinical education Clinical competencies Team collaborations

Abstract

Interprofessional education (IPE) relates to effective learning and collaboration amongst students from two or more professions (WHO, 2010). To enrich students' knowledge of healthcare professions and prepare them for the workforce in the fields of communication disorders, it is imperative that IPE and interprofessional practice be included in the curricula for the students to collaborate and consult with other professionals, while providing comprehensive care to their clientele and caregivers/families. Given that IPE is a current trend in healthcare/education, investment in training the future speech-language pathologists can enhance clinical and research collaborations among the health professionals. Implementation of specific IPE activities into the curricula in collaboration with other health professionals can help enhance interdisciplinary training outcomes in terms of knowledge, values, skills, and attitudes. Furthermore, the workforce demand in healthcare warrants IPE training for students in academic and clinic settings.

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Background

Interprofessional education (IPE), endorsed by the Institute of Medicine, has been an area of focus in communication disorders for the past several decades. IPE was introduced to the allied health curricula to improve teamwork, increase the understanding of roles across health professions, enhance interprofessional collaboration (IPC), and quality clinical learning outcomes.



Need for IPE in Curricula

Given that IPC leads to optimization of health outcomes in effective team-based care, specific training components of IPE should be systematically integrated into undergraduate and graduate

A 'widow' line

Affiliations

"Department of Speech-Language Pathology, AIISH, Mysore Department of Clinical Services, AIISH, Mysore Department of Otorhinolaryngology, AIISH, Mysore Department of Speech-Language Sciences, AIISH, Mysore

Corresponding Author

Dr. Geetha Y. V., Ph.D.
Professor Emeritus
Department of Speech-Language
Pathology, AIISH, Mysore - 570006
Email: qeethayelimeli@gmail.com

Key Words

Dichotic listening Lateralization index (LI) Laterality preference Handedness Cerebral dominance

Abstract

Stuttering is reported to be the consequence of aberrant cerebral laterality in the processing and production of speech. The previous studies involving undirected attention to the stimuli during dichotic listening tests vary with their procedure and method, yielding inconclusive statements about the laterality of speech processing in persons with stuttering (PWS). This is also true with other laterality measures using imaging procedures, leading to equivocal results. Hence, there is a need to study the speech processing in PWS on a large sample using techniques that are more economical and simpler. The present study, a part of a large scale project, aimed to investigate the differences, if any, with respect to the handedness, footedness, ear and eye preference and the lateralization Index (LI) scores among PWS compared to persons with no stuttering (PWNS). Participants were 50 PWS and to PWNS in the age range of 18 to 30 years. All the participants were screened for hearing acuity and administered Modified Laterality Preference Schedule (MLPS) followed by Dichotic Consonant Vowel (CV) Test in Kannada Language. The statistical analysis showed no significant difference in the mean values of scores between PWS and PWNS on MLPS. However, the dichotic CV test results showed statistical significance difference. The findings partially support observation by many authors that the left laterality of the speech motor system is incomplete in PWS where there is reduced left hemisphere activation, bilateral activation or widespread right hemisphere bias when listening to verbal information.

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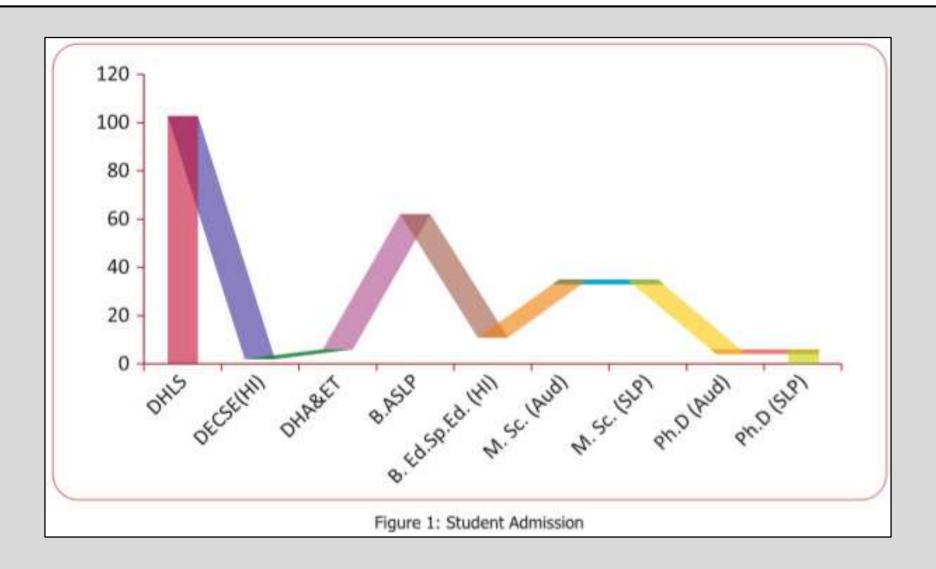
Background

troencephalography (EEG).

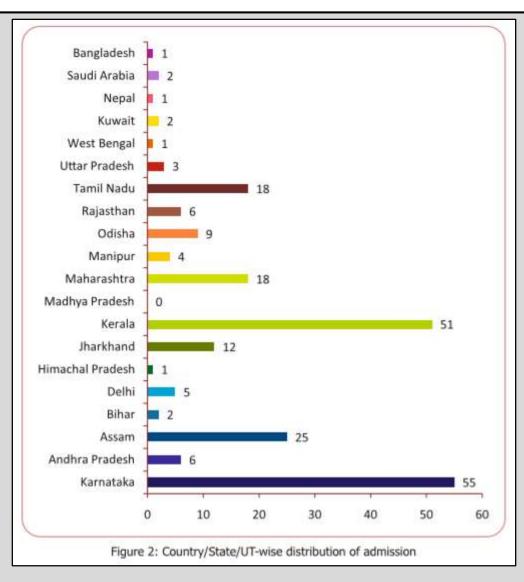


Researchers have also found the pre and post therapy changes for shift in hemispheric dominance,

Avoid line charts to show magnitudes



Arrange bars by magnitude



Avoid numbering rows in tables

Sl.No.	Name	Age/gender	Degree of hearing impairment	Type of hearing aid		
1.	AB	$3.7/\mathrm{M}$	<u> </u>			
2.	CD	3.7/M	Dil	Behind the ear digital hearing aid on both the ears		
3.	EF	4.6/M	Bilateral severe			
4.	GH	$4.3/\mathrm{M}$	$rac{ ext{hearing}}{ ext{impairment}}$			
5.	$_{ m JK}$	$7/\mathrm{F}$	mpanment			
6.	MN	6.10/F				

Avoid numbering rows in tables

Table 1: Mean & SD for CF and LF readers

Sl. No.	Dependent variables	Culturally fa	amiliar (CF)	Culturally less familiar (LF)		
DI. 110.		Mean	SD	Mean	SD	
1	Number of utterances	17.9	7.6	16.6	5.5	
2	Number of Questions	1.4	1.7	2.1	2.2	
3	Percent of questions	7%	8%	21%	29%	
4	Mean Length of Utterance (MLU)	3.3	1.5	3.6	1.1	
5	Type Token Ratio (TTR)	0.58	0.15	0.60	0.24	

Avoid numbering rows in tables

Table 2: F- values and p-values for the main effects and interaction effects

Sl. No.	Dependent variables -	Independent variables						
	Linguistic units	Reader		Book		$Reader \times Book$		
		F	p	F	р	$\overline{\mathbf{F}}$	p	
1	Number of utterances	0.186	0.67	0.027	0.87	1.67	0.21	
2	Number of Questions	0.56	0.47	0.10	0.75	0.10	0.75	
3	Percent of questions	0.2	0.17	1.0	0.33	0.97	0.34	
4	Mean Length of Utterance (MLU)	0.23	0.64	0.39	0.54	5.03	0.04	
5	Type Token Ratio (TTR)	0.06	0.81	5.03	0.04	6.4	0.02	

Formatting text and headings

- **Text**: 12-point Georgia, 18-point line space
- D-level: 12-pt Georgia bold, run on,1 blank line above
- C-level: 14-pt Georgia, 6 mm negative left indent, 1 blank line above

Formatting text and headings

- **B-level**: 14-pt Georgia, centred, 1 blank line above
- A-level: 14-pt Georgia bold, centred, 1 blank line above + 12 pt above / 6 pt below

Micro-algae, being photosynthetic, have significant potential as a future energy feedstock. The dry biomass of algae is known to contain approximately 46% carbon (C), 10% nitrogen (N), and 1% phosphorus (P) (Hensen et al., 2006). Micro-algae are useful in aquaculture as sources of biomolecules and biomass and can improve the nutritional value of food or provide additional health benefits (Yaakob et al., 2014). Because the combustion of fossil fuels releases large amounts of CO₂ into the atmosphere, biomass-derived fuels are becoming important as an alternative to fossil fuels (Trentacoste et al., 2012). Micro-algae can tolerate and consume large quantities of CO₂ discharged from various industrial operations in the form of flue gas (Nigam et al., 2011) and have the potential to become the next-generation biofuels in the coming decades (Kilain et al., 2011). Several studies have shown that micro-algae can produce larger quantities of lipids than other autotrophic organisms can—more than 300 times that currently being targeted using conventional biofuel crops (Chisti, 2008).

A-level

head

Micro-algal lipid synthesis

Lipids are important for maintaining the integrity of cells (Baba et al., 2013). Although green algae share common ancestors with higher plants and have cell metabolic mechanisms and photosynthetic pigments similar to those found in higher plants (Yu et al., 2011), micro-algae synthesize lipids in much smaller quantities than higher plants do (Cagliari et al., 2011). The synthesis of lipids in micro-algae varies with the species (from either freshwater or marine habitats); only some are capable of synthesizing large quantities of lipids (Hu et al., 2008). However, a unique feature of algae is that they can store large amount of lipids in the form of oil globules in parts of the cell other than chloroplasts (Jiang et al., 2000). Li et al. (2012) showed that neutral lipid accumulation in the cell occurs through the conversion of either starch or carbon to lipids, but the conversion depends on the specific micro-algal strains, because different strains have different ways to transmit the carbon flux from the carbohydrate pathway for synthesizing lipids (Fig. 2). In unicellular organisms, lipid biosynthesis follows a complex pathway. The synthesis starts with the formation of acetyl CoA by the ACCase gene through acetyl CoA carboxylation. This is the key initial step at which carbon is assigned for lipid synthesis (Wakil et al., 1983) (Fig. 3). Fatty acids can be synthesized in larger quantities by various means, such as overexpressing the genes that regulate the enzymes responsible for lipid content, increasing the ratio. In unicellular organisms, lipid biosynthesis follows a complex pathway. The synthesis starts with the formation of acetyl CoA by the ACCase gene

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Autotrophic growth factors

Temperature is a stress factor that affects net lipid productivity as well as fatty acid profiles in a wide range of micro-algal species (Garcia et al., 2011). Lipid composition in marine and freshwater algae is a function of heredity as well as ambient conditions, which affect physiological behaviour. The large number of species studied by many researchers (Converti et al., 2009; Hu et al., 2006; Xin, 2011) show that both lower and higher temperatures can boost lipid productivity. As can be seen in Fig. 22, two freshwater algae, Chlorella vulgaris and Botryococcus braunii, contain only Cs8:3 (Omega-3) as major lipid constituents, whereas the marine algae contain saturated fatty acids (SFA), PUFA, docosahexaenoic acid (DHA), and eicosapentaenoic acid.

Effect of light

B

(EPA). Similarly, Nannochloropsis sp. and C. minutissima contain only EPA, which forms part of the membrane lipids including glycolipids. Therefore, under low temperatures, the unsaturation level of these fatty acids increases, lowering membrane fluidity (Marr et al., 1962). It is well known that at low temperatures, PUFA are essential in micro-algae for proper functioning of the membrane of photosynthetic cells (Klyachko Gurvich et al., 1999). Both low and high temperatures are preferred by diverse species in attaining similar lipid profiles. Several factors — mainly intrinsic culture conditions — can change the composition and fatty acid profiles of algal cells (Spoehr and Milner, 1949).

Intensity. In Isochrysis galbana, Nannochloropsis sp., and N. oculata, temperature affects the production of PUFA (Fig. 2a). The difference between the ratio of saturated and unsaturated fatty acids is species dependent but only partly so because the composition of the medium also plays a role. In Isochrysis galbana, the levels of PUFA and DHA were higher at a low temperature (15 °C). [Why however?] In most common species such as Nannochloropsis sp. and C. minutissima, EPA C20:5 (omega-2) and Phaeodactylum tricornutum (PUFA) were reported to be high, whereas in the freshwater micro-algae C. vulgaris and B. braunii it was the C 18:3 content that was high at low temperatures (Fig. 2a). Moreover, among eight micro-

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2

Inconsistent formatting of headings

1. Introduction

Rapid economic growth in countries such as China and India in the last two decades have not only lifted millions out of poverty, but have simultaneously set the stage for

CHAPTER 1 Introduction

Petroleum refineries occupy a key role in the economy of our country. Presently, there are more than 22 oil refineries of various sizes operating in India. These oil refineries generate huge volume of oily sludge. Management of oily sludge is one of the major problems being faced by the refineries.

Study on indoor air quality and water quality at UNESCO-MGIEP office in Delhi

Background

Indoor air quality (IAQ) refers to the physical, chemical, and biological characteristics of air in the indoor environment within a building or an institutional or commercial facility. These characteristics can be influenced by many factors, even though these buildings or facilities do not have the industrial processes and operations found in factories and plants.

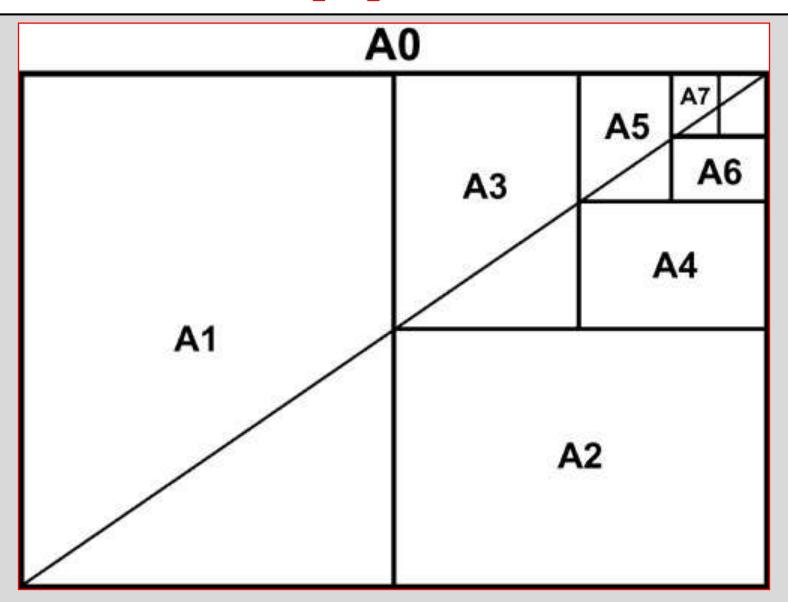
1. Introduction

A large percentage of rural Indian population lives without basic access to clean lighting. Despite the government's efforts to prioritize electricity access in these areas, universal energy access remains a distant dream. These remote villages pose an immense challenge for

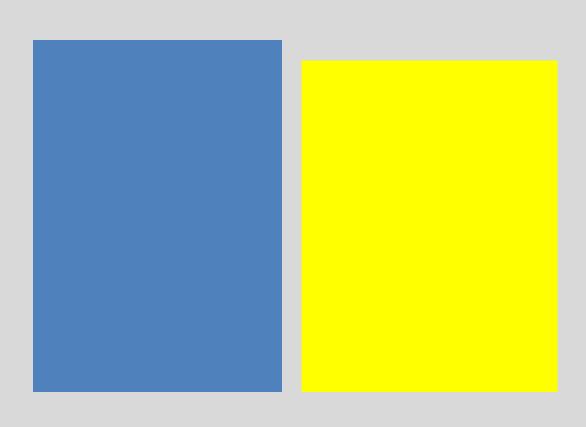
Page size and margins

- A4 and the DIN series
- Book sizes: quarto / octavo; demy, royal, crown, . . .
- Left (inside) margin: binding method
- Bottom margin generally deeper than top margin

ISO paper sizes



A4 sheet is taller than US Letter



Hallmarks of good text design

- Even 'colour' (textus, Latin cloth)
- Proper characters: ° × ^{2 3 2 3} ' ' fi fl
- Clear hierarchy of headings
- Lines back up on both sides of a sheet
- Not more than two typefaces
- Non-lining numerals: 0 1 2 3 4 5 6 7 8 9
- Capitals sparingly used, slightly spaced

Use en dash to indicate range

 \blacksquare En dash (alt + 0150) is longer than a hyphen and replaces 'to'.

Stuart, 1998). DAF is a condition where speakers hear their own speech with a short time delay. These delays are usually less than a quarter of a second (50-250 ms) shift in the time domain



× 50-250 ms

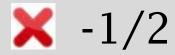
50-250 ms



Use minus sign

Minus sign is like en dash but sits higher.

effective than DAF. Natke, Grosser and Kalveram (2001) compared 10 PWS and 10 PWNS in spontaneous speech task under FAF with +1/2 and -1/2octave shift and observed that in PWS downward



-1/2



Avoid spacing lowercase letters

 Barman, A., Prabhu, P., Narne, V.K., Singh, N.K. & Spoorthi, T. (2017). Low frequency bisyllabic wordlists in a south-Indian language, Kannada: Development, standardization and validation. Hearing, Balance & Communication, 15(1), 38-47.

> Barman, A., Prabhu, P., Narne, V.K., Thammaiah, S., Singh, N.K., & Gupta, M. (2017). Development and standardization of auditory low-frequency word lists in Hindi. Journal of Hearing Science, 6(4), 39-49. doi: 10.17430/899781.

Consistent headings: title case or sentence case

Counseling and Guidance: The professional experts of the Institute provided counseling and guidance on various aspects of the disorders such as treatment procedures, usage and care of tools like hearing aids during the reporting year.

Distribution of they kits: 164 toy kits were distributed to eligible disabled children worth ₹93,750.

Issue of Certificates: Various certificates like financial aid, income tax exemption, educational scholarship, and school admission were issued to the eligible candidates during the reporting year, the details of which are given in table 7.

Use space as a thousands separator

	2012-13	2013-14	2014-15	2015-16	2016-17
Patient Registration	50906	56386	63450	69079	69490
New Cases	21006	20896	22650	23818	22469
Repeat Cases	29900	35490	40800	45261	47021
Speech & Language Assessment	8161	8007	9301	8272	7501

Avoid terminal punctuation in headings



Listening Training (LT) Unit:

Totally, 3018 persons underwent listening training in 10804 sessions during the reporting year.



Motor Speech Disorders Unit:

This specialized unit caters to the needs of persons with motor speech disorders. It enables them to realize their potential and become contributing members of the society. Totally, there were 79 new



Structural Orofacial Anomalies (U-SOFA) Unit:

Clients with deformalities in the growth of head and facial bones were given multi-disciplinary diagnostic and rehabilitation services in the clinic. The experts of the clinic evaluated 220 clients in 1360 sessions during the reporting year.



Swallowing Disorders Unit:

This unit facilitates assessment and management

Maintain normal punctuation and capitalization in lists of bullet points

the hearing aid through the iPhone. A hearing aid user can benefit from direct connectivity to iPhone by:

- Audio streaming from iPhone without any intermediary device: the hearing aid user can stream music, directly connect to a phone call, or stream the audio of YouTube videos directly to the hearing aid.
- Custom hearing aid app: Apps developed by hearing aid manufacturers can be used to control and personalize the hearing aid with an iPhone.

Maintain normal punctuation and capitalization in lists of bullet points

- Direct connectivity to iPhone has many benefits for the use of hearing aids.
- Audio streaming without any intermediate device: . . .
- Customized hearing-aid apps: . . .
- Ease in finding misplaced hearing aids
- Geo-tagging

List introduced with a colon

Pesticides include following chemicals:

- insecticides
- weedicides
- **■** tungicides
- acaricides
- nematicide 🔊

Whole list as a single sentence

Pesticides include

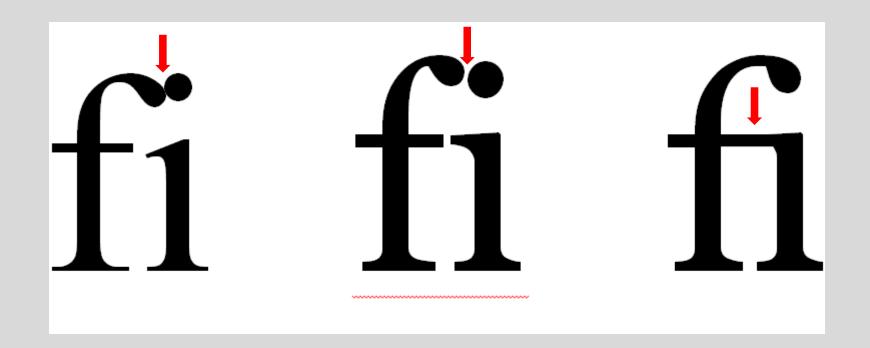
- insecticides
- weedicides
- **■** tungicides
- acaricides
- nematicide 🔊

Whole list as independent terms

Pesticides encompass many categories of chemicals.

- Insecticides
- Weedicides
- Fungicides
- Acaricides
- Nematicides

Use ligatures

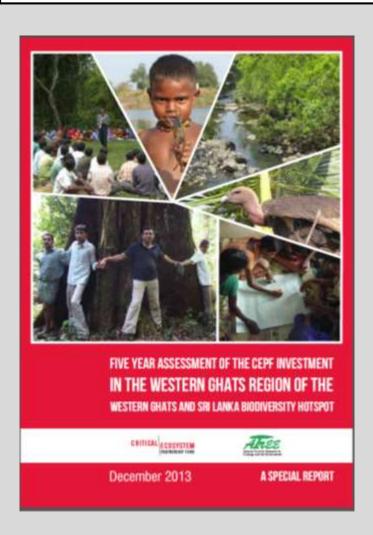


Common ligatures: ffi, ffl, fi, ff, ff

Typographic trivia: 'smart' quotes

"To promote socially just environmental conservation and sustainable development by generating rigorous interdisciplinary knowledge that engages actively with academia, policy makers, practitioners, activists, students and wider public audiences."

All-caps or full caps less readable



IN THE WESTERN GHATS REGION OF THE WESTERN GHATS AND SRI LANKA BIODIVERSITY HOTSPOT

Format documents properly, 1

- Change the default paper size to A4.
- Use fonts with serifs: Georgia, Sitka,
 Linux Libertine.
- Prefer left-justification to full justification.
- Keep more space above headings; less space below.

Format documents properly, 2

- Use proper symbols and characters.
- Master Format > Paragraph menu; use styles
- Avoid multiple tabs and hard returns.

Use page-layout software if required

- Easier to position pictures, boxes, etc.
- Easier to use multiple columns
- Controlled word-spacing
- Better hyphenation: thin-king, therapist, fun-ding
- Easier to import pictures
- Suitable for commercial printing

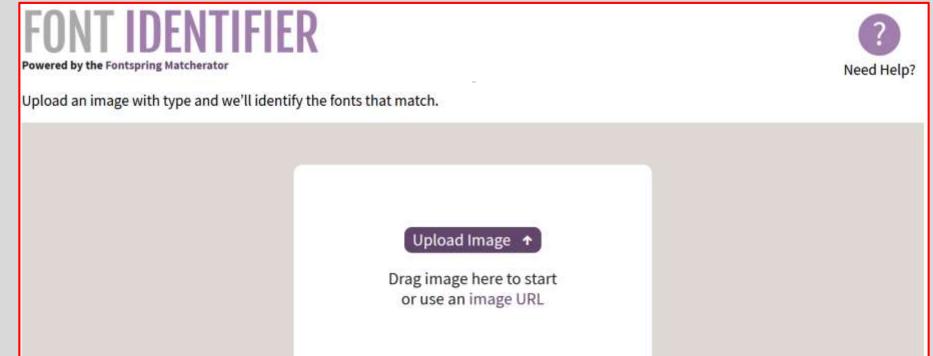
Examples of research, 2

"We conducted six studies that found two measures that successfully detect aesthetic differences: improved performance on creative cognitive tasks after text is optimized, and reduced activation in the corrugator muscle that is associated with frowning."

Larson K et al. 2007. Measuring the aesthetics of reading, pp. 51–56 in *People and Computers Xx–Engage*. London: Springer.

Identifying fonts, 1: Font identifier





https://www.fontsquirrel.com/matcherator

Identifying fonts, 2: Identifont

Fonts by Appearance

Identify a font by answering questions about key features:

Do the characters have serifs?

Serifs are spikes or slabs on the ends of the strokes.



Yes (serif).



No (sansserif).

Not Sure

Limited set of letters?

How far does the upper-case 'J' descend?



Sits on the baseline.



Descends below the baseline.

How far does the centre bar of the upper-case 'P' extend?



Leaves a gap with the vertical.



Meets the vertical.



Crosses the vertical.

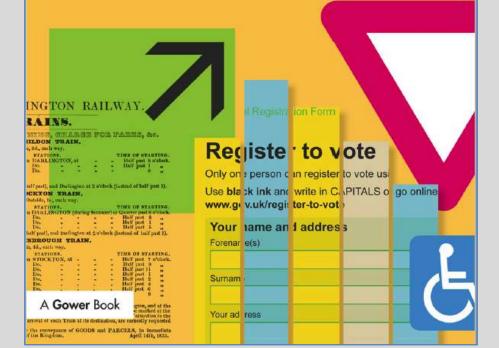
http://www.identifont.com/



research and practice edited by Ole Lund

edited by Alison Black, Paul Luna, Ole Lund, and Sue Walker

foreword by Erik Spiekermann





DESIGN Serior > HACKERS

/* reverse-engineering beauty */

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DAVID KADAVY

{@kadavy}

Sarah Hyndman FONTS MATTER

Ellen Lupton, editor

type

on screen

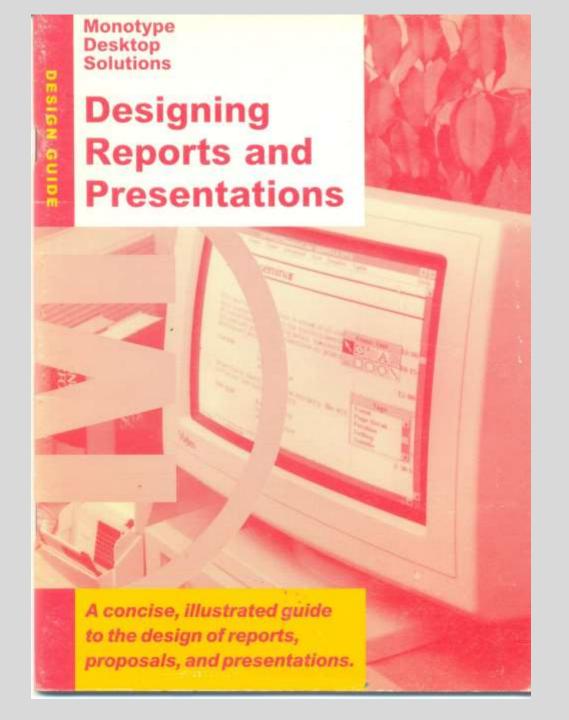
A critical guide for designers, writers, developers, & students

Typography for Lawyers

ESSENTIAL TOOLS FOR POLISHED & PERSUASIVE DOCUMENTS

BY MATTHEW BUTTERICK FOREWORD BY BRYAN A. GARNER





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guidelines for document designers

A Product of the Document Design Project Funded by the National Institute of Education With new introduction by Janice (Ginny) Redish July 2014



AMERICAN INSTITUTES FOR RESEARCH 1055 Thomas Jefferson Street, NW, Washington, DC 20007 November, 1981

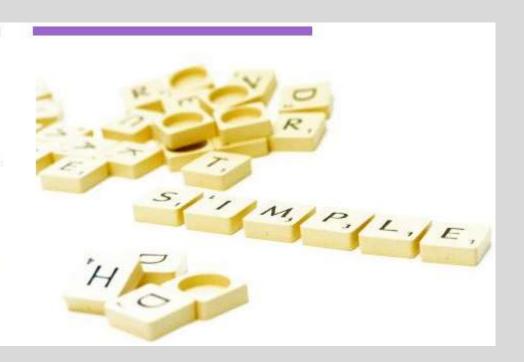
www.simplificationcentre.org.uk

Simplification centre

Welcome to the Simplification Centre

Most of us struggle with the complex information we rely on to live our lives – forms to tax our car, contracts for mobile phones, loan agreements, user guides. We don't think it has to be as bad as it so often is.

The Simplification Centre works with organisations who need to communicate complex information. We explore new ways to communicate, we help, we educate, and we put them in touch with their customers.



- Technical papers from the Simplification Centre, UK
- No. 2 What makes a good document?
- No. 5 Benchmarking everyday documents
- No. 7 What do people notice about their documents?
- No. 8 Criteria for clear documents: a survey
- No. 9 Choosing a typeface for reading

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 Information Design: research and practice.
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 Houston, Texas: Jones McClure Publishing.
 220 pp.

- Waller R. 1991. Designing Reports and Presentations. Redhill, Surrey, UK:
 Monotype Corporation. 32 pp.
- American Institute for Research. 1981.
 - Guidelines for Document Designers.
 - Washington, DC: A I R. 108 pp.

http://practicaltypography.com

TYPOGRAPHY IN TEN MINUTES

SUMMARY OF KEY RULES

WHY TYPOGRAPHY MATTERS

what is typography?

what is good typography?

who is typography for?

where do the rules come

why does typography

from?

matter?

SAMPLE DOCUMENTS

research papers

grids of numbers

letterhead

presentations

résumés

websites

resumes

Webs

business cards

TYPE COMPOSITION

straight and curly quotes

one space between

sentences

question marks and

exclamation points

semicolons and colons

paragraph and section

marks

parentheses, brackets, and

braces

hyphens and dashes

trademark & copyright

symbols

ampersands

ellipses

signature lines

apostrophes

accented characters

foot and inch marks

white-space characters

word spaces

nonbreaking spaces

tabs and tab stops

hard line breaks

carriage returns

hard page breaks

nonbreaking hyphens

optional hyphens

math symbols

ligatures

www.thinkingwithtype.com

TEXT

Sometimes more than 140 characters KERNING

TRACKING

Project: Space and Meaning

LINE SPACING ALIGNMENT

Project: Alignment

VERTICAL TEXT

MARKING PARAGRAPHS

ENLARGED CAPITALS

HIERARCHY

Project: Hierarchy

Project: Long Lists

LETTER

The only good letter is a red letter

ANATOMY

SIZE

SCALE

TYPE CLASSIFICATION

TYPE FAMILIES

SUPERFAMILIES

CAPS AND SMALL CAPS

MIXING TYPEFACES

NUMERALS

PUNCTUATION

TYPEFACE DESIGN

Project; Letterforms

FONT FORMATS

Good typography is good manners: making the type legible, making the headings easy to spot, making the tables easy to read. In short, being considerate to your readers.

Robert Waller