A Word Visualization Observation: The Hidden Meaning of the Words in Work Environments

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Abstract

The aim of this study is to illustrate and semantically explain how the visualization of words is helpful to create word trees, showing the connection between various, synonym words and to explore the hidden meanings behind each word in the tree, particularly to provide a true message in work environments. To do this, the authors have chosen one main word "lying" and two connected, synonymous words to it "fabrication" and "prevarication". The words have been chosen spontaneously, by considering their employment in communications, particularly in work environments. To uncover the variety and implication of these words the study is divided into two sections: a short secondary data collection and an observational part. The short literature review accomplished by a secondary data collection highlights the importance of word visualization through different methods and tools through communications in, particularly, workplaces. And the observations in the methodology bring complimentary proof after the secondary data collection. With the use of word visualizations such as mind maps and word clouds, this study illustrates the further importance of word visualizations which opens new perspectives upon other words for diverse studies and fields as seen in the

glossary, a dictionary of the words, employed in Picture 1 which is provided as an example of source presentation for future works in similar studies.

Keywords: GraphWords, visualization, lying, fabrication, prevarication

Introduction

According to Merriam-Webster online dictionary to visualize is "to see or form a mental image of "ENVISAGE" and "to make (an internal organ or part) visible by radiographic visualization" (Merriam-Webster, 1). This means that words can be visual through a picture or illustration. Indeed, through the fast developments of technology and the digital age, there are a number of software applications providing new concepts for creative illustrations. One of these applications is the "word cloud (or *tag cloud*), which is a word visualization that displays the most used words in a text from small to large, according to how often each appears" (MonkeyLearn, 1). There are also visual dictionaries and Thesaurus's, interactive lexicons that represent language visually.[1] In this study, the visualization of a word and its connections are illustrated in the form of a mind map. Tony Buzan (2018) who promoted mental literacy was the inventor of the mind map. By introducing the mind map in the 1960s as an effective way for memorizing and note-taking "he helped millions of people around the world to structure their thoughts, reach their learning goals, and unleash their creativity" (Brandner, 2019). Xiaojun Wang (2018) explains that the mind map is

> based on a hierarchy and classification of information, stretches out branches from a central topic by certain association. It can be seen as a radiating graph composed of a central topic and several branches. The way the brain thinks can be represented by the structure of the Mind Map. (2)

It is not a coincidence, therefore, that the mind map and mind mapping is popular among students, business people, artists, lecturers, writers, academicians, and many others. This study does not only illustrate but also explains the fascinating connection between the words "lying" and "fabrication", via mind mapping.

Research Focus

The focus is to practice mind mapping as word visualization to illustrate how far a speaker or a writer of a text could lead in the expressions by exploring the various notions and branches of a word. The focus is limited to "lying and fabrication" with the objective of providing clear

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[1] For more please visit https://visuwords.com/

recommendations about work and work environments where these words might be misunderstood or misinterpreted during oral or written communications. The authors of this paper realize regular studies in these domains. This work will bring a complementary approach to their previous works (Güneri and Hayırcıl, 2021) where they identified main issues about workplaces. This study's contribution to these identifications is about the usage of these words with their other meaning in a workplace that will change the understanding of messages between two parties.

Research Objectives

1. Providing some real cases within a secondary data collection in order to highlight the importance of workplace experiences with word visualization (Figure 1, page 4).
2. Doing an experiment to bring a complimentary proof following secondary data collection (Picture 1, Methodology, page 5).
3. Providing a multi-disciplinary study (linguistic, text visualization, and work environments) to target different populations who would inspire from this study for future research and implications.

Short Literature Review
1.   Semantic Approach to the Relation Between "Lying" and "Fabrication"

In many cultures, the word as well as the activity of "lying" has many negative connotations, since the meaning of a word depends on and reflects human experiences. Lying suggests not telling the truth and, therefore, is a vague statement. Paul Egre and Benjamin Icard argue in their article "Lying and Vagueness" (2018):

> In situations in which a cooperative speaker is uncertain about the world, vagueness offers a resource for truthfulness: it avoids one's having to commit oneself to more precise utterances that would be either false or unjustifiably true, and it is arguably an optimal solution to satisfy the Gricean maxims of Quality and Quantity. (1)

Similarly, the word prevaricate is defined as "to deviate from the truth" (Merriam-Webster). Although Coleman and Kay (1981) note that a prototype theory is needed to explain the meanings of the word "lie" and, therefore, of "prevaricate", this work presents that lying and prevarication leads to creativity, which is underlined by the word and semantic meaning of fabrication. While to fabricate may have the meaning of fake and forge for example a document or a signature, the first definition that fabricate carries is that of making art and labor as well as to construct something. The visual work here is a wonderful presentation of how the words "lying", "prevarication"

and "fabrication" are connected to each other and construct creative work. More than that, the mind mapping of these words presents and opens a new perspective towards words that are usually associated with a negative connotation. Lying, therefore, does not only have to carry a burdening, stereotypical meaning but is also presenting a construction of imagination or original ideas in the production of artistic work.
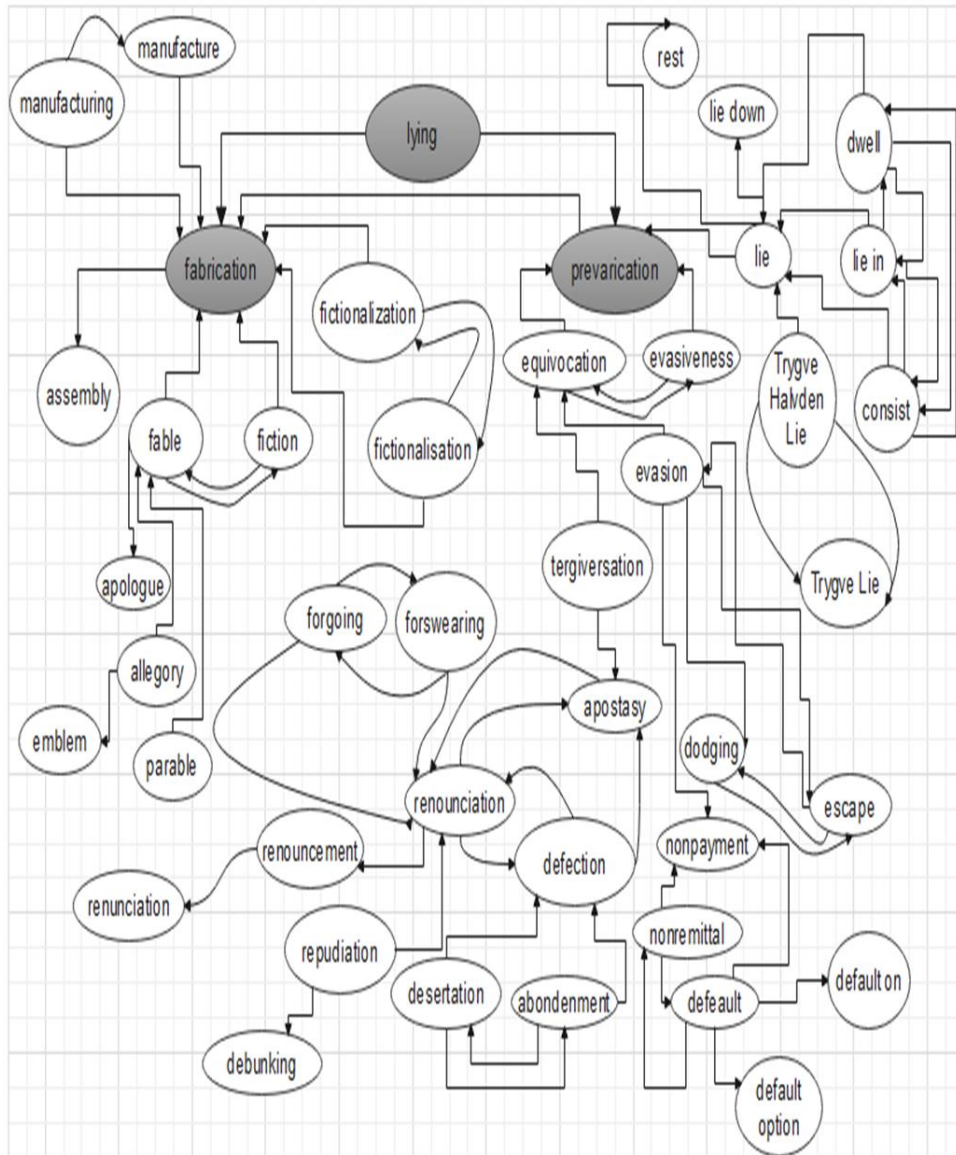
2.   Mind Mappings And Word Clouds

Mind mappings and/or word clouds are mainly used in text mining studies, sentiment analysis (Younis, 2015), brief presentations of long texts (Figure 1), and brainstorming ideas (Karim and Abu, 2016). The difference between a mind map and a word cloud is that the objective in a mind map is to show the various connections between a main word/theme/expression/subject and related words/theme/expression/subjects. A mind map might be really short or long depending on the depth of the research done about the main word. However, a word cloud represents a basket of words, which are not always linked to each other, to brief principal information about a subject or issue. Several former studies were done approaching the mind map as an interactive visualization of natural language text (Elhoseiny, 2014). According to M. Nikolic (2014) the mind map is considered as a good "drafting strategy" which is "more appreciated and better received by students who are better able to structure their ideas and produce coherent texts" (Nikolic, 316). The mind map is also a "teaching and learning" tool, especially for learning vocabulary (Wang, 2018). Furthermore, in politics, work environments, community management, and in any other domains where speaking or writing to the public is required particularly word clouds are often used (Figure 1). By visualizing, the related words from one or many texts, scientists create topic modeling of words (Smith, Chuang, Hu, Boyd-Graber and Findlater, 2014). On the other hand, web-based software such as InfraNodus, which builds graphs and represents any text as a network, can be studied in detail due to the text network algorithm that the software creates (Paranyushkin, 2019).

Figure 1: Speech briefing via Tag Clouds (Heer, 2009)

Methodology
1. Research Story

This study is evolved by a spontaneous finding after the hazardous exploration about the words on Graphwords. This online dictionary provides the synonym of words. "Lying" was one of the words that the authors of this study tried to explore how Graphwords functions. The result was surprising, since "lying" didn't present only a negative meaning or activity. The word is linked directly to fabrication and prevarication where the sense of the word completely changes.

2. Word Visualization

According to GraphWords (free English dictionary and thesaurus), "lying" is connected to two words: "fabrication" and "prevarication". By referring to GraphWords, the authors identified 40 words associated directly with "lying", "fabrication" and "prevarication". However, the word visualization via GraphWords was not possible. The authors looked for another software via which they could represent the bridges between "lying" and "fabrication/prevarication". They used EdrawMax Software which is providing a free web tool for word visualization. On the screen, they entered the words manually where the software is helpful with different services in writing and drawing.

Although this illustration may well be combined in infinitive variations, the work is limited through the screen limit due to the Wondershare EdrawMax Software (Free Version). After identifying the visual links between the words, it is prepared with the mind map illustrated below by Wondershare (Picture 1). The picture on the next page has been interpreted with a sematic approach.

As it's seen the picture starts with the main words: Lying, Fabrication, and Prevarication. In the first stages of the picture, the only common point between fabrication and prevarication seems to lie. In the next stage, prevarication brings long connections with the words forgoing and forswearing which are the branch of another central word "renunciation", in other words, which means stopping an engagement.[2] At any stage, there is not any bridge between fabrication and prevarication. They stay as separated words. On the other hand, both represent two different meanings of lying. At this point this study uncovers some research propositions for future researches:

1. What are the challenges for managers and public speakers when they use these kinds of words which seem to have different meanings but are connected to each other?
2. What are the risks of employing these kinds of words while communicating in work environments?

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[2] https://dictionary.cambridge.org/fr/dictionnaire/anglais/renunciation

Picture 1: Mind map of the meanings of "lying"

Discussion

Similar to Younis's (2015) definition of text mining which "is the automated process of detecting and revealing new, uncovered knowledge and inter-relationships and patterns in unstructured textual data resources", the visualization of words helps to construct new perspectives and potentials of a concept or idea that may have remained concealed to the reader or the

audience (Younis, 44). Since presentations play a crucial role not only in academics and business but also in TV and social media or digital platforms, visualization of words for a wider and especially multicultural audience requires further attention.

One of the most important benefits of visualization of words is effective communication between the speaker and the audience. The ability to communicate not only verbally but also with a depiction helps the listener to understand quickly and clearly the idea that is delivered. According to the Office of Training and Education of the U.S. Occupational Safety and Health Administration "Clear pictures multiply the audience's level of understanding of the material presented" and "with pictures, the concepts or ideas you present are no longer simply words - but words plus images" (Martinez and Monge, 2006). Many people in the audience in an international academic or business conference may well be from another culture. The idea is kept simple and clear and concentrates on the message rather than dwelling upon unnecessary word formations. In this way, it explains abstract ideas and can help to draw conclusions.

More than that, a visualization of the word is more engaging and interesting. While visual aids serve a unique role in a presentation, such as a picture, photos, videos, handouts, etc., visualization of words is also visible and very memorable. Indeed as K Sharma Suresh (2012) notes "psychologists and educators have found that the use of visual tools led to a retention of information rate three days after a meeting or other event that was six times greater than when information is presented by the spoken word alone" (Suresh, 294). Rather than to hear or read words, phrases, and sentences the audience is able to see the word within a new perspective, which may also give rise to further ideas. Therefore, the visualization of words is a tool for invention making it able to move beyond the use of synonyms and the standard way of thinking.

Recommendations

Visualizations are strongly recommended for explaining sophisticated texts. The examples might be from institutional documents, law, books, and research papers. They will be very helpful to help people with diverse education, culture, or perspective.

In work environments, visualization will be a motivational factor to facilitate the communication between employees and managers. Long e-mails and reports are considered as time-consuming, particularly in immediate decision takings. Future strategies of the company should be visualized to make them clear for any employee at any level. In other words, visualization provides better comprehension and learning.

Finally, the visualization is improving the way of creative thinking. Exploring the words' connotations will permit the professionals to express their ideas by using a wide vocabulary. Like in the case of lying and fabrication, metaphors will lead audiences and readers to develop the eighth sense in reading and listening.

Conclusion

This study illustrated and explained the connection between the word "lying" and "fabrication" through the visualization of the words via a tree depiction of "lying" and its branches "fabrication" and "prevarication". And provided a semantic approach to the relationship between "lying" and "fabrication". It also presented the benefits of visualization of words, such as a better understanding of a document or text, how the words are grouped, and compared patterns in a text. This study, therefore, does not only present an artistic connection between the words "lying" and "fabrication" but also offers a new perspective into diverse studies and approaches.

GLOSSARY[3]

WORD	TEXTUAL THESAURUS
ABANDONMENT	(noun) "defection, desertion; withdrawing support or help despite allegiance or responsibility his abandonment of his wife and children left them penniless." (noun) "forsaking, desertion; the act of giving something up."
ALLEGORY	(noun) "apologue, parable, fable; a short moral story (often with animal characters)." (noun) "emblem; a visible symbol representing an abstract idea."
APOLOGUE	(noun) "apologue, allegory, parable, fable; a short moral story (often with animal characters)."
APOSTASY	(noun) "tergiversation; the act of abandoning a party for cause." (noun) "defection, renunciation; the state of having rejected your religious beliefs or your political party or a cause (often in on-pe of opposing beliefs or causes)."
ASSEMBLY	(noun) "fabrication; the act of constructing something (as a piece of machinery)." (noun) "gathering, assemblage; the social act of assembling; they demanded the right of assembly." (noun) "forum, meeting place; a public facility to meet for open discussion."
CONSIST	(verb) "comprise, be composed of, The land he conquered comprised several provinces; What does this dish consist of?"

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[3] The words and their meaning are cited from GraphWords.

	(verb) "dwell, lie, lie in, originate (in), The problems dwell in the social injustices in this country."
DEBUNKING	*(noun) "repudiation the exposure of falseness or pretensions the debunking of religion has been too successful."*
DEFAULT	*(noun) "default option; an option that is selected automatically unless an alternative is specified."* *(noun) "on-perform, nonremittal; loss resulting from failure of a debt to be paid."* *(noun) "on-perform, nonremittal; act of failing to meet a financial obligation."* *(verb) "default on; fail to pay up."*
DEFAULT ON	*(verb) "default, fail to pay up"*
DEFAULT OPTION	*(noun) "default, an option that is selected automatically unless an alternative is specified."*
DEFECTION	*(noun) "desertion, abandonment; withdrawing support or help despite allegiance or responsibility;* *his abandonment of his wife and children left them penniless."* *(noun) "apostasy, renunciation; the state of having rejected your religious beliefs or your political party or a cause (often in on-pe of opposing beliefs or causes)."*
DESERTION	*(noun) "defection, abandonment;* *withdrawing support or help despite allegiance or responsibility his abandonment of his wife and children left them penniless."* *(noun) "forsaking, abandonment; the act of giving something up."*
DODGING	*(noun) "shunning, turning away, avoidance; deliberately avoiding; keeping away from or preventing from happening."* *(noun) "evasion, escape; on-performance of something distasteful (as by deceit or trickery) that you are supposed to do; his evasion of his clear duty was reprehensible; that escape from the consequences is possible but unattractive."* *(noun)" scheme, dodge; a statement that evades the question by cleverness or trickery."*
DWELL	*(verb) "brood, think moodily or anxiously about something."* *(verb) "harp, come back to, Don't dwell on the past; She is always harping on the same old things."* *(verb) "live, inhabit, populate, inhabit or live in; be an inhabitant of, People lived in Africa millions of years ago; The people inhabited the islands that are now deserted; this kind of fish dwells near the bottom of the ocean; deer are populating the woods."* *(verb) "consist, lie, lie in, originate (in),* *The problems dwell in the social injustices in this country."* *(verb) "inhabit, exist or be situated within, Strange notions inhabited her mind."*

EMBLEM	(noun) "allegory, a visible symbol representing an abstract idea."
EQUIVOCATION	(noun) "tergiversation; falsification by means of vague or ambiguous language." (noun)" evasiveness, prevarication; intentionally vague or ambiguous." (noun) "evasion; a statement that is not literally false but that cleverly avoids an unpleasant truth."
ESCAPE	(noun) "flight, the act of escaping physically, he made his escape from the mental hospital; the canary escaped from its cage; his flight was an indication of his guilt." (noun) "escapism, an inclination to retreat from unpleasant realities through diversion or fantasy romantic novels were her escape from the stress of daily life; his alcohol problem was a form of escapism." (noun) "dodging, evasion, on-performance of something distasteful (as by deceit or trickery) that you are supposed to do his evasion of his clear duty was reprehensible; that escape from the consequences is possible but unattractive."
EVASION	(noun) "dodging, escape; on-performance of something distasteful (as by deceit or trickery) that you are supposed to do; his evasion of his clear duty was reprehensible; that escape from the consequences is possible but unattractive." (noun)" on-perform; the deliberate act of failing to pay money; his evasion of all his creditors; he was indicted for non-payment." (noun) "equivocation; a statement that is not literally false but that cleverly avoids an unpleasant truth."
EVASIVENESS	(noun) "equivocation, prevarication ; intentionally vague or ambiguous."
FABLE	(noun) "legend, fable; a story about mythical or supernatural beings or events." (noun) "apologue, allegory, parable, fable; a short moral story (often with animal characters)." (noun) "fable, fabrication, fiction; a deliberately false or improbable account."
FABRICATION	(noun) "prevarication, lying, the deliberate act of deviating from the truth." (noun) "assembly; the act of constructing something (as a piece of machinery)." (noun) "manufacture, manufacturing; the act of making something (a product) from raw materials the synthesis and fabrication of single crystals; an improvement in the manufacture of explosives; manufacturing is vital to Great Britain." (noun) "fictionalisation, fictionalization; writing in a fictional form." (noun) "fable, fiction; a deliberately false or improbable account."
FICTION	(noun) "fiction; a literary work based on the imagination and not necessarily on fact." (noun) "fable,

	fabrication, fiction; a deliberately false or improbable account."
FICTIONALISATION	*(noun) "fabrication, fictionalization; writing in a fictional form." (noun) "fictionalization; a literary work based partly or wholly on fact but written as if it were fiction."*
FORGOING	*(noun) "renunciation, forswearing; the act of renouncing; sacrificing or giving up or surrendering (a possession or right or title or privilege etc.)."*
FORSWEARING	*(noun) "renunciation, forgoing; the act of renouncing; sacrificing or giving up or surrendering (a possession or right or title or privilege etc.)."*
LIE	*(noun) "prevarication, a statement that deviates from or perverts the truth." (noun) "Lie, Trygve Halvden Lie, Trygve Lie, Norwegian diplomat who was the first Secretary General of the United Nations (1896-1968)." (verb) "lie down,assume a reclining position lie down on the bed until you feel better."* *(verb) "dwell, consist, lie in, originate (in)The problems dwell in the social injustices in this country."* *(verb) "rest, have a place in relation to something else. The fate of Bosnia lies in the hands of the West; The responsibility rests with the Allies."*
LIE DOWN	*(verb) "lie, assume a reclining position lie down on the bed until you feel better."*
LIE IN	*(verb) "dwell, consist, lie, originate (in), The problems dwell in the social injustices in this country."*
LYING	*(noun) "fabrication, prevarication; the deliberate act of deviating from the truth.".*
MANUFACTURE	*(noun) "industry the organized action of making of goods and services for sale;* *American industry is making increased use of computers to control production."* *(noun) "fabrication, manufacturing; the act of making something (a product) from raw materials;* *the synthesis and fabrication of single crystals;* *an improvement in the manufacture of explosives;* *manufacturing is vital to Great Britain."* *(verb) "cook up, fabricate, invent, make up; make up something artificial or untrue."* *(verb) "construct, fabricate; put together out of artificial or natural components or parts; the company fabricates plastic chairs; They manufacture small toys; He manufactured a popular cereal."*
MANUFACTURING	*(noun) "fabrication, manufacture; the act of making something (a product) from raw materials; the synthesis and fabrication*

	of single crystals; an improvement in the manufacture of explosives; manufacturing is vital to Great Britain."
NONPAYMENT	*(noun) "evasion; the deliberate act of failing to pay money; his evasion of all his creditors; he was indicted for non-payment." (noun) "default, nonremittal; loss resulting from failure of a debt to be paid." (noun) "default, nonremittal; act of failing to meet a financial obligation."*
NONREMITTAL	*(noun) "default, on-perform; loss resulting from failure of a debt to be paid." (noun)" default, on-perform; act of failing to meet a financial obligation."*
PARABLE	*(noun)" apologue, allegory, fable; a short moral story (often with animal characters)."*
PREVARICATION	*(noun) "fabrication, prevarication, lying; the deliberate act of deviating from the truth." (noun) "equivocation, evasiveness, prevarication; intentionally vague or ambiguous." (noun)" prevarication, lie; a statement that deviates from or perverts the truth."*
RENOUNCEMENT	*(noun) " renouncement, renunciation; an act (spoken or written) declaring that something is surrendered or disowned."*
RENUNCIATION	*(noun) "forgoing, forswearing; the act of renouncing; sacrificing or giving up or surrendering (a possession or right or title or privilege etc.)." (noun) "repudiation; rejecting or disowning or disclaiming as invalid; Congressional repudiation of the treaty that the President had negotiated." (noun) "renouncement; an act (spoken or written) declaring that something is surrendered or disowned." (noun) "apostasy, defection; the state of having rejected your religious beliefs or your political party or a cause (often in on-pe of opposing beliefs or causes)."*
RENOUNCEMENT	*(noun) "renouncement, renunciation; an act (spoken or written) declaring that something is surrendered or disowned."*
REPUDIATION	*(noun) "debunking; the exposure of falseness or pretensions; the debunking of religion has been too successful." (noun) "renunciation; rejecting or disowning or disclaiming as invalid; Congressional repudiation of the treaty that the President had negotiated."*
REST	*(noun) "relaxation, repose, ease, freedom from activity (work or strain or responsibility), took his repose by the swimming pool."*

	(noun) "balance, residual, residue, residuum, remainder, something left after other parts have been taken away, there was no remainder; he threw away the rest; he took what he wanted and I got the balance." *(noun) "sleep, quietus, eternal rest, eternal sleep, euphemisms for death (based on an analogy between lying in a bed and in a tomb), she was laid to rest beside her husband; they had to put their family pet to sleep."* *(noun) "respite, rest period, relief, a pause for relaxation, people actually accomplish more when they take time for short rests."* *(verb) "remain, stay, stay the same; remain in a certain state, The dress remained wet after repeated attempts to dry it; rest assured; stay alone; He remained unmoved by her tears; The bad weather continued for another week."* *(verb) "take a breather, breathe, catch one's breath, take a short break from one's activities in order to relax".* *(verb) "pillow, rest on or as if on a pillow, pillow your head."* *(verb) "roost, perch, sit, as on a branch, The birds perched high in the tree."* *(verb) "repose, reside, be inherent or innate in;"* *(verb) "lie, have a place in relation to something else, The fate of Bosnia lies in the hands of the West; The responsibility rests with the Allies."*
TERGIVERSATION	*(noun)" apostasy; the act of abandoning a party for cause."* *(noun) "equivocation; falsification by means of vague or ambiguous language."*
TRYGVE HALVDEN LIE	*(noun) "Lie, Trygve Halvden Lie, Trygve Lie, Norwegian diplomat who was the first Secretary General of the United Nations (1896-1968)."*
TRYGVE LIE	*(noun) "Lie, Trygve Halvden Lie, Trygve Lie, Norwegian diplomat who was the first Secretary General of the United Nations (1896-1968)."*

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