The Use of Cryptology in Concrete Poetry: Cummings' Selected Poems *r-p-o-p-h-e-s-s-a-g-r* (1923) and *ygUDuh* (1923)

استخدام علم التشفير في الشعر الخرساني: قصائد كامينغز r–p–o–p–h–e–s–s–a–g–r (1923) و ygUDuh (1923)

Moulai Hacene Yacine
University of Mostaganem Ibn Badis- ALGERIA
moulaihacene.yacine@univ-mosta.dz

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Abstract

The aim of this paper is to facilitate the process of reading and decrypting concrete poetry for non-native English learners. This is done by reference to the consolidation of the field of cryptology along with that of literature. This framework deals with the implementation of cryptologic tools on Cummings' poems *r-p-o-p-h-e-s-s-a-g-r* (1923) and *ygUDuh* (1923).

The methodology taken focuses on e. e. cummings's style of writing/ disfiguring norms of language where parts of sentences are understood partly in terms of themselves but also in terms of their relationship with other expressions in the poem. The use or implementation of cryptology on literary genres cannot only help us decipher its language, but also assist us in reaching an adequate literary interpretation.

Keywords: concrete poetry, cryptology, e.e cummings' poetry, encryption/ decryption, literary appreciation.

ملخص

يعتبر الشعر الخرساني من أصعب الأجناس الأدبية إذ أن تشكيله معقد في اعتماده على إدماج أشكال وصور زيادة على اللغة المستخدمة، ويهدف هذا المقال إلى محاولة تسهيل كيفية قراءة الشعر الخرساني باللغة الإنجليزية لغير الناطقين بها، و يتم ذلك بالرجوع إلى توظيف مجال علم التشفير كوسيلة أو بالأحرى كمنهجية تسهل على القارئ فك غموض قراءة هذا النوع من الشعر.

لبلوغ ذلك الهدف لقد تم من خلال هذا البحث، الاعتماد على أعمال الأديب و الفنان الأمريكي إدوارد إستالن كامينجز(1894 – 1962)بحيث تم أخذ القصيدتين ***r–p–o–p–h–e–s–s–a–g–r*** (1923) و***ygUDuh*** (1923) أنموذجا، حيث أثبتت الدراسة أن علم التشفير له دور هام في تسهيل قراءة الشعر الخرساني وتقديم للقارئ آليات تساعده في فك أي تشفير.

كلمات مفتاحية: الشعر الخرساني، علم التشفير، شعر. كامينغز، التشفير / فك التشفير، التقدير الأدبي.

***Corresponding author**: Moulai Hacene Yacine, **e-mail:** mouliahacene.yacine@univ-mosta.dz*

1. INTRODUCTION

Dealing with concrete poetry, perhaps, would not be of a sufficient value without dealing first with the importance of reading. Indeed, reading can be considered as one of the most must-dealt-with skills in literary studies; as it is considered as the key element towards a literary interpretation. Yet, many readers, non-native English learners generally and Algerian English students specifically, are unaware of the importance of reading, and the first hindrance they encounter when reading a concrete poem is the failure of reading it. The latter could be observed in the linguistic level where readers find the language encrypted in a way that seems impossible to decrypt, let alone other obstacles. Accordingly, Hayne (2007) classifies the common difficulties that students face when reading literature into: (i) linguistic difficulties (ii) connection difficulties (iii) cultural difficulties.

What is interesting about the language of poetry is that poets hardly ever use a straightforward and clear style in expressing/verbalizing what they mean; they always leave it for the reader to decipher and interpret the poem. In this case, the reader is obliged to read, understand, and analyse the poem so that s/he reaches its significance. However, this process is hard to accomplish when it comes to concrete poetry, as if poetry is not complicated enough - with its sophisticated use of language and deviations - concrete poetry does not make it any easier, where readers find themselves facing a poem questioning: **what kind of poem is this?** (assuming that they are aware that it is a poem) and **how am I to read it? How am I to decrypt such form of poetry?** To put it differently, readers, in these cases, happen to go through a coded text; or more precisely, an encrypted text that needs a decryption. Therefore, this paper will provide readers with a model that facilitates the reading of concrete poetry taking as an exemplary prototype the poems of e. e. cummings'(1923:64) as entitle d:*r-p-o-p-h-e-s-s-a-g-r* and *ygUDuh*, selected from the *Tulips and Chimneys*, the 1922 manuscripts under the sequence of *Impressions*. (See Appendix A & B)

2. The Notion of Cryptology

The word cryptology is derived from the Greek term 'κρυπτός /kryptós' that stands for 'hidden/secret' and 'graphien' which stands for 'write' (Koheim, 2007, p.1). Accordingly, the meaning of this enquiry, that is the etymology of cryptology, is best interpreted as 'secret writing'. However, when it comes to defining the concept of cryptology in a more technical manner; the Oxford English Dictionary explains it as:

> A secret manner of writing, either by arbitrary characters, by using letters or characters in other than their ordinary sense, or by other methods intelligible only to those possessing the key; also anything written in this way. Generally, the art of writing or solving ciphers. (cited in Talbot and Welsh, 2006, p.1)

Cryptology, accordingly, urges its users to deviate from the normal use of language whether it is letters, characters, numbers, or else. Such a deviation is intended and understood only by those who are intended to receive the coded message. In this regard, the International Journal of Computer Science Issues asserts that:

> Cryptology is the practice and study of techniques for secure communication in the presence of third parties (called adversaries). More generally, it is about constructing and analyzing protocols that overcome the influence of adversaries and which are related to various aspects in information security such as data confidentiality, data integrity, and authentication. (2012, p.583)

According to the above-mentioned citation, cryptology is about secure communication which implies that the data of the message is highly classified and other parties, beside the intended ones must not possess it. Therefore, data confidentiality, integrity, and authentication are valuable elements for cryptology to protect.

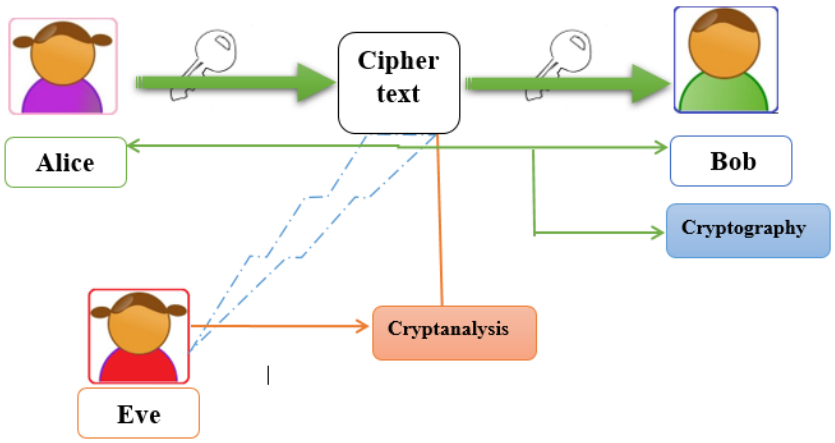
In this respect, Stamp and Low (2007) define cryptology as "the science of making and breaking secret code" (p.2). Although Stamp's and Low's definition of cryptology seems concise and precise, it uncovers a lot about this domain. On the one hand, it is the science that enables people to communicate via secret codes which means that unwanted parties beside the sender and the receiver cannot decode that secured communication, and on the other, cryptology is also involved with the breaking of those codes which implies that the secure communication could be broken or rather interrupted and hacked. However, before delving deeper into how to make and break secured communication, we should first understand how cryptology works.

2.1 The Deciphering of Cryptology

If there is anything in the field of cryptology that one must be acquainted with, that would be the terms *encryption* and *decryption*. Talbot and Welsh (2006), Stamp and Low (2007), and Pretty Good Privacy [PGP] (2003) consider encryption and decryption as the core of cryptology, they allow users to encrypt and decrypt any text. However, perhaps it will not be appropriate if we don't speak about the content of messages. Data that can effortlessly be read, understood, and is easily accessed is called *plaintext* or *cleartext*, and the data that is coded and cannot be read at first sight is called *ciphertext* knowing that both of encryption and decryption deal with plaintext and ciphertext.

Consequently, PGP (2003) defines these terms accordingly, whereby, Encryption means the process of converting a readable text (that is plaintext) into an unreadable one (which is ciphertext). Whereas Decryption is the reverse of the encryption process, that is to say, going backward from ciphertext to the original plaintext. The key to the ciphertext must be available; thanks to the key which is shared between these two individuals (sender/receiver), this procedure could be successful. The figure below provides an illustration of how the mechanism of cryptology functions (see Figure 1).

Figure 1: The mechanism of cryptographic process



Note: Reprinted from MoulaiHacene (2015, p. 19)

The above figure shows how the process of cryptology functions. Dooley (2013) asserts that "Alice and Bob (they are always called Alice and Bob) want to exchange messages with each other and Eve

wants to eavesdrop" (pp.88-89). Indeed, the participants in Figure 01 are divided into two parts. The first part is that of Alice and Bob. The latter, are the ones who apply cryptology as it should be without breaking any maxim, that is to say, converting what is readable (plaintext) into the unreadable text (ciphertext), and of course, they must agree upon a pre-shared key so that they reverse the operation when communicating. So far, what Alice and Bob do seem so typical and familiar in the domain of cryptology, why? Simply because they are breaking no rule that this field necessitates. On the other hand, the second part is that of Eve. The latter is not another random name given to a character, it is like Alice and Bob, Eve's name is derived from the word "Eavesdropper". Eavesdropping means listening to a conversation with discretion, it is much more like spying. In cryptology, Eve is considered as the third-part which is not allowed to take part in Alice's and Bob's communication. Here, Eve is going to intercept the communication and tries to decode the plaintext and to some extent even plays the role of Alice or Bob when possible. In other words, she performs the role of the sender or the receiver. However, Eve's decoding of Alice's encrypted message is totally different from that of Bob's, in the sense that Eve neither possesses nor obeys any presupposed set of rules.

2.2 Types of Cryptology

If we step onto the stage of the history of Cryptology, we are going to see that one of the most known types of enciphering is Caesar's Cipher, also known as Cipher; substituted. This type, to give an explanation, is considered to be one of the first methods of concealing written messages. In addition to that, other cryptosystems emerged through time naming, for example, the Shift Cipher, the Substitution Cipher, the Affine Cipher, the Vigenere Cipher, the Hill Cipher, the Permutation Cipher, Stream Ciphers (Stinson, 2006). However, these methods are not the only methods that cryptography witnessed, other more sophisticated forms and approaches evolved through time especially the time that we are living now, the digital world. Yet again, light is shed on a particular cryptologic approach, otherwise called, ***steganography*** which is defined as: "the science of information hiding. Here we do not want to protect the secrecy of an information only, we also want to make sure that any unauthorized party has no evidence that the information even exists(for instance, by watermarking)" (Vaudenay, 2006, p.3).

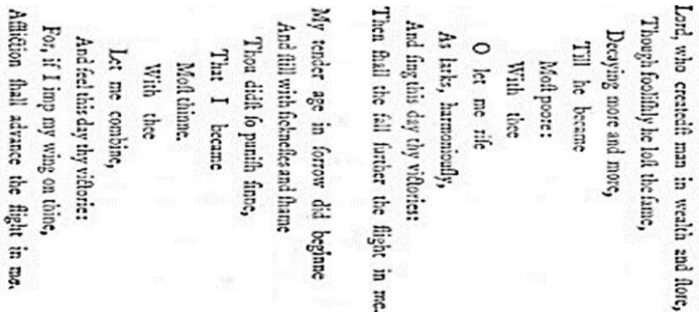
2.3 Concrete Poetry

If we iconize each artist out of his domain, we are going to find that s/he is a masterpiece maker at what s/he does; Beethoven in music, Shakespeare in play writing, Leonardo da Vinci in painting and many other icons. When it comes to poetry, it is an art of its own merit with how poets use language in their artistic creations, there are great poets out there such as Robert Frost, Pablo Neruda, Emily Dickinson**,** Edgar Allan Poe, etc. However, for some poets who dare experimenting with new forms, there were not enough, these as users of concrete poetry took this art to a whole new level; by mixing and merging it with visual art and by using language in contrast to any norm that its grammar stands for. This gave birth to a new kind of poetry which is called Concrete Poetry. As its name implies; Draper (1971) defines it as:

> The creation of verbal artifacts which exploit the possibilities, not only of sound, sense, and rhythm−the traditional fields of poetry−but also of space, whether it be the flat, two-dimensional space of letters on the printed page, or the three-dimensional space of words in relief and sculptured ideograms. (pp. 329-40)

Concrete poetry, accordingly, is a mixture of words and symbols; words become live into a shape of symbols, that's why when dealing with concrete poetry one may come across words such as visual poetry

and calligramme. However, each type has evolved to have a distinct meaning of its own. Concrete poetry may seem new as it is true that it was till 1950's its concept made appearance by a group of Brazilian writers called the *Noigandres* led by Carlos Drummond de Andrade and Augusto de Campos who developed an interest in this form of poetry (Greene et al, 2012).However, concrete poetry once was known as '*Pattern Poetry'* and its origins root back to Greek Alexandria of the third century B.C, where poems used to be written on objects such as vases, swords, axe hand, even on eggs (Vaughn, 2008). One of the oldest shaped poems is that of George Herbert (1593-1633) during the Elizabethan movement using a shape of wings and altar in titled '*Eastern Wings*' as cited in Wilcox (2007, p.143):



Most people are not familiar with this kind of poetry; at this point (as illustrated in the previous poem), it may seem as an ordinary poem written in the shape of wings and an altar, however, concrete poetry is more difficult and complicated than that and it could get really confusing. *r-p-o-p-h-e-s-s-a-g-*; a poem written by e. e. Cummings (poem 13 from the 1935 volume *No Thanks* (CP 396-397)), which could be very challenging and hard even to read, as scrambled words are used along with nonsensical use of punctuation.

```
                    r-p-o-p-h-e-s-s-a-g-r
              who
 a)s w(e loo)k
 upnowgath
         PPEGORHRASS
                 eringint(o-
 aThe):l
       eA
         !p:
S                                  a
            (r
 rIvInG                .gRrEaPsPhOs)
                                to
 rea(be)rran(com)gi(e)ngly
 ,grasshopper;
```

At first sight, it may seem, for anyone who is not familiar with concrete poetry, that this text is far beyond what poetry looks like. Similarly, one might think that whoever wrote *r-p-o-p-h-e-s-s-a-g-r* loaded some words and punctuations in a shotgun, cracked it, and then fired it on the paper, however, Cummings' poem is far beyond that, as it deals with natural and physical creatures, and is thus intentional and rational as well.

3. Methodology

The study at hand aims at facilitating the reading of concrete poetry for non-native English students and raising their awareness of reading literary texts. In this regard, Cummings' selected poems *r-p-o-p-h-*

*e-s-s-a-g-r*and *ygUDuh* are neither coincidental nor arbitrary, yet, the selection of these two poems is intentional and deliberate based on a particular set of criteria. The poems at hand share particular aspects such as newness, ambiguity, vagueness…etc. And indeed, few people are acquainted with this kind of poetry and few can read them after multiple attempts. These poems display the treats of Cummings' way of writing, starting with his name, which is associated with the unconventional use of capitalization and punctuation leading to his reliance on unusual skills, techniques, and forms. The latter, disturb the readers both at the conscious as well as at the subconscious levels as they encounter this unfamiliar way of writing poetry and challenge their impatience. In this regard, Abdel Azim ElShiekh et al (2012) claim that:

> Cummings' ideogram poems are puzzles waiting solved. This type of poetry was a dramatic change to the common poetry people were used to reading. Using this irrational form, E. E. Cummings encouraged people to open their minds to alternative ways of thinking. (p.104)

Accordingly, he unfamiliarity of this kind of poems leads readers to opt for alternative ways to decode the language used, as this genre can teach us in a most extraordinary manner the tastefulness, the importance and the appreciation of the fusion between poetry and art, sound and sense, and image and form.

3.1 Participants and the Procedure

The participants are thirty Master-students of Literature of the Department of English - University of Mostaganem, Algeria. The procedure that the researcher adopted has been divided into three stages: a pre-test, lecturing sessions, and a post-test.

The first stage is a kind of a pre-test in which students are given a questionnaire (See appendix C) to check their familiarity/unfamiliarity with Cummings' selected poems. This is done, also, to confirm the difficulty of the selected poems and the students' unfamiliarity with its genre. The second stage is a set of sessions scheduled for a whole semester, two sessions per week taking into consideration that the students of this department do not study Cryptology since it is not included in their syllabus. Thus, these sessions aim at making the participants acquainted with the field of cryptology and making them conversant with its characteristics, processes, and implementation.

3.1.1 Pre-test

Thirty answers are collected from the participants in order to measure their familiarity with the selected poems *ygUDuh* and *r-p-o-p-h-e-s-s-a-g-r* by e.e cummings (see appendix A& B). It is pretty obvious that the students did not recognize any of the aforementioned poems; some of their reactions are as follows where Student One asserted: '*…I can see a text with no coherence or cohesion. Yet I know it must have a meaning*.' Student Two stated: '*This figure seems very complicated to understand, full of symbols and words that we cannot understand'*. Where Student Three claimed: '*It is a kind of unorganized, chaotic figure. I think the speaker wants to describe something but he finds a difficulty.*' Student Four, on the other hand, points out: '*What kind of English is this figure? It is meaningless, ambiguous, and senseless.*' Finally, Student 5 response was: '*It seems just like kind of game in which we are supposed to get the meaning of the text*.'

To this end, students seem so perplexed as they find the poems so puzzling and hard to read. At the time of the test, the participants looked so confused; some of them were even sceptical about whether the text given to them was poetry or not. They did not know where to start to read the poem *r-p-o-p-h-e-s-s-a-g-r* or even correctly pronounce the word *ygUDuh* of the second poem.

The researcher concluded from the pre-test that all of the participants had no idea how to read the selected poems or, for that matter, had any idea about what concrete poetry is. All of them completely failed to read the word 'r-p-o-p-h-e-s-s-a-g-r', let alone the rest of the poem. Similarly, most of them did not realize that the poem *YgUDuh* describes a painting of nature.

3.1.2 Lecturing Sessions

Before providing the students with an alternative way to read the poems, it is important to provide them with a background knowledge about the field of cryptology. To achieve this task, the researcher designed a syllabus that helps the students be equipped with the appropriate knowledge and tools so that they will be able to read unreadable poems. Since the field of cryptology is a wide field and requires a heavy knowledge and the participants have no idea about this field, the designed syllabus is an introduction to the field. In this context, the students are introduced to the notion of cryptology where most of the key concepts are defined. In addition to that, a brief historical background is provided for the sake of providing them with a deep insight of how rooted and ancient this field is. After that, the researcher presents the most well-known methods/types of cryptology; this section is essential as it provides the students with different processes that they can use to decrypt a given encrypted/coded text.

Cryptology has a systematic way in dealing with encrypting and decrypting texts (as illustrated in Figure 01) however, the cryptologist, more often than not, finds himself unable to decrypt the coded text because he does not possess the right key, therefore, he is obliged to improvise and hack the target text and by doing so, he is adopting cryptanalysis. The latter is a very indispensable asset in this research, therefore, the researcher made sure that the students comprehend the importance of this process, in case they encounter a ciphered text where they do not possess the right key to decipher it, they are required to improvise and bring new methods to decrypt it.

3.1.3 Post-Test

By the end of the lecturing sessions, which took a whole semester, the researcher has noted that the students' literary appreciation towards concrete poetry has improved. Thanks to the lectures provided to them about cryptology, they were able to decode the language used in both poems whereby, 'r-p-o-p-h-e-s-s-a-g-r' means 'grasshopper' when unscrambled and the poem *YgUDuh* needs a painting so that the poem makes sense (See appendix). Most students could extract cryptologic elements from the poems, therefore, reading them became much easier unlike their first attempt in the pre-test. Their gained knowledge concerning cryptology really helped them see through the coded language used in the selected poems.

To support the findings of the research, another questionnaire (See appendix D)was distributed to the same participants in order to see the effect of implementing cryptologic techniques on the way of decoding and reading encrypted concrete poems. The results showed that most of the students agree that cryptology really helped them and provided them with a bird's eye to decode encrypted language in general and literary language in particular. The findings also revealed that the students' literary

appreciation towards concrete poetry has increased unlike before when they were not able to read/decode its language.

The questionnaire that was given to the participants included some questions about cryptology. At this point, the students were asked to choose one of the following answers:

After the lecturing sessions and having established a considerable knowledge about the field of cryptology and concrete poetry, I would say that:

1. Cryptology techniques helped me read the encrypted poems.
2. Cryptology is a complicated and puzzling field; I could not grasp its content.
3. Concrete poems are difficult to read even with the use of cryptology.

The table below shows the students' reaction towards the use of, or implementing, cryptology in the field of literature. Prior to the given results, most of the participants agreed that the use of cryptology can be beneficial and prosperous in raising the students' literary appreciation.

Table 1. The Students' Feedback

Questions	**Students' Answers**	
	Number	**Percentage**
Question One	26	87%
Question Two	3	10%
Question Three	1	3%

4. CONCLUSION

The study at hand attempted to help non-native English learners to easily read a concrete poem without effecting or directing their own literary interpretation. Based on the final results that were gathered from the post-test, the researcher has concluded that cryptology as a scientific tool has a significant place among literary studies and revealed that it is an appropriate approach to facilitating the reading of concrete poems. The fusion between these two scientific fields such as cryptology and literature upgrade the field of interpreting literary texts to a more advantageous level as well as it increases the students' literary appreciation of concrete poetry.

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6. Appendices

A. The poem 'ygUDuh'

The first poem entitled ygUDuh (e. e. cummings, 1923:547) is selected from *lxl [One Times One]* (1944) under the sequence of '*1*'.

ygUDuh
ydoan
yunnuhstan
ydoan o
yunnuhstan dem
yguduh ged

yunnuhstan dem doidee
yguduh ged riduh
ydoan o nudn
LISN bud LISN
dem
gud
am
lidl yelluh bas
tuds weer goin

duhSIVILEYEzum

B. r-p-o-p-h-e-s-s-a-g-r (1923)

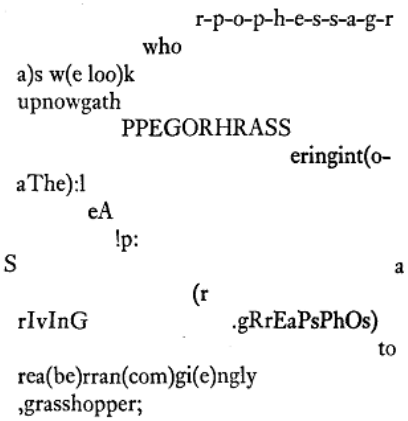
The second poem entitled *r-p-o-p-h-e-s-s-a-g-r* (E. E. Cummings, 1923, p.396) is selected from *No Thanks*, the 1935 manuscripts under the sequence of '*Initial Dedication*'.

r-p-o-p-h-e-s-s-a-g-r

who
a)s w(e loo)k
upnowgath
PPEGORHRASS
Eringint(o-
aThe):l
eA
!p:
S a
(r
rIvInG .gRrEaPsPhOs)
rea(be)rran(com)gi(e)ngly
,grasshopper;

C. The Pre-test Questionnaire

Figure One:



What can you say about figure one?

……

……

……

……

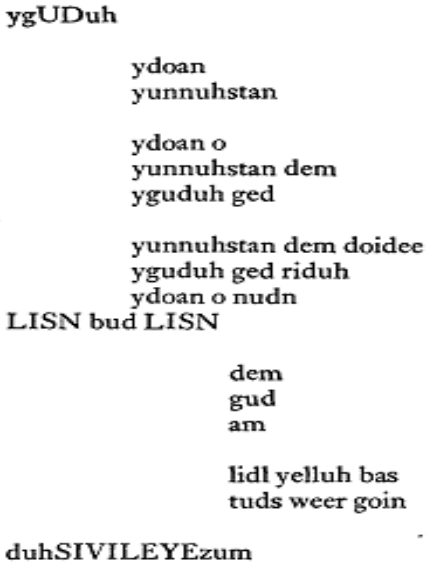
……

……

……

……

Figure Two:



1. What does figure two show?

   a. Diagram **b.** Poem **c.** Painting **d.** Other…….

2. **In which language do you think figure two is written?**

   a. Latin b. Turkish c. Indian d. English e. Other …….

3. **Can you read figure two?**

   Yes No

   a. If yes, s it speak about?

   ……

   ……

   ……

D. Post-test Questionnaire

After the lecturing sessions and having established a considerable knowledge about the field of cryptology and concrete poetry, I would say that:

1. Cryptology techniques helped me read the encrypted poems.
2. Cryptology is a complicated and puzzling field; I could not grasp its content.
3. Concrete poems are difficult to read even with the use of cryptology.