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Introduction

Ray Kurzweil's cybernetic poet (RKCP) (Kurzweil (1)) is an artificially intelligent application which mimics the human poetry writing process. In this paper the question whether or not this indeed the case is examined. It is concluded that RKCP does not write poetry. The RKCP's failure is argued from three perspectives:

1) it fails to meet philosophical considerations of language as discussed by Austin and Strawson,
2) it fails to meet a linguistically-motivated definition of language, and
3) it fails to meet stated goals for poetry as presented by the poetry critics Plato, Kant, and Wordsworth.

RKCP is judged of having passed a simplified version of the Turing test as a result of the judgement of people who have read samples of RKCP output (the RKCP also produces haikus) These subjects cannot successfully differentiate the RKCP output from poetry written by published poets. However, such a simplified test can only be said to confirm a weak version of artificial intelligence, such as the following:

"Artificial Intelligence (AI) is the activity of providing such machines as computers with the ability to display behavior that would be regarded as intelligent if it were observed in humans," [Holsapple and Whinston, p. 4].

Finally, RKCP is yet another application of markov models to the problem of language, a solution which Chomsky proved to be inadequate in his 1958 paper "Three models for the description of language," (Chomsky2). In this paper, Chomsky uses his infamous sentence "colorless green ideas sleep furiously," that while markov models are powerful enough to produce streams of symbols that have grammatical qualities resembling human language, they lack the power to mimic or incorporate the semantic and pragmatic components of language. RKCP output displays this behavior well. Below is an example of RKCP output produced after being trained on poetry by Ray Kurzweil, Robert Frost, and Wendy Dennis:

``I think i'll crash
I think I'll crash
Just for myself with God
peace on a curious sound
for myself in my heart?
And life is weeping
from a bleeding heart
of boughs bending
such paths of them,
of boughs bending
such paths of breeze
knows we've been there"

(Kurzweil1, p. 164)

In order to argue that the output of RKCP is not poetry, but mimicry of a meaningful human task, the RKCP will be discussed. First, [Strawson]'s argument regarding the importance of intent to the meaning of language will be presented. This will be followed by an exploration of a linguistically-motivated definition of language. Finally, poetic critic's definitions of, requirements of, and beliefs about poetry will be presented.

The Ray Kurzweil Cybernetic Poet

RKCP is implemented using a markov chain algorithm for transforming learned examples of poetry into output. RKCP is trained on input from a particular poet or a variety of poets, then outputs symbol sequences mimicking the grammatical patterns used by the poets.

RKCP has passed a simplified version of the Turing test, described below:

"A narrower concept of a Turing test is for a computer to successfully imitate a human within a particular domain of human intelligence. We might call these domain-specific Turing tests. One such domain-specific Turing test, based on a computer's ability to write poetry, is presented here.

The Kurzweil Cybernetic Poet is a computer program (written by the author) and provided
with an input file of poems written by a human author or authors. The program analyzes these poems and creates a word-sequence model based on the poems it has just read. It then writes original stanzas of poetry using the model it has created." (Kurzweil2)

(The reader can also take this test by visiting the URL where RKCP is discussed (http://www.kurzweilcyberart.com/poetry/rkcp_akindofturingtest.php3).)

Does successful passing of the simplified Turing test mean that RKCP actually writes poetry? It seems extraordinary that a software program which lacks consciousness, knowledge, or intent can produce output which qualifies as poetry. The ultimate conclusion of this paper is that it is, at worst, deceptive, and at best misleading, to claim that RKCP output is equivalent to poetry. RKCP output's ability to convince people that they have read poetry is analogous (Carroll)'s use of nonsense words placed in appropriate grammatical positions in the piece "Jabberwocky" --- to give people the sense that they have read a poem, and have some concept of what that poem is about.

Philosophy of Language and RKCP

Philosophy of language differs from criticism of literature in that it is concerned more with the meta-qualities of language in general rather than the experience of language by individual people. A most relevant work to this discussion is Strawson's “Intention and convention in speech acts,” (Strawson). One concept central to Strawson's discussion about speech acts is that of intention --- that is the desire, goal, or at least a particular attempt to communicate a specific message with a specific effect. Since Strawson couches his discussion of intention in the speech act theory of Austin, (Austin)'s theory is presented briefly.

According to Austin, three different speech act types exist:

1) locutionary,
2) illocutionary, and
3) perlocutionary.

A locutionary act is the act of making an utterance. The utterance must be of a meaningful word or sequence of words and must be uttered by something which has the ability to know the word or sequence of a word is such. Thus, says Austin, “…if a monkey makes a noise indistinguishable from 'go' it is still not a (locutionary) act,” [Austin, p. 32]. Illocutionary acts are locutionary acts with intent or desire to affect included. Illocutionary acts, however, do not have the power to effect the desired result. An example of an illocutionary act is the sentence:

"He asked me to get out of his way."

One might ask, with the intention of communicating to another that his path is obstructed and he would like it to be cleared. There is no way of knowing from the meaning of the act however, whether the intention is fulfilled. Finally, there is the perlocutionary act, the speech act which communicates that the intention was fulfilled:

"He pushed me out of his way."

Here, intent and completion are indisputable.

Strawson believes that each act, locutionary, illocutionary, and perlocutionary require intent to qualify as a speech act. This is why a monkey cannot complete a locutionary act --- it has no intent behind its words, regardless of how meaningful they seem to be.

Since RKCP strings sequences of symbols together with no intent, but based only upon statistical and probabilistic rules of how human poets put words together, the output cannot be said to have any meaning. Unless one cares to make a statement that no poetry can be said to have meaning, then a distinction must be made between the writing of poems by human poets, and the output of grammatically similar poem-like sequences of words by a computational machine.

Language, Meaning, and Poetry

A definition of language was given by Noam Chomsky in his book Knowledge of Language, (Chomsky2) that human knowledge of language consists of a grammar (or rules which describe the relationships between words), and words themselves. Debate has raged for years as to the definition and realization of grammar, but the original definition, though challenged, endures. Language has many uses and characteristics including, but not limited to, communication, intent, conversational directives, opacity, and vagueness. The list is long.

Discussion of the meaning of language can be divided into at least two different schools. The first takes the view that meaning of language is determined by its reference. Two proponents of this school are [Frege] and [Russell]. The second view, most closely associated with [Wittgenstein] is that language derives its meaning from its use. Both views are important to discussion of RKCP because each lends support to the argument that RKCP's output is not poetry:

1) it is not language (no syntactic relationships between words are known to RKCP, only probabilistic occurrences between pre-expressed symbols).
2) since it has no knowledge of what
the words reference, it has no
ability to know what they mean,
3) since is has no experience of how words are
used, it has no ability to know what they mean.

Poetic Criticism and RKCP

The views of five different critics of poetry are discussed
in this section. These critics are Plato, Kant, and
Wordsworth. Their views are included for the following
reasons. Plato's views criticism, though ancient, are still
influential and discussed. Kant was one of the most
important of the modern philosophers. His work, after that
of (Leibniz), is a precursor to much of modern,
contemporary, and post-modern philosophy of language.
Wordsworth is leading poet of his own time and an
enduring poet into the present.

Plato

A brief summary of Plato requires his belief that reality
exists as "forms" or "ideas" which humans cannot
perceive directly. Rather, we experience them, and so
experience reality through ``appearances'' which can be
deceptive. Plato, in his Republic is harsh:
" - Yet if he is not the maker, what is he in
relation to the bed?
- I think, he said, that we may fairly
designate him as the imitator of that
which others make,
- Good, I said; then you call him who
is third in the descent from nature an
imitator?
- Certainly, he said.
- And the tragic poet is an imitator,
and therefore, like all other imitators,
he is thrice removed --- from the
kind and from truth?
- That appears to be so.
" (Kaplan, p. 375)

Though taken out of context Plato’s low opinion of poets
and their resulting poetry is expressed in this passage.
Since poets can only write about appearances, poems can
only be about things which are not real --- they can only
imitate reality. Plato's ideas have special significance to
this examination of RKCP, because RKCP, a program
trained on other's writings which then mimics the word
patterns used by those writings cannot be classified as
anything other than an imitator.

Kant

In this paper, we are interested in Kant's views on poetry
rather than the more general problem of metaphysics and
a priori knowledge. Therefore, we use Kant's Critique of
Judgement (Kant1) rather than the more familiar Critique
of Pure Reason (Kant2).

The passage quoted below is selected to support two
points about RKCP's output as valid poetry. If the beauty,
 or meaning, of a poem is subjective, as Kant points out,
then if a reader experiences a poem as meaningful,
evocative, or beautiful, then that poem is meaningful,
evocative, or beautiful. However, a contradiction still
exists which results from Kant's statement that judgement
of poetry is "not logical but aesthetical." The
contradiction lies in the anomalous situation that the
RKCP works only from a logical framework which
strings words to together into statistically probable
sequences and lacks any notion, or intention, of esthetic
purpose. The question emerges, how can the subjective
reader find true esthetic purpose where none exists?

"In order to distinguish whether anything is
beautiful or not, we refer the representation, not
by the understanding to the object for
cognition, but by the imagination (perhaps in
conjunction with the understanding) to the
subject and its feeling of pleasure or pain. The
judgment of cognition, and is consequently not
logical but aesthetical, by which we understand
that whose determining ground can be not other
than subjective."

William Wordsworth was concerned that poetry should be
available and meaningful to all people --- including the
"common man" --- and believed that the person who
could write such poetry was a person who had heightened
senses to perceive the world, but who could also "convey
their feelings and notions in simple and unelaborated
expressions," (Wordsworth, p. 434). He asks, and
answers the question, who can be a poet:

``Taking up the subject, then, upon general
grounds, let me ask, what is meant by the word
poet? What is a poet? To whom does he
address himself? And what language is to be
expected from him? --- He is a man speaking to
men: a man, it is true, endowed with more
lively sensibility, more enthusiasm and
tenderness, who has a greater knowledge of
human nature, and a more comprehensive soul,
than are supposed to be common among
mankind...'' (Wordsworth, p. 437)

Again, we address these remarks to the ability and quality
of output of RKCP. While the program may train upon
the work of people who fit such qualities, and so produce
poetry, the same thing cannot be said of the RKCP.

Conclusion

RKCP fails to meet any of the necessary requirements for
producing meaningful output. Poetry, by its very nature,
is a most powerful vehicle for expressing meaning. The
word "meaning" is not used here to refer to the ability to
evoke a reaction a person who experiences. For example,
a sunny day can evoke feelings of happiness, though a sunny day has no "meaning." Rather, "meaning" refers to the intentional use of language to express ideas, impressions, beliefs, etc.

RKCP derives its effect as a result of evidence that an average person cannot consistently differentiate between its output and the poetry written by people. This does not, however, mean that RKCP is creating poetry for the following reasons:

- there is no intent, and therefore no meaning behind the sequences of words which it outputs,
- the machine itself has none of the characteristics deemed sufficient to qualify as a "poet,"
- finally, though the output samples resembles the grammatical behavior expected of poetry, there is no basis to purport, or believe, that the output has any sort of meaning.

RKCP is a clever application of markov models, and that is all.

References:


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