Poetic Abstraction at Attention Restoration: Investigating the Effects of Nature Based Poetry on Attention Restoration

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Abstract

Our lives are filled with things that constantly demand our attention, causing attention fatigue. According to Kaplan's Attention Restoration Theory (ART), spending time in natural environments tends to help in attention restoration. Further research suggests that abstractions of natural environments similarly aid in restoration. This paper looks at poetry as a medium for a nature experience, asking if nature based poetry is more restorative than non-nature based poetry. Five poems are selected in each category. A 30 minute long online between subjects experiment (n= 32) is conducted using the Backwards Digit Span (BDS) task and an adapted Perceived Restorativeness Scale (PRS). The results suggest no evidence of increased restoration on exposure to nature poetry by either direct measure of self-reports.

Keywords: ART, Nature, Poetry

1.   Introduction

Our lives are constantly filled with stimuli, both significant and trivial. This overabundance of data drains us, increasing stress levels and reducing cognitive ability (Kaplan, 1995). Fortunately, spending time in nature helps by allowing the brain to recover. According to Attention Restoration Theory (ART) posited by Kaplan and Kaplan, directed attention fatigue can be dealt with by exposure to situations where one can step away from the fatigue-inducing environment (1989). This new setting would also need to make sense, be fascinating (or attract attention effortlessly), and be compatible with the wants and needs of the person. Natural environments tend to check all those boxes. And, by attracting involuntary or effortless attention, natural environments permit the brain to recover depleted directed attention and improve cognitive performance (Kaplan, 1995).

Interestingly, this advantage of contact with nature also applies to abstractions of an experience in nature (Ex. Berman et al., 2008). This cognitive boost can also be observed from looking at a natural scene outside a window, viewing nature photographs and murals, listening to natural soundscapes, feeling movement associated with nature or in experiencing nature simulations in Virtual Reality. This raises the question- to which other mediums might this cognitive boost apply?

In this study, we look at poetry as a medium for creating an experience of nature. Poetry is an immersive medium. It has the ability to transport an audience and be coherent and fascinating, especially when created to explore and celebrate nature. It, thus, has the potential to be restorative.

While contact with nature is important, it might not always be directly possible. So, finding other mediums that can convey parts of nature, and be restorative, can help in those situations. Poetry is easy to access, and has lower barriers to entry as more technology intensive experiences. It requires no special equipment, and is possible to experience even if movement is limited. Moreover, understanding the media to which attention restoration applies allows us to better understand the cognitive capabilities of the brain, and perhaps even to reduce attention fatigue in daily life.

We will begin with a literature review focusing on Attention Restoration Theory and its abstractions, poetry and measurements of restorativeness. From these insights we will formulate the research question in section 3. We will cover the pilot study, done to select the poems in section 4, and the final experiment in section 5. This will be followed by the results and a discussion on their significance.

2.   Literature review

This literature review looks at the premise of Attention Restoration Theory, and some key details worth highlighting. We then go into the mediums through which a nature based restorative environment has been presented within the scope of Attention Restoration Theory. Since this paper focuses on poetry as a medium, we then look at relevant prior work

on poetry and fiction. This is followed by a review on tasks used to measure attention restoration and a brief summary of the section.

2.1 Attention Restoration Theory

Spending time in nature is often considered relaxing and refreshing. A proposed reason for this, suggested by Kaplan (1995), is that being in nature demands less of our directed attentional resources than being in urban ones, while still being engaging or "fascinating". In this model fascination is a type of attention that requires no effort. This gives our directed attention time to recover and be replenished, resulting in better performance in cognitively demanding tasks and stress recovery. He also suggests that to be restorative, an environment must also allow the person to get away or create distance between the self and the attention demand, it must be coherent and it must be compatible with a person's purpose. Nature tends to fulfill all of these requirements, making it a restorative environment (Kaplan, 1995).

One important consideration is that attentional resources and mental bandwidth are independent of each other (Basu et al., 2018). Activities like watching television are also fascinating, in that they demand less directed attention, but they leave less mental bandwidth for reflection, which reduces their restorativeness. Whereas, activities like relaxing at home may allow for more mental bandwidth, but the directed attentional demand is higher. To be restorative, an activity should engage soft fascination; it should have both a low directed attentional demand and permit high mental bandwidth.

There is a difference in how brains respond to high fascination and low fascination stimuli. Eye tracking data suggests that people fixate and explore more in low fascination images. In high fascination images, however, eye movements suggested scanning over the image without fixating on specific details (Bertoa et al., 2008). This would suggest that high fascination stimuli demand effort, which might be another difference between natural and urban environments.

To better understand Attention Restoration due to experiencing nature under this framework, it feels useful to isolate parts of the experience of nature, and thus look at abstractions of the experience. The differences in restorative abilities of urban and natural scenes can be looked at through other mediums, as we will in the following section.

2.2 Abstractions

Most of the experiments around ART focus on visual stimuli. One of the most cited abstractions of the nature/urban distinction compares the effects of 50 minute walks with 10 minutes of viewing photographs, both across nature and urban conditions (Berman et al., 2008). The study found that the photographic exposure to nature had similar restorative effects as the walk. This is even applicable to the view outside a window (Kaplan, 2001, Tennessen and Cimprich, 1995). The presence of natural elements and environments outside residential windows was linked to better well-being, satisfaction and better responses on attention measures as compared to views of built objects. Similar attention restorative effects were also found on 40-second views of green roofs in cities, as compared to regular concrete roofs (Lee et al., 2015) Another study, looking at the perceived restorative effect of

nature murals, as compared to looking out of a window, found that nature murals were reported by participants to be more restorative than nature outside a window, when the view from the window had any presence of built objects (Felsten, 2009). Even in a confined environment like a prison, the presence of nature, in both real and photographed forms, had perceived restorative effects, which would most likely aid in prisoner rehabilitation (Moran, 2019).

Similarly to visuals, people also tend to rate natural sounds and soundscapes as more relaxing than urban sounds, even when only positively rated urban sounds are considered (Krzywicka and Byrka, 2017). Zhang et al. looked at soundscapes within real environments, comparing traffic noise, machine noise and natural noise as experienced in a park within a city (2017). The natural sounds were more restorative as compared to the control, and other two urban sound conditions. Similar effects were found in a laboratory experiment with recorded sounds of a natural park presented with a still image of the park. Participants listening to the natural audio with bird and wind sounds outperformed participants in a control condition, while participants listening to the anthropogenic audio- with propeller plane and motorcycle noises alongside the natural sound, did no better than the control (Abbott et al., 2016).

Attention Restoration Theory is less rigorously studied with stimuli that engages other senses, but a few interesting results can be found nonetheless. Research on urban smellscapes suggests a positive affect of nature smells as compared to urban ones (Quercia, 2016), and a recent push to better understand the link between smell, nature and restoration has also been made (Truong et al., 2020), though there is currently still a knowledge gap. Joyce, et al., conducted research on gait changes in response to urban and natural imagery. In a laboratory setting, with an image of a natural or urban scene projected on one wall, participants walked faster when shown urban scenes than they did with natural scenes, and their step length was also significantly shorter in the urban condition (2017). Differences in restorative effects have also been recorded on the haptic sensation of laying on a platform floating on water as compared to on solid ground. Participants performed better on cognitive tasks when lying on the floating platform (Lopez-Cotarelo Flemons, 2019).

Virtual Reality natural environments are also restorative in ways similar to natural environments, participants showed reduced electrodermal activity in nature scenes, significantly more than in the control, and showed a significant decrease in negative affect, where there was no significant change in the control condition (Anderson et al., 2017, Valtchanov, 2010). This leads us to poetry and fiction as potential restorative mediums.

2.3 Poetry & Fiction as Restorative Mediums

Similar to VR, fiction, literature and poetry have the ability to be immersive and transport people into narratives and settings (Green et al., 2000, Green, 2004, Busselle and Bilandzic, 2009, Gerrig, 1993). A lot of research around the cognitive benefits of reading goes into how it improves people's performances on Theory of Mind tasks (Kidd and Castano, 2013). Fiction allows people to change their personality in small and self-directed ways (Oatley, 2012). Given these factors, there is the potential that reading about nature scenes is also restorative, though there is limited literature on this phenomena. Poetry, given its presence in people's lives from a young age (through lullabies and music), its often

emotionally evocative nature and relatively compact form, may be a good form in which to construct such immersive experiences.

2.4 Measurements of Restorativeness

There are several ways in which the restorativeness of environments are measured in prior work. One of the most popular experimental designs involves exhausting the participant with a cognitively straining task, exposing them to the stimulus and then measuring performance on a cognitively demanding task. The most commonly used task for measuring performance is the backwards digit span (Ohly et al., 2016) in which a string of numbers is presented and taken away and the participant is asked to recite them backwards. The number strings increase in length for subsequent trials. The task measures directed attention and memory. Another reliable task for attentional resources is the Trail Making Test B (TMTB) in which the participant connects numbers and letters on the page in a sequence that alternates them in order (1-A-2-B-3-C-4...). It involves directed attention and memory as well.

The Attention Network Task (ANT) is able to isolate and measure directed attention. It uses arrows pointing left or right presented above or below a fixation point. A cue is displayed above or below the fixation point and the arrows may appear at the same position or at the opposite position. The arrow is presented either on its own or between other arrows pointing in the same (congruent) or the opposite (incongruent) direction. The participant is asked to press a button indicating the direction of the arrow, and response time is measured (Fan et al., 2002).

Of the physiological measures, studies have used electrodermal activity, heart rate, and EEG data. These are generally used when restorativeness is measured alongside stress response.

The Positive and Negative Affect Schedule (PANAS) is used to understand the emotional affect of the stimuli. It consists of twenty words, ten for positive affect and ten for negative affect, that are rated on a five item Likert scale based on how strongly they apply to the participant when exposed to a stimulus (Watson et al., 1988). Several studies have also used a perceived restorativeness scale (PRS) (Hartig et al., 1997) as a proxy for attention restoration. This task asks a series of questions about the environment or abstraction, divided across the four requisites of attention restoration- being away, fascination, extent and compatibility. The responses are collected on a seven item Likert scale, and combined within category before being combined together.

2.5 Key Findings

Attention Restoration Theory presents a reason for the restorative effect of time spent in nature, as compared to urban environments. This difference in attention restoration in nature and urban settings can even be seen with exposure to photographs, murals, outdoor views, soundscapes and VR. Reading immersive texts, like poetry, have the potential to be restorative, though prior research on the topic is currently limited. There are several reliable measures of attention restoration, including a proxy for perceived restoration.

3. Research Questions

The research question that this study aims to answer is - Is reading poetry about nature more restorative than reading poetry about/set in urban environments?

Our hypothesis is that nature poetry will be more restorative than urban poetry. Since there is a difference in restorativeness recorded between nature and urban environments and this difference applies to both real and abstracted situations, the difference should also hold in poetry since it is an immersive medium, and it conveys the setting by engaging the senses.

4. Pilot Study

This experiment is designed to select appropriate poetry for the main experiment. In this setup we aim to understand the emotional affect of poetry set in urban environments and poetry in nature. This will allow for a more balanced comparison of urban and natural environments and allow us to control for positive affect playing a role in the restorative abilities of the poem. This also gives us the chance to check that the experimenter's perceived division of poems in urban and natural categories matches with that of population. The experiment is a between subjects design and conducted online via a short survey. The selected longlist of poems were chosen based on their contents, the overall message of the poem and the time required to read each poem out loud.

4.1 Subjects

Participants were adults recruited online. All participants gave informed consent.

4.2 Measures

The Positive and Negative Affect Schedule (PANAS) was used to assess the participants' mood as relating to the poems. Participants respond to twenty mood related adjectives on a scale of one to five, where one is very slightly or not at all and five is extremely. Both positive and negative affects are considered.

To check how the participants rank the poem, they will also answer an additional question- 'What is the poem more associated with?', where the options will be nature, built environment or neither. The time taken to read each poem was also measured.

4.3 Procedure

Participants read a poem presented on their screen out loud and fill out the associated PANAS and additional question. This will be repeated such that each participant reads and evaluates 4 poems. The poems will be randomly chosen from a list of 20 non-famous poems of roughly similar lengths (readable in roughly a minute). Two poems will be from the ten nature associated poems, while the other two from the ten urban associated

poems. The poems from both categories will be alternated in their presentation. The experiment takes each participant less than 15 minutes in total.
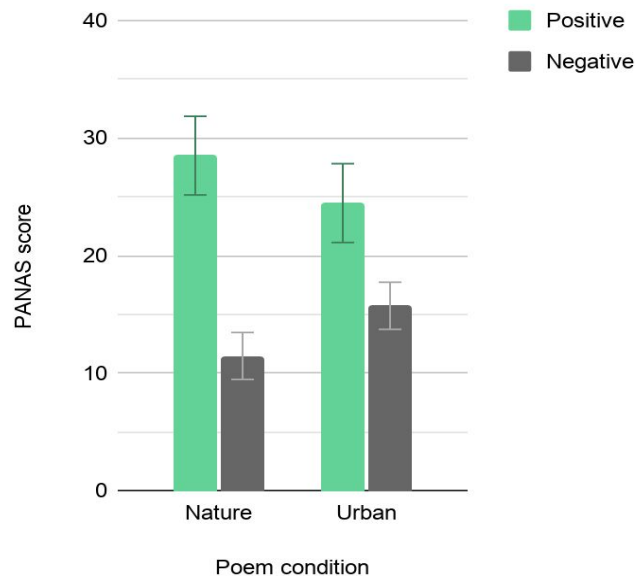
4.4 Results

Fig 1 Positive and Negative Affect Schedule results for the poems selected to be presented in the final experiment for both the Nature (n = 5) and the Urban condition (n = 5)

10 participants completed the experiment. All of them were within the 18-24 age range, and were involved in, or had completed higher education. Based on the responses, of the full list of twenty poems, five poems did not match the nature/urban category they had been assigned and were immediately disqualified from being used further. Two of these were from the nature category and three from the urban category. One more urban poem was disqualified since the associated PANAS had a higher negative than positive component. This leaves 8 nature poems and 6 urban poems.

Of the remaining poems, the ones with the highest positive affect were selected. In the case of equal positive affect between two poems, the one with least negative affect was picked first. Five poems were selected from each category, for ten poems in total. The positive affect was reasonably similar between categories- the nature poems had a mean positive affect of 28.5 (n = 5, sd = 7.5, range = 20-40) and a mean negative affect of 11.5 (n = 5, sd = 2.2, range = 10-15), while the urban poems had a mean positive affect of 24.5 (n = 5, sd = 7.8, range = 15-34) and a mean negative affect of 15.7 (n = 5, sd = 7.0, range = 10-27). The final poems are presented in Appendix B.

5. Experimental Method

This experiment looks at the restorative effect of reading poetry about nature. The experiment is a between subjects design and conducted online.

5.1 Subjects

Participants were invited to participate online from July - September 2020 from the experimenter's networks. All participants had to be above 18, understand english and have access to a device on which to complete the survey. All participants gave informed consent.

5.2 Measures and Tasks

The Perceived Restorativeness Scale (PRS) is used to measure the perceived restorativeness of the reading experience. It involves questions across the four measures of restoration- being away, fascination, extent and compatibility. The responses are averaged within each category before being combined together for a single measure of perceived restorativeness. The higher the value, the more perceived restoration, where the values could range from 0 to 6. This measure was adapted for poetry. The original and adapted questionnaires are presented in Appendix A.

The Backwards Digit Span (BDS) task involves a list of numbers that are displayed one at a time, for a second each. The participant is asked to type them back in reverse order, going from the back of the list to the front. The length of the list increases as the experiment goes on, starting from 3 digits and continuing till 9, with two sequences of each length. A total of 14 sequences is displayed per trial. Each correct response is counted for a total score of 0 to 14 per trial. Two trials are completed, and the difference is used as the measure for attention restoration. Since we are anticipating a higher score in the second trial if the experience is restorative, the results of the first trial are subtracted from the second. This will leave us with a BDSΔ with a positive polarity, and a possible range of values between -14 and 14.

The Keep Track task is used only for the purposes of fatigue induction. The task involves the displaying of a sequence of fifteen words across six categories, with between two and five categories assigned to which to pay attention. Participants must keep track of the last word displayed that was part of each of the assigned categories. The results on this task are not measured or taken into account for evaluation purposes.

5.3 Procedure

Fig. 2 Procedure sequence presented as a diagram

Participants fill out the demographic information. They then complete the first round of the BDS task (resulting in a score we refer to as BDS1), followed by the fatigue inducing Keep Track task. They are then randomly assigned to either the nature or the urban condition. Participants read the five assigned poems for their condition out loud (presented

in a random order). Each poem is followed by a single confirmatory question to check that the poem was read. They are asked 'Did you enjoy this poem?', and respond with a yes, no or maybe. The poem portion of the experiment lasts for ten minutes. They then complete the PRS, and end with the second round of the BDS task (resulting in a score referred to as BDS2). The total experiment takes about 30 minutes to complete per participant.

5.4 Analysis

Since the data involves one categorical independent variable (the assigned condition) and two continuous dependent variables (PRS and BDSΔ), a MANOVA (Multivariate Analysis of Variance) will be performed on the data to see the interaction between these variables.

6. Results

	BDS Delta		PRS Score	
	Nature	Urban	Nature	Urban
Valid	18	12	19	13
Missing	1	1	0	0
Mean	0.278	1.083	3.548	2.875
Std. Deviation	2.445	1.165	1.126	1.030
Minimum	−4.000	−1.000	1.950	1.706
Maximum	7.000	3.000	5.506	4.781

Table 1. Descriptive statistics for both measures (BDSΔ and PRS) for each condition.

	t	df	p
BDS Delta	−1.060	28	0.298
PRS Score	1.718	30	0.096

Table 2. Results on an Independent Samples T-test (student t-test) for the BDSΔ and PRS Score

6.1 Participant Data

Of the 93 respondents, 30 participants completed the entire experiment, and two additional participants completed the experiment until the PRS, for a total of 32 included participants (ages 18-54, 23 women and 9 men). For the analysis, data from the 30 is used for the BDS and PRS, while the additional 2 are only included in the PRS results (See Table 1). Of the 32, 19 were part of the nature condition, and 13 were part of the urban condition. Participants were from India, USA, UK, Switzerland, France and the Netherlands.
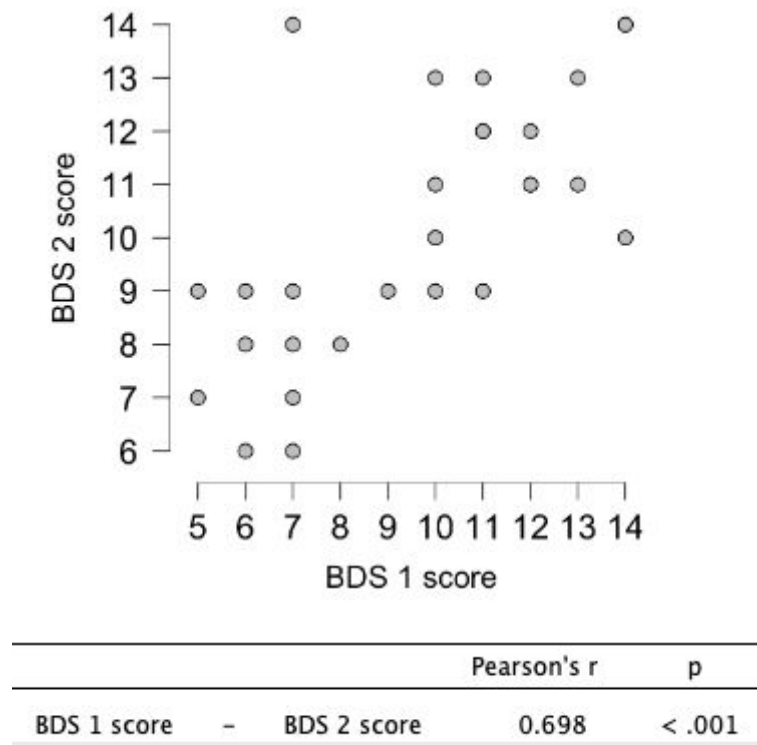
6.2 Backwards Digit Span

			Pearson's r	p
BDS 1 score	–	BDS 2 score	0.698	< .001

Fig 3. The correlation between BDS 1 and BDS 2.

There is a significant positive correlation (Fig 3. n = 30, r = 0.698, p < 0.001) between participants' scores on the first and the second Backwards Digit Span task, as would be expected, given that the tasks are identical, and participants are likely to respond to both tasks with similar strategies.
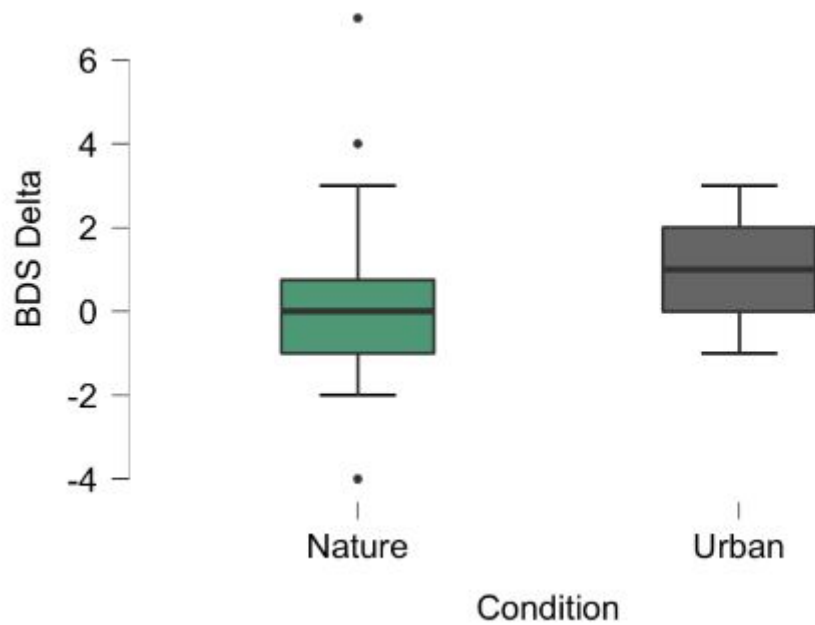
Fig 4. Distribution of improvement on Backwards Digit Span task based on condition for n= 30. (BDS Delta (Δ) = BDS 2- BDS 1)

While participants improved on the BDS task on average, their improvement is lower in the nature condition (Table 1, n = 18, mean = 0.278, sd = 2.445) than the urban condition (Table 1, n = 12, mean = 1.083, sd = 1.165), as can be seen in the boxplots presented in Fig 4. The nature condition also has a larger range of values.

In T-tests (Table 2) the BDSΔ p-score is 0.298, indicating a weak significance to these results that present a reversal from our hypothesis.
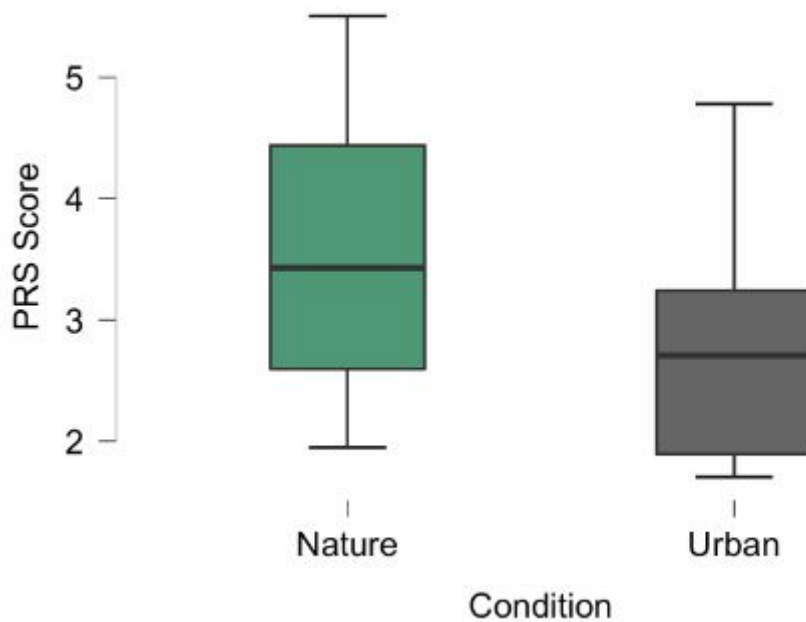
6.3 Perceived Restoration

Fig 5. Perceived Restoration Score distribution based on condition. (n = 32)

The perceived restoration is averaged across four categories (being away, fascination, coherence and compatibility) for a value between zero and six. A high PRS score indicates more restoration.

As can be seen in Fig. 5, participants rated the nature condition as more restorative (n = 19, mean = 3.548, sd = 1.126) than the urban condition (n = 13, mean: 2.875, sd: 1.030). As can be seen in Table 2, the p value in T-test for perceived restorativeness is 0.096, which indicates low support for the hypothesis.
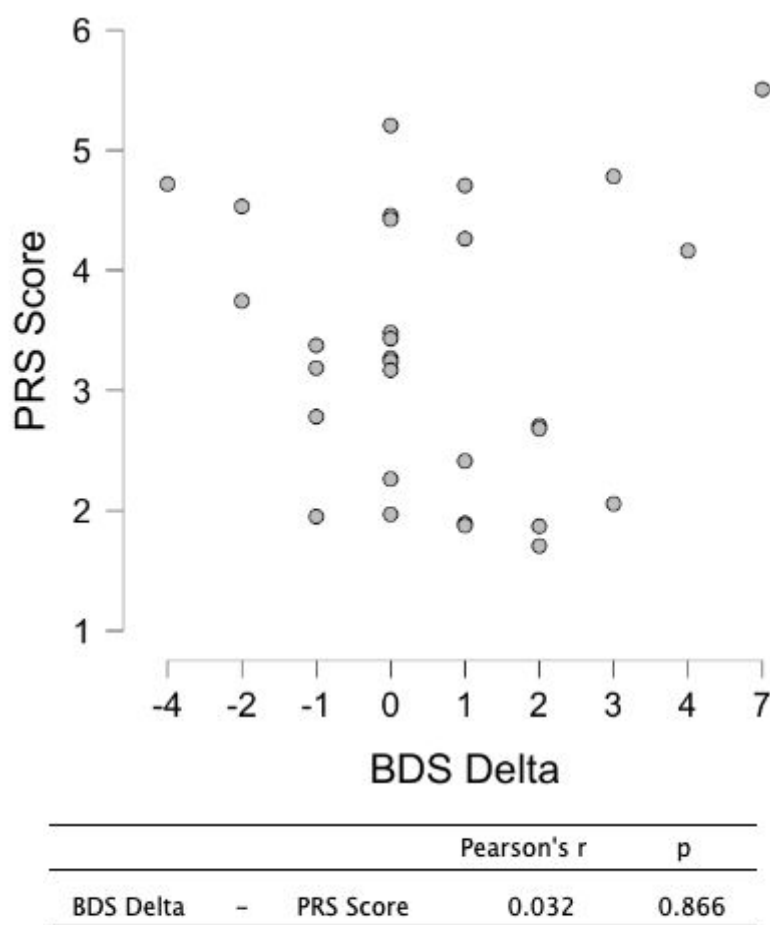
6.4 Additional Findings

		Pearson's r	p
BDS Delta – PRS Score		0.032	0.866

Fig 6. Correlation between BDS and PRS Scores.

Cases	df	Approx. F	$Trace_{Pillai}$	Num df	Den df	p
Condition	1	1.874	0.122	2	27.000	0.173
Residuals	28					

Table 3. The MANOVA for BDSΔ and PRS based on the nature/urban poetry conditions. There is no significant support for the hypothesis (p > 0.05).

As can be seen in Fig. 6, there is no significant correlation between the PRS and BDS scores. The r value is slightly positive (0.032) , and the p value is 0.866, indicating an absence of a correlation. Additionally, according to the results of the MANOVA (Table 3), there is no significant correlation between the condition and attention restoration based on the two measures of restoration.

6.5 Key Findings

Participants' measured restorativeness was higher in the urban condition than the nature condition, while the perceived restorativeness was higher in the nature condition. There is no correlation between measured and perceived restorativeness. Moreover, the

measured restorativeness results go counter to the hypothesis. From these results, we cannot say that there is any clear difference in restorative properties between reading nature based and non-nature based poetry.

7. Discussion

The data suggests that there is no significant restorative effect of reading nature based descriptive poetry as compared to its urban counterpart. There may be a variety of reasons for this result. It may be that nature poetry and urban poetry are not meaningfully different in how people respond to them. While the musicality and compactness of poetry make for a culturally important and accessible medium, the way most people first formally experience poetry is in classroom contexts where it is meant to be analysed. In follow-up conversations with some respondents, people mentioned that they were memorising the poems, or performing close readings, expecting to answer questions about the content within the poems. Even when given explicit instructions to engage with the poems in a specific way, cultural and educational training come in the way of a potentially relaxing experience.

Moreover, immersion might not be an essential component of fascination, and thus restoration. One of the assumptions made to support using poetry as a medium is that spending time in nature is an immersive experience, as is nature based VR, both of which are also restorative . Although poetry is also immersive, this might not be enough in itself to create a restorative experience. The attention systems utilised while experiencing poetry, irrespective of whether it is read or heard, are required to be more engaged to process words and ideas to create the experience of immersion. For soft fascination, it seems important to have mental bandwidth outside of the current task to allow us to think, reflect and let our minds wander. Poetry does not seem to allow for that mental bandwidth, at least not in the same way as spending time in nature. Photographs and soundscapes, in contrast, allow for the mental bandwidth for unstructured thought. There is less cognitive load since both can be experienced passively. That said, there is no clear reason for the urban poems to be more restorative, as is indicated by Fig 4.

It is interesting that the measured and perceived restoration were not correlated. While there may be issues in the adaptation of the PRS for poetry, it is more likely that the PRS is just an incomplete measure for restoration. The components of restoration that it measures do not take into account mental bandwidth, thus presenting results closer to people's expectation of attention restoration rather than actual restoration. And, this expectation of attention restoration may be explained by the difference in emotional affect as seen in the pilot study, or by people's socio-cultural associations of nature with relaxation and escape.

The data, however, had some limitations. This experiment had a small sample size, and an uneven distribution between conditions. This makes it difficult to speak to the reliability of the data. Additionally, since it was conducted online during the covid-19 pandemic, it is difficult to judge if the conditions that each participant completed the experiment in did in fact meet the requirements under which the experiment should be

optimally performed. There was an incredibly high drop off rate, and while the included participants completed the entire experiment, the length and difficulty of the tasks in such a context may have an impact on the respondent demographic.

While this study looks at nature based poetry in specific, it leads to the question of whether poetry is a restorative medium at all. Further research on this topic could look into different methods of presentation of the poetry, or different exposure times with longer or more poems. The placement of the Backwards Digit Span task could also be altered. It could be placed after the fatigue task, so as to get a larger difference in a pre- and post-exposure measure. Furthermore, given that the country of residence of most respondents suggests that English might not be their first language, it would also be interesting to look at poetry in different languages. Sanskrit poetry, for example, is known for being descriptive in ways that would be interesting to look at in this context. One more thing to take into account would be how and why people engage poetry in contexts outside the experiment. It may be that the results would be different in a sample that more casually engages in it.

Conclusion

In looking at attention restoration based on exposure to nature, this study chose poetry as a medium for presenting a nature experience. In a selected sample of poetry, controlled for positive and negative affect, it found no significant attention restorative effect of reading nature based poetry as compared to urban poetry. What is important to remember, especially during this pandemic where "zoom fatigue" as a form of attention fatigue is part of the popular lexicon, is that spending time in nature is still restorative, even if nature based poetry may not be. The break that time in nature provides both makes you feel more relaxed and boosts your productivity. Additionally, nature based poetry allows people to better understand and appreciate their ever-fascinating environment. As Tennyson's personified titular narrator , The Brook, puts it "for men may come and men may go, but I go on forever."

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Appendix A- Adapted PRS

Adapted Perceived Restorativeness Scale for Poetry

Original Prompt	New Version for Poetry	Coding
Being Away		
Being here is an escape experience.	Reading these is an escape experience	
Spending time here gives me a break from my day-to-day routine.	Spending time with the poems gives me a break from my day-to-day routine	
It is a place to get away from it all.	Reading these lets me get away from it all	
Being here helps me to relax my focus on getting things done.	Reading these helps me to relax my focus on getting things done	
Coming here helps me to get relief from unwanted demands on my attention.	Reading these helps me get relief from unwanted demands on my attention	
Fascination		
This place has fascinating qualities.	These poems have fascinating qualities	
My attention is drawn to many interesting things.	My attention is drawn to many interesting things.	
I want to get to know this place better.	I want to get to know the settings from the poems better.	
There is much to explore and discover here.	There is so much to explore and discover in these settings.	
I want to spend more time looking at the surroundings.	I want to spend more time in the places depicted in the poem.	
This place is boring	The places depicted are boring	-
The setting is fascinating	The settings are fascinating	
There is nothing worth looking at here.	There is nothing worth looking at here.	-
Coherence		
There is too much going on	There is too much going on	-

It is a confusing place	It was a confusing experience	-
There is a great deal of distraction	There is a great deal of distraction	-
It is chaotic here	The experience was chaotic	-
Compatibility		
Being here suits my personality	These poems suit my personality	
I can do things I like here.	N/A	
I have a sense that I belong here	The poems provide me with a sense of belonging	
I can find ways to enjoy myself here	I can find ways to enjoy this experience	
I have a sense of oneness with this setting	I have a sense of oneness with these settings	
There are landmarks to help me get around	N/A	
I could easily form a mental map of this place	N/A	
It is easy to find my way around here	N/A	
It is easy to see how things are organized.	N/A	

(-) indicates that the scores must be inverted for the question

Appendix B - Poetry

Nature Poems

1. *On a Lane in Spring*
   By John Clare

A Little Lane, the brook runs close beside
And spangles in the sunshine while the fish glide swiftly by
And hedges leafing with the green spring tide
From out their greenery the old birds fly
And chirp and whistle in the morning sun
The pilewort glitters 'neath the pale blue sky
The little robin has its nest begun
And grass green linnets round the bushes fly
How Mild the Spring Comes in; the daisy buds
Lift up their golden blossoms to the sky
How lovely are the pingles and the woods
Here a beetle runs; and there a fly
Rests on the Arum leaf in bottle green
And all the Spring in this Sweet lane is seen

2. *I Wandered Lonely as a Cloud*
   By William Wordsworth

I wandered lonely as a cloud
That floats on high o'er vales and hills,
When all at once I saw a crowd,
A host, of golden daffodils;
Beside the lake, beneath the trees,
Fluttering and dancing in the breeze.

Continuous as the stars that shine
And twinkle on the milky way,
They stretched in never-ending line
Along the margin of a bay:
Ten thousand saw I at a glance,
Tossing their heads in sprightly dance.

The waves beside them danced; but they
Out-did the sparkling waves in glee:
A poet could not but be gay,
In such a jocund company:
I gazed—and gazed—but little thought
What wealth the show to me had brought:

For oft, when on my couch I lie
In vacant or in pensive mood,
They flash upon that inward eye

Which is the bliss of solitude;
And then my heart with pleasure fills,
And dances with the daffodils.

3. *Nature Aria*
    By Yi Lei (translated by Tracy K. Smith and Changtai Bi)

Autumn wind chases in
From all directions
And a thousand chaste leaves
Give way.

Scatter in me the seeds
Of a thousand saplings.
Let grow a grassy heaven.
On my brow: a sun.
This bliss is yours, Living
World, and alone it endures.
Music at midnight.
Young wine.
Lovers hand in hand
By daylight, moonlight.
Living World, hold me
In your mouth,

Slip on your frivolous shoes
And dance with me. My soul
Is the wild vine
Who alone has grasped it,
Who has seen through the awful plot,
Who will arrive in time to vanquish
The river already heavy with blossoms,
The moon spilling light onto packs
Of men. What is sadder than witless
Wolves, wind without borders,
Nationless birds, small gifts
Laden with love's intentions?

Fistfuls of rain fall hard, fill
My heart with mud. An old wind
May still come chasing in.
Resurrection fire. And me here
Laughing like a cloud in trousers,
Entreating the earth to bury me.

4. *Tell Me Not Here, It Needs Not Saying*
    By A. E. Housman

Tell me not here, it needs not saying,
What tune the enchantress plays
In aftermaths of soft September
Or under blanching mays,
For she and I were long acquainted
And I knew all her ways.

On russet floors, by waters idle,
The pine lets fall its cone;
The cuckoo shouts all day at nothing
In leafy dells alone;
And traveller's joy beguiles in autumn
Hearts that have lost their own.

On acres of the seeded grasses
The changing burnish heaves;
Or marshalled under moons of harvest
Stand still all night the sheaves;
Or beeches strip in storms for winter
And stain the wind with leaves.

Possess, as I possessed a season,
The countries I resign,
Where over elmy plains the highway
Would mount the hills and shine,
And full of shade the pillared forest
Would murmur and be mine.

For nature, heartless, witless nature,
Will neither care nor know
What stranger's feet may find the meadow
And trespass there and go,
Nor ask amid the dews of morning
If they are mine or no.

5. *Nature Is What You Dont See*
    By john tiong chunghoo
nature is what we dont see
for instance the essence that pushes words out
for this poem fated for posterity
the birds that without fail
chirp at first light, morn breeze
the unseen clock working at the dot
nature is what we dont see
the nocturnal bloom, that folds itself

in the day, throws its fragrance
in the dead of night as lovers
hide in each others' bossoms
below the soft glare of the moon
centimetre by centimetre
it has inched forward to exhibit its
full blown majestry to the world
Nature is what we dont see
the shadow play master tilting the earth
the petals for its bloom dance
the successive cells here there
guided towards optimal functions
and that ogiasmic tremour
that shuttles the world round and round
nature is what you should not see
the formulas, secrets kept behind everything
that could get even einstein mad
in unveiling, explaining them
nature is what we all should not see
nor equipped to see
though it rambles through our every cell
like the worst of storm

Urban poems

    6.   *Street Light*
By John Crowe Ransom

The shine of many city streets
Confuses any countryman;
It flickers here and flashes there,
It goes as soon as it began,
It beckons many ways at once
For him to follow if he can.

Under the lamp a woman stands,
The lamps are shining equal well,
But in her eyes are other lights,
And lights plus other lights will tell:
He loves the brightness of that street
Which is the shining street to hell.

There's light enough, and strong enough,
To lighten every pleasant park;
I'm sorry lights are held so cheap,
I'd rather there were not a spark
Than choose those shining ways for joy
And have them lead me into dark.

7. *A Vision*
   By Simon Armitage
The future was a beautiful place, once.
Remember the full-blown balsa-wood town
on public display in the Civic Hall.
The ring-bound sketches, artists' impressions,

blueprints of smoked glass and tubular steel,
board-game suburbs, modes of transportation
like fairground rides or executive toys.
Cities like dreams, cantilevered by light.

And people like us at the bottle-bank
next to the cycle-path, or dog-walking
over tended strips of fuzzy-felt grass,
or model drivers, motoring home in

electric cars, or after the late show -
strolling the boulevard. They were the plans,
all underwritten in the neat left-hand
of architects – a true, legible script.

I pulled that future out of the north wind
at the landfill site, stamped with today's date,
riding the air with other such futures,
all unlived in and now fully extinct.

8. *My City*
   By ross boss
You are my city
The gaudy glow of neon light
that dispels the darkness of the night

Enhaling the smell of dust makes it feel like home
The cloudy weather, the dim trees, you look like an open book.
with nature bringing a colourful beauty to ones' heart

Alone i lay on a wooden raft
My breath is void of oxygen
My heart is scrambled without rythm
to the beautiful change made by ur smiling culture

The shimmers of the moon made the rest of the city glimmer
Now its clear why ure a symbol of pride

The lullaby tunes of the mocking bird awakens moments of passion
My head speaks and so does my heart
am lost in this beautiful city and for ever i want 2 b

Here, laughter is a pleasant sound
It spreads joy all around
flushing out every despair of the heart

Just for this city
i will open my eyes and ask the creator for one more day
one more day to discover the city in you and you in the city
let this be my praise of you, my beautiful city

9. *City Gent*
    By Craig Raine

On my desk, a set of labels
or a synopsis of leeks,
blanched by the sun
and trailing their roots

like a watering can.
Beyond and below,
diminished by distance,
a taxi shivers at the lights:

a shining moorhen
with an orange nodule
set over the beak,
taking a passenger

under its wing.
I turn away, confront
the cuckold hatstand
at bay in the corner,

and eavesdrop (bless you!)
on a hay-fever of brakes.
My Caran d'Ache are sharp

as the tips of an iris

and the four-tier file
is spotted with rust:
a study of plaice
by a Japanese master,

ochres exquisitely bled.
Instead of office work,
I fish for complements
and sport a pencil

behind each ear,
a bit of a devil,
or trap the telephone
awkwardly under my chin

like Richard Crookback,
crying, A horse! A horse!
My kingdom for a horse!
but only to myself,

ironically: the tube
is semi-stiff with stallion whangs,
the chairman's Mercedes
has windscreen wipers

like a bird's broken tongue,
and I am perfectly happy
to see your head, quick
round the door like a dryad,

as I pretend to be Ovid
in exile, composing Tristia
and sad for the shining,
the missed, the muscular beach.

    10. *City of Ships*
       By Walt Whitman
City of ships!
(O the black ships! O the fierce ships!
O the beautiful sharp-bow'd steam-ships and sail-ships!)
City of the world! (for all races are here,
All the lands of the earth make contributions here;)
City of the sea! city of hurried and glittering tides!

City whose gleeful tides continually rush or recede, whirling in and out with eddies and foam!

City of wharves and stores—city of tall facades of marble and iron!

Proud and passionate city—mettlesome, mad, extravagant city!

Spring up O city—not for peace alone, but be indeed yourself, warlike!

Fear not—submit to no models but your own O city!

Behold me—incarnate me as I have incarnated you!

I have rejected nothing you offer'd me—whom you adopted I have adopted,

Good or bad I never question you—I love all—I do not condemn any thing,

I chant and celebrate all that is yours—yet peace no more,

In peace I chanted peace, but now the drum of war is mine,

War, red war is my song through your streets, O city!