

TARRAGON

INFINITY

By: **Hannah Moscovitch**
Directed by: **Ross Manson**

January 4th – January 29th 2017 in the Extraspace



RESOURCE GUIDE

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Infinity Resource Guide

About the Play

How does a new Theory of Time change everything we know about ourselves? Three brilliant minds – a musician, a mathematician, and a theoretical physicist – smash together like colliding particles in an accelerator. Together they learn that love and time are connected in ways they couldn't have imagined. *Infinity* is a shocking, funny and revelatory play about love, sex, & math by Tarragon Playwright-in-Residence Hannah Moscovitch developed with Volcano Theatre. Back by popular demand from Tarragon's 2014/15 season.

About The Playwright

Hannah Moscovitch is considered one of the strongest playwriting voices in Canada. Her work has won multiple awards, most recently the prestigious Windham-Campbell Prize for Literature. She is the first playwright to win the Trillium Book Award in the prize's twenty-seven year history for *This is War*, a play premiered by Tarragon in 2013 which also won the Toronto Critic's Award for Best New Canadian Play and toured to Winnipeg's Prairie Theatre Exchange. Her first full-length play, *East of Berlin*, premiered at Tarragon in 2007. Tarragon also produced a mini-festival of her work in 2013 that included the premieres of *Little One* and *Other People's Children* as well as a remount of Roseneath Theatre's *In This World*. Moscovitch's other writing for the stage includes *Bunny* (premiered at Stratford Festival last season), *What a Young Wife Ought to Know* (premiered by Halifax's Neptune and 2b theatre company), *The Children's Republic* (Great Canadian Theatre Company premiere) and *The Huron Bride* (premiered as part of Theatrefront's The Mill play cycle) as well as *The Russian Play* and *Essay*, both of which won awards at SummerWorks Performance Festival. She's been nominated for the Governor General's Award, the Siminovitch Prize and the international Susan Smith Blackburn Prize. Upcoming, she is writing a combination of TV, opera, theatre, and film projects, including commissions with the Stratford and Shaw Festivals. She is a Playwright-in-Residence at Tarragon Theatre in Toronto.

Definitions

Infinity

The word Infinity is a Latin word that literally means 'without end', and refers to something that goes on forever. It is often used in mathematics and physics to explain the largest number possible, or the constantly expanding universe. Things that are said to be infinite never come to a stop.

String Theory

String Theory refers to the mathematical models that seek to find a common explanation for the four main forces seen in nature: electromagnetic force, strong and weak nuclear force, and gravity. The 'string' is an analogy that explains string-like vibrations of energy in the universe, almost like a guitar string at different frequencies. This gives rise to different types of particles. In physics, theories of general relativity and quantum mechanics have already been proposed, but string theory attempts to combine the two, which is difficult since they often contradict each other. String theory, simply put, is a theory of everything, since it deals with forces as big as black holes, elements as tiny as atoms, and everything in between.

Isaac Newton's Absolute Time Theory

Isaac Newton (1643-1727) believed in something called absolute time, which is sometimes referred to as Newtonian Time. He believed that time acted independently from space, and progressed at a constant pace no matter what the outside forces are. In other words, time would still progress at the same pace even if the universe were empty of all matter and objects. He believed that time is the same for every observer no matter where they are in the universe.

Einstein's Theory of Relativity

Albert Einstein's (1875-1955) theory of relativity states that time is not constant for everyone; it depends on the observer. Time is relative to the observer and their movement. For example two cars moving at the exact same speed would be perceived as moving fast by a person on the sidewalk, whereas a passenger would look to the other car and would not see it moving. Therefore the perceived speed is zero.

Resources

Newsflash: Time May Not Exist

[http://discovermagazine.com/2007/jun/in-no-time.](http://discovermagazine.com/2007/jun/in-no-time)

Tim Folger explored various theories of time, and the possibly problematic elements of it, including that fact that we do not see time, we only see clocks which are measuring what we perceive to be time. What if we're wrong about time and its relationship to the universe?

Does Time Really Exist?

[https://www.psychologytoday.com/blog/biocentrism/201202/does-time-really-exist.](https://www.psychologytoday.com/blog/biocentrism/201202/does-time-really-exist)

We have grown so accustomed to measuring time in specific ways. What happens when we take these away, and what is possible when we no longer use traditional time measurements or adhere to what we think are the rules of time?

Exactly What is Time?

<http://www.exactlywhatistime.com>

This website is devoted to all things time, explaining philosophy, physics, and psychology of time. It includes time measurements, time in different cultures, and literature, and many more definitions. It also includes a fantastic list of more references including books, videos, and websites not included on this list.

What is Time?

http://www.forbes.com/forbes/welcome/?toURL=http://www.forbes.com/2008/02/28/what-is-time-oped-time08-%09cx_ee_0229thought.html&refURL=&referrer=

Perhaps we rely too much on time, and need a reminder that the idea of “running out of time” is something we should do away with. What if time and our biology and every day actions aren’t as related as we thought?

Give Us Our Eleven Days

<http://www.historic-uk.com/HistoryUK/HistoryofBritain/Give-us-our-eleven-days/>

Further reading on the history behind Britain’s late adoption of the Gregorian calendar, why the calendar was switched in the first place, and what happened when Britain finally decided to end being behind by 11 days.

Time Reborn: From the Crisis in Physics to the Future of the Universe

Smolin, Lee. *Time Reborn*. 1st ed., New York, Houghton Mifflin Harcourt, 2013. Print.

“What is time? It’s the sort of question we rarely ask because it seems so obvious. And yet, to a physicist, time is simply a human construct and an illusion. If you could somehow get outside the universe and observe it from there, you would see that every moment has always existed and always will. Lee Smolin disagrees, and in *Time Reborn* he lays out the case why.” (Smolin)

Review:

Lightman, Alan. “Resetting the Clocks.” *The New York Times*, 3 May 2013. Web.
<http://www.nytimes.com/2013/05/05/books/review/time-reborn-by-lee-smolin.html>. Accessed 3 January 2017.

Lee Smolin Public Lecture: Time Reborn

“Lee Smolin Public Lecture: Time Reborn.” *YouTube*, uploaded by Perimeter Institute for Theoretical Physics, 12 December 2014,
https://www.youtube.com/watch?v=ATxi0_-7HqQ

“What is time? Is our perception of time passing an illusion which hides a deeper, timeless reality? Or is it real, indeed, the most real aspect of our experience of the world? Perimeter Institute Faculty member Lee Smolin examines these and other timely questions from his book *Time Reborn* during his April, 2013 Perimeter Institute Public Lecture.” (*YouTube*. Accessed 3 January 2017)

What is Time? – Neil deGrasse Tyson

“What is Time? – Neil deGrasse Tyson.” *YouTube*, uploaded by UNSW Science, 25 August 2015, https://www.youtube.com/watch?v=LIPOR55M_P0

“Neil deGrasse Tyson explains what he believes time to be, and how astronomers 400 years ago determined the way we now measure time.” (*YouTube*. Accessed 3 January 2017)

Is the Passage of Time Just an Illusion?

“Is the Passage of Time Just an Illusion?” *YouTube*, uploaded by World Science Festival, 2 November 2013, <https://www.youtube.com/watch?v=bYFLFemN4JU>

“The flow of time is central to human experience. The past drifts away and the future relentlessly approaches. But does time really flow? Or, as Einstein suggested, might the distinction between past, present and future be an illusion? Paul Davies explains why the passage of time is an “illusion” with a metaphor.” (*YouTube*. Accessed 3 January 2017)

The Music Instinct: Science and Song

The Music Instinct – Science: Song.” *YouTube*, uploaded by Coffee Science & Discoveries, 18 October 2014,
<https://www.youtube.com/watch?v=m5pwSMDTD4M>

“The Music Instinct: Science and Song provides a ground-breaking exploration into how and why the human organism—and the whole ebb and flow of the cosmos—is moved by the undeniable effect of music. This follows visionary researchers and accomplished musicians to the crossroads of science and culture in search of answers to music’s deep mysteries.” (*YouTube*. Accessed 3 January 2017)

Activities

Activity 1

Instructions

This activity is designed to build relationships and to give students a different perspective on the feeling of time passing.

Ask each student to pick a partner and direct them to sit cross-legged across from each other. For the first round, each partner talks for one minute about a topic given to them. Some examples of topics are: your favourite vacation, how your day has been so far, or they could tell a joke. Once the time is up, the other partner gets to talk for one minute about the same topic. Finally, the partners are to sit and simply look into each other's eyes for the same amount of time – one minute.

Discussion

1. In which scenario did you feel like time passed by faster? When you were telling stories, or when you were looking into each other's eyes?
2. If you felt one was different than the other, why do you think that was? Were there any factors that made it feel like time was moving faster or slower?
3. Do you feel like you learned anything new about the other person? Did you feel like you were communicating more when you were talking, or silent?
4. Do you think it's possible for two people to communicate, or create a friendship without talking?

Activity 2

Instructions

Write a letter in-role as Sarah Jean to either her mom or her dad expressing the feelings she may not have been able to express in the play. Since we see her both as a child and as a grown up, you may write as her at either stage in life. Ask a question that you feel was unanswered, or, that might have a different answer knowing what you know now.

Discussion Questions

Pre-show

1. What is time? How do you know that time is passing?
2. Discuss a moment in your life that made you feel like time was moving very slowly. Discuss a time in your life that made you feel like time was moving very fast. Did others around you feel the same as you did?
3. If you can't physically see something, do you still believe that it can exist?

Post-show

1. What is significant about Sarah Jean beginning the play as a grown woman, and then going back to her parents' meeting?
2. Discuss how the music supported or contrasted each scene. How did the presence of the violin relate to the play's theme?
3. How are Elliot and Carmen's careers reflected in the way that they perceive time?
4. Discuss the use of time in relation to the order in which the scenes in *Infinity* occur.
5. What do you think makes Carmen twitch her fingers even when she's not playing the violin?
6. If time did not exist, what is the first thing you would do?
7. Discuss the meaning behind Sarah Jean's line at the end of the play:

Yeah: Dad went... through his whole life...thinking...time was just a persistent illusion, and then he was jarred by...death, in his case it was the approach of death, and yeah, yeah: you can suddenly know that the way in which you see...some...thing... You can know that something you're fucked up about some thing you thought was...fake, some thing you didn't listen to, that you thought had no meaning is...

Beat.

Is real.

8. What do you think is the significance of the title, *Infinity*?