

ANNIE DORSEN

A PIECE OF WORK

(formerly False Peach)

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ON THE BOARDS

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**ON THE
BOARDS**

photos by Annie Dorsen



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CURATOR'S NOTE

A year ago, I was two drinks into happy hour with Herbert Blau, one of the world's preeminent scholars of live performance, when he began describing a version of *Hamlet* created by his experimental performance ensemble Kraken in 1975. He read from a copy of his book *Dubious Spectacle: Extremities of Theater*:

“We were really looking for a subject, and months of rehearsal seemed to collect in a state of mind that caused us to turn to *Hamlet*, not because we wanted to do that play in any conventional sense, but because the play, we thought, was somehow rehearsing us. When we defined the state of mind, asking ourselves where we were, we said we were in Elsinore. When we described the way we worked, we called it ghosting. We found ourselves thinking through *Hamlet* as if *Hamlet* were thinking through us, and as if without the play we could not think at all. The play had become a language preempting what we thought.”

Hearing Professor Blau – aka Herb – describe the production was eerie because we were in the final stages of finalizing the premiere of Annie Dorsen's *A Piece of Work* (formerly *False Peach*), which would feature a literal “hamletmachine” capable of channeling the play in a new and profound manner. It makes sense that people with the intelligence of Annie and Herb are drawn to this play. Its story and rich language is deeply layered and yet familiar to most of us, providing innovative thinkers with a resource for experimentation that still provides the audience with a means for following along.

Watching Annie negotiate this highly complex production has been truly inspiring. Her big brain has the rare ability to strike a balance between conceptualism and the actual theater experience without pulling any punches. Scott Shepherd's (an OtB alum in *To You, The Birdie!* by The Wooster Group and *Gatz* by Elevator Repair Service) ability to parse and perform text has few equals and he is the perfect front to the all-star team of designers and computer programmers sitting in the back row of the theater. This entire group has been in residence for the past

three weeks in our theater working long days to design a tool and an approach that offers a provocative example of how our lives are being scrambled and reordered, not just by machines and computers, but by the complex language and logic that drives the technology.

Lane Czaplinski

BEGINNER'S GUIDE TO ANNIE DORSEN

1. Annie Dorsen, a New York director with a diverse resume—from a successful musical, to feminist performance art pieces, and political works— is currently passionately devoted to what she calls algorithmic theater, meaning she uses algorithms to decide what happens on stage. Her first piece of algorithmic theater, *Hello, Hi There* (2010), was a “conversation” between two computers. The computers were programmed by inputting a huge dataset of possible language/ responses and then creating a natural language processing algorithm that allowed the two computers to respond to one another. The computers were conversing about Michel Foucault and Noam Chomsky’s 1971 debate on whether there is such a thing as innate human nature or if we are shaped by experiences and the power of cultural and social institutions around us.

In *A Piece of Work*, Annie is using a far more complicated algorithmic modality for fragmenting and assembling the text of *Hamlet*. In this piece, light, sound, and text will all be controlled by probabilistic algorithms called hidden Markov models. The hidden Markov model we are all probably most familiar with is T9 texting; your phone will guess which word you might be spelling based on what letters you have already typed and the frequency the word is used--most frequently used words being suggested first--all based on probability. Somehow, similarly, Annie and her team are training a Markov model with the text of *Hamlet* so that a new version of the play is created each night.

2. Get reacquainted with Scott Shepherd; he will be the sole human performer in *A Piece of Work*. He performed at On the Boards in 2007 as the narrator/Nick Carraway in the *Elevator Repair Service’s Gatz*, the six and a half hour long performance of *The Great Gatsby* where Shepard read every word of the book. He’s a member of The Wooster Group as well. He is known for ability to memorize entire texts—like *The Great Gatsby* and *Hamlet*—a skillset which will surely be incorporated into the algorithmic performance of *A Piece of Work*.

3. Mark Hansen also joins the team of *A Piece of Work* as a data analyst. He has a BA in applied mathematics and a MA and PhD in statistical analysis and enjoys analyzing complex datasets. He is one of the minds behind the informational structuring of *Hamlet* as it’s used in *A Piece of Work*.

He’s possibly best known for his collaboration with Ben Rubin on *Listening Post*, a 2001 art installation that culled live time text from internet chat rooms. He used statistical analysis of language to display related phrases, for example, the phrase, “I am” as keywords, would elicit a chain of “I am” statements which are read aloud by an automated voice as the sentences scrolled across the screens of over 200 small, fluorescent vacuum screens. The piece visited On the Boards in 2002 and has shown at MoMA and the Whitney Museum amongst others.

4. Why *Hamlet*? Several reasons. Dorsen has mentioned that *Hamlet* could be read as a play about someone gathering information to make decisions. In a way, *Hamlet* is gathering a dataset from which to base a decision in a way that mimics the way an algorithm makes decisions from a dataset. Annie, in her interview with Andrew Russell, discussed how in a world increasingly shaped and informed by algorithms (check out this TED talk about algorithms shaping our world), it’s both profoundly honest and a bit sacrilegious to parse apart and rearrange this canonical text that discusses the nature of man—is he a beast, is he a mind, is he a lump of flesh?—using algorithms. It references the history of artificial intelligence (re: Alan Turing and his Turing Test) and the fear man feels about losing a sense of his importance as other methods of modeling and decision making (algorithmic) increasingly shape the world. *A Piece of Work* is then a very cold and probabilistic dissection of one of western culture’s semi-sacred, humanist, texts. *Hamlet*, a frequently reproduced and re-interpreted play, is being told through the modus of contemporary concepts in applied math, technology, and statistics; this is traditional, canonical art held tenuously in the jaws of new algorithm, and equally, the creative potential of art to transform and recharge algorithms which are currently mostly used for commerce and science.

ESSAY

Algorithmic Theater -- By and For the Non-programmer by Heidi Biggs

I'm the most excited about *A Piece of Work* because as soon as I started thinking about and researching this performance, and especially after listening to Andrew Russell [interview](#) Annie Dorsen, my safe little view of the world and how I fit into it began unraveling. The more I try to wrap my head around the programming aspect of Annie's upcoming piece, it has increasingly dawned on me that computer programming is a language that I don't understand; and that while I can navigate our increasingly digitized world, I cannot create any of it. I have new awareness of how algorithms have become infused in day-to-day life (here's a [TED talk](#) about algorithms shaping things). From micro trading on Wall Street to the movies Netflix recommends to the frequently poor decision making of Pandora, algorithms are infiltrating everyday life as silent guides and invisible participants.

Annie has become quite aware of all of this as she works on her concept of an algorithmic theater. During an interview with members of Nature Theater of Oklahoma (the On the Boards alumni who interviewed Annie for an online project of theirs called [OK Radio](#)), Annie mentioned she was interested in "the dramaturgy of an algorithm." I was intrigued by this, and it made me want very badly—at least in a conceptual/soft/metaphor-laden way—to understand how the programming of Annie's piece functioned. Therefore, this essay is a brief history of language-modeling algorithms and my understanding of the Markov models that Annie is going to use in *A Piece of Work*—by the layman, for the layman.

For Annie's purposes, programming has become a medium of expression, and it seems that trying to dissect the functioning, implications and history of the type of programming Annie is using will make her piece more interesting. In my attempts to understand how algorithms could be read dramaturgically, the first thing I asked was: how is programming being used in Annie's pieces? What meaning

is it generating? What material and history does this type of programming address?

Annie's algorithmic performances seem concerned with the nature of human intelligence and language, which she then recycles through the types of processing computers are currently able to perform. The types of programs she builds to run her shows all deal somehow with language processing while the subjects of her pieces deal with human nature. In *Hello, Hi There* (2010), she wanted to make a performance piece using a famous debate held in 1971 between Noam Chomsky and Michel Foucault that addressed whether there is such a thing as innate human nature or if we are shaped by experiences and the power of cultural and social institutions around us. She decided to have two chatbots be the performers. These performers, embodied in two computers, sat onstage and held a conversation about the debate (using language processing algorithms) as the debate played on an old television. In *A Piece of Work*, Annie is creating a programmed version of *Hamlet* because, as Annie explains, "it is in a sense the ultimate text for theatre, and the most celebrated disquisition on a certain kind of humanist discourse, in which the pure consciousness of man wrestles with the inevitability of death." Annie is taking famous debates and canonical pieces of art dealing with human intelligence/nature, and coding them into a type of computational intelligence.

Where did this man intellect vs. machine intelligence dichotomy begin? Many attribute the "beginning" to Alan Turing and his seminal paper written in 1950 titled "Computing Machinery and Intelligence." This paper discussed the results of a test he invented, the Turing Test. In his test there were three parties: a computer, a person with a computer, and a human judge with a computer. All three parties were isolated from one another. The computer and the person both messaged the judge and the judge's job was to attempt to distinguish who was the computer and who was the human based on their conversation. If they were indistinguishable, the computer passed the test, and was considered an intelligent system. In Turing's test, the computer did pass which actually proved—not that machines are intelligent—but that in order for a system to pass as intelligent, it only needs to fool a human.

Moving forward from Turing, the quest for machine intelligence has taken researchers through many algorithmic models of natural language patterning. They started with simple chains of command, or decision trees, where if you receive an input— the word “mother,” for example— a computer would perhaps respond with “tell me more about your family.” It’s a fairly inflexible system where responses generally made sense, but were fairly canned. In the 70’s programmers started writing “conceptual ontologies” where they would code the relationships between words. An ontology in relation to information science is a “shared vocabulary and taxonomy which models a domain with the definition of objects and/or concepts and their properties and relations.” (Wikipedia) In other words, programmers realized that in order to have more flexible models, they needed to generate large webs of ordered information to pull responses from.

The most modern approaches to natural language processing are models based on probability, called Markov models or hidden Markov models. These are a probabilistic way of guessing what word or phrase might come next based on training a program to a dataset. Training is just what it sounds like. For example, one hidden Markov model most of you have trained is in your cell phone—you train your phone to suggest certain words as you type with T9 based on how frequently you use them. It’s a system of guessing based on probability which gradually gains intelligence over time by repetition.

Markov Models are based on Markov chains, a mathematical principle that is fairly straightforward. I will spout the definition of a Markov chain, even though reading it might feel kind of like being washed over by a wave: “a Markov chain is a sequence of stochastic events (based on probabilities instead of certainties) where the current state of a variable or system is independent of all past states, except the current (present) state.” (Wikipedia)

Here’s my watery understanding of Markov chains: we start at ‘S1’, stage one, or: how things are right now. From S1, using a matrix of probability, one can calculate outcomes for how much will change and how much will stay the same in a given time frame. Once the changes take place

we have reached S2, stage two. Then, the same matrix of probability is applied to the second stage, and it becomes S3 . . . and onwards until stage N. The very easiest example I’ve ever heard of a Markov chain is that it’s like taking a random walk. On this walk, at every intersection you flip a coin to decide if you will turn left or right (50% chance that you are going to turn left, a 50% chance you will turn right). It’s without destination and therefore inefficient if you have a specific place to go . . . but you could explore an area using this method, and every path outward from S1 would be unique.

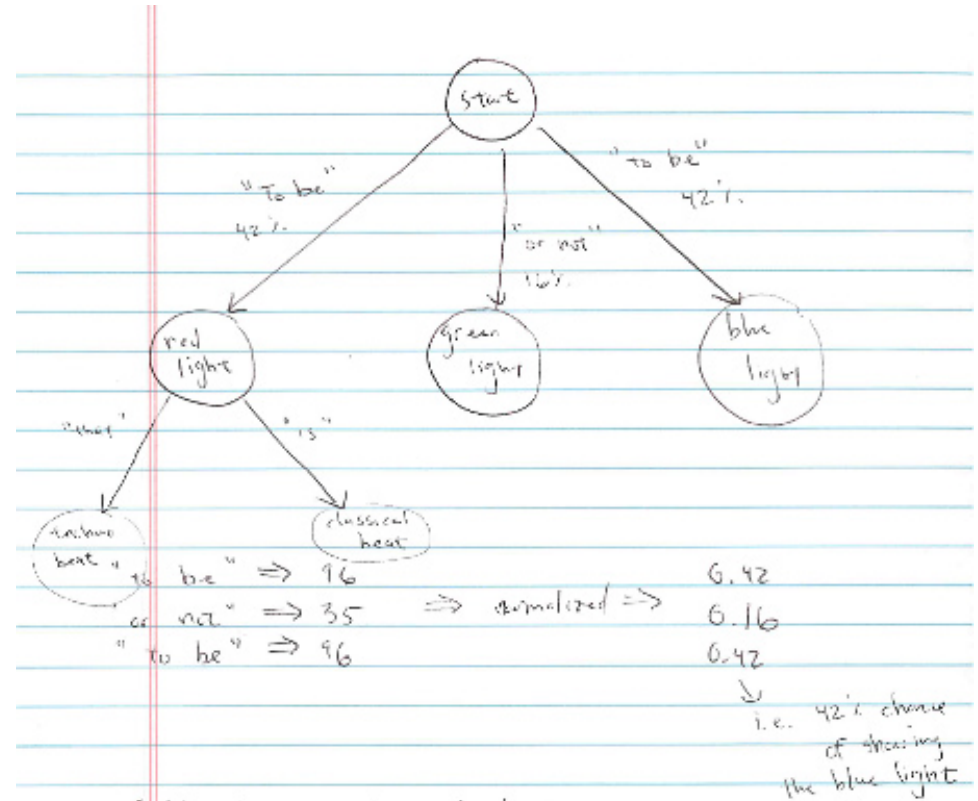
If you think about this very basic model in relation to *A Piece of Work*, you can see that each night’s performance will be different. There will always be an underlying logic, but it will be a logic driven by probability. The piece will be a two-dimensional, memory-less, non-narrative based piece, but it will still explore the area of the data field (the data field being the *Hamlet* text.) We might be returned to questions posed by the Turing test: how we listen? what will we believe as an audience? what kind of intelligence we will attribute to the system? It also seems to ask the question: what does it mean to choose such a canonical text that saturates our culture, and how will the algorithmic reading add to or take from or expose our relationship to the text? I will leave you with a little excerpt about *Hamlet* from *The Haunted Stage: Theater as a Memory Machine* that I think is great food for thought— to me it seems a random walk through *Hamlet* might exorcise the ephemeral, textual, cultural haunting of *Hamlet*:

“As both Bert States and Herbert Blau have noted, *Hamlet* is not only the central dramatic piece in Western cultural consciousness, but it is a play that is particularly concerned with ghosts and with haunting. In addition to the profound ways in which these two major theorists have demonstrated how the image of haunting appears within this complex and provocative drama, however, *Hamlet* is involved with haunting in quite another dimension: the temporal movement of the work and its accompanying theory and performance through history. Our language is haunted by Shakespeare in general and *Hamlet* in particular, so much so that anyone reading the play for the first time is invariably struck by how many of the play’s lines are already known to her. Even more

experienced readers (or viewers) can hardly escape the impression that the play is really a tissue of quotations. Our iconic memories are haunted by *Hamlet*.

A hand drawn diagram of how a Markov model might be applied to *Hamlet*.

Heidi Biggs is the outreach intern at On the Boards.



1. You have a tree of decisions
 - what lights to turn on
 - what music to play
2. The show progresses by making decisions over time using the tree
3. At each stage, you make a choice using probability
4. Words can be represented as numbers, which dictate the probabilities
5. The text of Hamlet is used to generate the probabilities

BIOS

Annie Dorsen (US)

Director and writer Annie Dorsen works in a variety of fields, including theatre, film, dance and, as of 2010, digital performance. Most recently, *Hello Hi There* premiered at the streirischer herbst festival (Graz), and was presented at Black Box Teatre (Oslo), BIT Teatergarasjen (Bergen), Hebbel am Ufer (Berlin) and PS122 (New York), among others. She is the co-creator of the 2008 Broadway musical *Passing Strange*, which she also directed. Spike Lee made a film of her production of the piece, which premiered at the Sundance Film Festival in 2009, subsequently screened at South by Southwest Film Festival and The Tribeca Film Festival, and was released theatrically by IFC in 2010 before being broadcast on PBS' Great Performances. Also in 2010, she collaborated with choreographer Anne Juren on *Magical* (premiere at ImpulsTanz Festival Vienna) and with Ms. Juren and DD Dorviller on *Pièce Sans Paroles* (brut Vienna and Rencontres Choréographiques Internationales Seine-St-Denis, Paris). In 2009 she created two music-theatre pieces, *Ask Your Mama*, a setting of Langston Hughes' 1962 poem, composed by Laura Karpman and sung by Jessye Norman and The Roots (Carnegie Hall) and ETHEL's Truckstop, seen at the Brooklyn Academy of Music's Next Wave Festival. Her pop-political performance project *Democracy in America* was presented at PS122 in spring 2008. Her short film, *I Miss*, originally the centerpiece of Democracy in America, has screened at American Film Institute Festival (AFI Fest), SXSW Film Festival, The New York Film Festival's "Views From the Avant-Garde" and the Nantucket Film Festival.

Scott Shepherd (US)

Scott Shepherd has worked with the Wooster Group since 1997, originating roles in *Troilus and Cressida*, *Vieux Carré*, *La Didone*, *Hamlet*, *Poor Theater* (Obie Award, Bessie Award) and *To You, The Birdie!* and appearing in revivals of *North Atlantic*, *The Emperor Jones*, *Brace Up!*, and *The Hairy Ape*. He has also performed extensively with Elevator Repair Service, in *Gatz* (Obie Award, Elliot Norton Award), *No Great Society*, *Total Fictional Lie*, *Cab Legs*, *Shut Up I Tell You (I Said Shut Up I Tell You)*, and *McGurk: A Cautionary Tale*.

Grégory Beller (FR)

Former student of the Normale School, Grégory Beller holds an aggregation in physics, two Master's degrees in music and a PhD in computer science. He works as a researcher, a teacher and a computer designer for digital arts. Since joining the Analysis/Synthesis team at IRCAM, he has become interested in the musicality of the spoken voice. After working on speech synthesis and prosodic modeling, he presented a PhD thesis on generative models for expressivity and their applications for speech and music, especially through performance. He has co-organized the four conferences string EMUS on the Expressivity in Music and Speech. He takes part in a range of artistic projects as a music composer and as an artistic installation designer. He is currently computer-music designer at IRCAM where he works with composers (L. Francesconi, R. Cendo, J. Lenot, T. Murail, G. Aperghis, E. Canat De Chizy, R. Rivas...) and theater directors (L. Lagarde, J. Gamblin, M. Roy, C. Teste, E. Rousset, G. Vincent...) in the creation, realization and interpretation of their pieces.

Jim Findlay (US)

Jim Findlay works across specialties as a designer, director, performer and creator with a constellation of theater, performance and music groups. He was a founding member of the Collapsible Giraffe and Accinosco/Cynthia Hopkins. He is a frequent collaborator with Bang on a Can, Ralph Lemon, and Ridge Theater, and was a designer at the Wooster Group from 1994-2003. His work has been seen in the US at Lincoln Center, Carnegie Hall, BAM, Arena Stage, A.R.T. and over 50 cities worldwide including Berlin, Istanbul, London, Moscow and Paris. He recently co-wrote and directed *Botanica* and is currently creating a piece for a sleeping audience, *Dream of the Red Chamber*. He has received two Obie Awards, two Bessie Awards, two Princess Grace Awards, a Lucille Lortel Award, and a Henry Hewes Award.

Mark Hansen (US)

Mark Hansen is the David and Helen Gurley Brown Professor of Journalism and the director of the Brown Institute for Media Innovation at Columbia University. Hansen joined Columbia in July of 2012, after a decade of shuttling between the west and east coasts. In Los Angeles,

he held appointments in the Department of Statistics, the Department of Design Media Arts and the Department of Electrical Engineering at UCLA -- literally forming a triangulation of data, art and technology -- and was a Co-PI for the Center for Embedded Networked Sensing, an NSF Science and Technology Center devoted to the study of sensor networks. While in New York, Hansen was a long-standing visiting researcher at the New York Times R&D Lab and a consultant with HBO Sports. Hansen works with data in an essentially journalistic practice, crafting stories through algorithm, computation and visualization. In addition to his technical work, Hansen also has an active art practice involving the presentation of data for the public. His work with Ben Rubin at EAR Studio has been exhibited at the Museum of Modern Art in New York, the Whitney Museum, the Centro de Arte Reina Sofia, the London Science Museum, the Cartier Foundation in Paris, and the lobby of the New York Times building (permanent display) in Manhattan. Hansen holds a PhD and MA in Statistics from the University of California, Berkeley and a BS in Applied Math from the University of California, Davis.

Ryan Holsopple (US)

Ryan Holsopple is a designer and programmer based out of Brooklyn, NY. Recent projects: Interaction Design for Radiohole's *Inflatable Frankenstein*, The Kitchen. Interaction Design for Mantra Percussion's performance of *Timber*, by Michael Gordon, BAM. Programming for Bill Morrison's Shooting Gallery, BAM. Ryan is a graduate of NYU's Interactive Telecommunications Program.

Bruno Pocheron (FR/DE)

Bruno Pocheron (born 1968) studied visual arts in France, lives in Berlin. He works internationally mostly as light designer, but also as technical director, set designer and sound designer. He initiated, with Isabelle Schad and Ben Anderson, the collaborative framework Good Work, concerned with the representation and perception of the body onstage and in society. He's currently involved in stage projects with Judith Depaule (Paris), Anne Juren (Wien), Alix Eynaudi (Wien) Jana Unmüssig (Berlin), An Kaler (Berlin/Wien), Martin Nachbar (Berlin) and Annie Dorsen (New York). He's co-organizing Wiesen55, a collective

working space in Berlin-Wedding, and Gangplank, an open network focusing on inter-media communication, relations between technology and art, and cross-overs between the fields at play in contemporary performance-making. He develops open-source interfaces in PureData allowing fluid communication between lights, sound and video and researches the dramaturgical impact of these elements.

Ruth Waldeyer (DE)

Ruth Waldeyer works as a Light/Sound designer, musician/performer, and Thai boxing teacher. She has created light and sound design for numerous dance pieces, including Clément Layes, Alice Chauchat, Frédéric Gies, Good Work, often working closely together with Bruno Pocheron and Florian Bach. She is a founding member of Gangplank - a group of light/sound/video designers, musicians, choreographers that investigates the intersections of technology and dramaturgy in the practice of making stage work. She is a musician/performer with The King Anabels and The Best Intentions, currently with The Wedding Band and the operetta *The Swan Song*, and has been featured on the radio together with Uli Ertl for WDR, reboot.fm and raudio aasland. She also organizes festivals and technic bricolage workshops and provides technical direction for ausland/Berlin. Waldeyer studied Performing Arts at HBK Braunschweig with Anzu Furukawa and Marina Abramovic (Masters 2002).

INTERVIEW

with Annie Dorsen and Andrew Russell

AR: Hi folks this is Andrew Russell I have the pleasure of sitting in a cozy corner with Annie Dorsen who is at On the Boards working on her piece *A Piece of Work*—is that right?

AD: Yes, that's right.

AR: Good, and we were just outside and the conversation had started about what Annie is doing, and how and why, and I like this idea of you as someone on a mission to play with algorithmic theater. Is that an appropriate title of it?

AD: Yes, actually that phrase is what I invented to describe what I'm doing. I started writing things like, it's digital theater or it's digital performance, but in a way there are a lot of associations coming from performance, dance and theater already about this idea. Digital dance or digital performance exists and I felt like I was doing something really pretty different. Those terms tend to refer to people who are using different kinds of tools or strategies or toys to create décor or create atmospheres and they're not really dealing with the consequences of the relationship between data algorithms and interfaces. That's really my interest—is thinking of what you see as an audience, for example, as a kind of output. The algorithm in traditional theater, you could say, the play script is like an algorithm for humans to follow and create this output called the performance, and I've been trying to figure out, you know, if you use literal data and literal computational algorithms what kind of performance gets output.

AR: Yeah, and for the last three years you've begun this, is it, *Hello, Hi There*?

AD: Yeah.

AR: Ok good, I've seen clips of it but I always want to call it “Hello, Hello, hi.” I don't know why—it just seems more exclamatory. But that was a conversation strictly, it seems, between computers and the raw material was Foucault and Chomsky and a debate and it came to life. With this, I know you have a live performer onstage – how has that shifted? What is that relationship like because it seems so different.

AD: Well this piece is a huge step up in terms of complexity of the proposition. We use *Hamlet* as the data set, and we use all a whole variety of programming strategies to manipulate that data. So we sort of think of all of the elements of theater: the text, the actor, the lighting, the sound, the video, the set—all of those are expressions or something like this. In our piece they are all algorithmically determined and their all networked together. So Scott, Scott Shepherd the performer, I jokingly refer to as an alternate output interface.

AR: What's happening in the world!

AD: Yeah, so he is one element amongst many. He receives data and he outputs just the same way the lighting design does or the sound design does. There's a stream of data created by the core system which is a kind of text manipulation system. Each night the text gets recombined and re-scrambled according to certain rules so new scenes are created out of the words that you can find in the original play by Shakespeare. As that text gets output it's sending information to the lighting system, to the sound system, to the video system, and to Scott and those individual elements use that information to create lighting, sound, video, and performance.

AR: Wow, I cannot wait that sounds amazing. And what I imagine now that you've been doing it for a few years you have a vocabulary that is both technical and artistic. What were some obstacles in the beginning of trying to bridge the divide between “artistic thinking” and a computer programmer or a technical mind?

AD: Yeah, I mean, it's interesting. I knew so little about computer science/ computer programming when I started *Hello, Hi There* and I had, I think, the same kinds of misconceptions that a lot of people do who don't work with that stuff very often. I thought that it was in a way magic. I remember sort of laughingly starting the *Hello, Hi There* process, I kind of thought I could fill a database with stuff and then I could just press a button, like press play, and it would go and do something. I didn't really realize how precise you have to give in terms of instruction, in order for the system to do something. An algorithm is basically like a little recipe, a little way to teach a computational system how to make decisions. So you have to set parameters very strictly in order for the system to know how to make decisions. What to do next.

In a way, I would say one of the biggest challenges is pretty common actually when you think of all kinds of chance based artistic practices of the twentieth century. I consider, in a way, the work I do is related to Dada, related to John Cage, related to a lot of composers who work with algorithms. I think anyone who works in this way would say, how much control, how much randomness, how do you set parameters, what kind of a leash do you keep the system on. It could be a short leash or it can be a longer leash. Making those kind of choices is in a way, the artistry of it, how much of your own taste. I tend to think there is no such thing as pure conceptual work; I think it's always collaboration. Even Cage—who had a big philosophical idea about keeping his own taste and judgment out of the picture and learning to love whatever his system produced—even he made a thousand thousand thousand decisions of what instrumentation, how long should the total piece be, what kind of time signature, not in the traditional musical sense, but what kind of time brackets to use, all kinds of things. So we talk a lot upstairs [in OtB's Mainstage Theater] about what parameters we want to set, about where do we give room for our own aesthetic judgments, and where do we try to keep our aesthetic judgments out of the story.

AR: Wow, it's almost like parenting in a way.

AD: In a way, yeah, you're trying to teach a system how to do things on its own. So that's similar to parenting I guess.

AR: Do you remember the 'aha' moment? Or the moment—however long ago it was—that started you on this path?

AD: Yeah, I totally do actually. With *Hello, Hi There* which is a piece about Chomsky and Foucault, it's about language and thought and the relationship between speech and thinking, and I definitely started with this debate between Noam Chomsky and Michel Foucault from the early 70's. I knew I wanted make a piece that used this debate somehow. This is before I thought of working with computers, before I thought of working with chatbots, any of it. And a friend of mine, a composer in Brussels, started talking about Alan Turing to me, and particularly his text from 1950 in which he sort of proposes that artificial intelligence, that we think about it the wrong way. Traditionally we think, ok, there's a spark of life that would animate a computer system and that all the sudden that computer would start thinking. And Alan Turing said, well actually, in order

to pass the test of whether a system is thinking or not, you just have to fool a human!

AR: It's so human centric, you know, the definition of. . .

AD: Well, philosophically the consequence to me is that, actually, thought is in the eye of the beholder, not in the eye of the doer. Not to get too far into *Hello, Hi There*, but what's interesting there was, according to Noam Chomsky, the ability of people to make speech is big big evidence of some idea of universal human nature, some kind of capacity for creativity, for creative thought that he believes is universal to anyone who can make a new sentence. Even if it's, you know, 'hey this isn't terrible weather we're having.' Or, 'hey, what are you doing this weekend' so I liked this turn around that Alan Turing proposes, that actually it's the listener who's doing the creative work, not the speaker.

So the 'aha' moment came when I started researching Alan Turing and I started finding some online chatbots to play with. You can have endlessly long conversations with really different kinds of chatbots online. Some of them are really really really stupid and Cleverbot, for example, is actually pretty clever. And as I started talking to them I thought this is a kind of incredible theatrical text that is being produced. The conversation is bizarre, it's full of non sequiturs, it's full of jokes, it's full of unexpected rhythms, it skates along the surface of content, sometimes the dialogue is really non-sensical, sometimes it's almost brilliant, there are sort of these flashes of humor or flashes of insight that come. And I got really interested in this space between human writing, which tends to be full of sense and easy for other humans to read, and total jibberish. Between is a whole range of stuff which I found quite poetic and even kind of moving. The ideas of how these computer systems that we are creating, can give this feeling of emerging consciousness or like consciousness struggling to emerge. You know we're not there yet with achieving anything like proper artificial intelligence, even by Alan Turing's definition, but our systems get smarter, we give them more and more information; we start to experience them in the world as partners as opposed to toys or tools. This I thought was pretty interesting, thinking about all kinds of questions which are really germane to theater, like what is alive, what is presence, what is identification, if you're in the audience, when do you start to feel kinship with the performer, can you feel kinship with a non human performer—with a machine performer?

AR: Or do you feel more comfortable and connected to your audience. You wrote somewhere about *Hello, Hi There* that because it's computers you're more horizontally linked.

AD: You might be, I should have been much more careful when I wrote that. I suspect that might be true, although every time I perform one of these pieces I notice different things happening. Sometimes it does feel that the audience gets very contagious, they make very quickly a group decision about whether they find the piece funny, moving, whatever, which suggests to me that these horizontal ties are intensified. But I don't know, you know, I don't know how you can really say that. Certainly when you go to a traditional play, and it's a Neil Simon play, the audience is united in expectation of a certain kind of laughter, certain kind of jokes and conventions. Is that not also a horizontal decision making? That we all here in the audience are going to have a great time in a particular way? Or you can think fandom, and you have this sense of like, oh it's us it's the fans of such and such band.

AR: They're different agreements though.

AD: So these horizontal relationships are super important in all kinds of performance, maybe when there are no human performers onstage that horizontal thing is stronger, or maybe not, maybe you're more alone trying to understand what the hell is going on in front of you.

AR: Sure. What role does narrative play, if any, if you think about why have you chosen *Hamlet*? What role does Scott play as a performer, does an audience identify him as a manipulator or is he just as alienated as them?

AD: I mean, this I think is up to the audience, how they identify his presence. We are certainly not stacking the deck so that you view him as such and such or such and such, we're not making metaphor out of him in this way. You know *Hamlet* obviously is the greatest play about what it means to be a human. Or at least, the most canonical, about what is a man. Is a man an angel, is a man a beast, is a man a devil, or are we just a hunk of flesh. So that's why I decided to work with this text with these experiments because I thought there were a lot of questions about the humanist tradition that could be posed. I also think it's such an iconic . . . it's sort of like sacrilege in a great way, to take Shakespeare, to take the greatest play of Shakespeare, and say, ah! I'm going to use it as raw material and I'm

going to have a computer scramble it and chop it up into little bits and spit it out with computer voices speaking. I liked in a way, this irreverence of taking such hallowed words and seeing . . . what power remains in the words when they are given this treatment.

So Scott, I think we all feel close to him because he's a person up there, he's us, but I don't know exactly what kind of narrative people will make. Like Alan Turing, I guess, if you can think that the meaning of language is in the listener, not necessarily the speaker, then narrative is probably also in the viewer/listener, and not necessarily in the thing that is communicating.

AR: It's fascinating to hear what role that plays in how you're making it.

AD: I mean of course it's both.

AR: I mean it's both. But you hand it over at some point, but I mean some artists spend a lot of time thinking about what is the audience expecting, what are we expecting, what are we giving them.

AD: I take care of the audience very much in certain ways. I definitely want it to be an experience that people can enter and be invited into, but I mostly think my job as an artist is to activate the most interesting ideas I can. What the audience does with that . . . you know, they have a lot of freedom and that's really depending on them. I used to say, people always laugh when I say this, but in a way in those pieces where people are trying to really control the emotions or the response of the audience, it's kind of rude, it's not very polite, we don't know each other personally. How dare I, in a way, think that I'm going to manipulate some stranger? I don't know what that person's emotional history is like, what their background is, what their interests are. I try to make something as interesting as I possibly can and I hope to share that.

AR: I love that philosophy; it's "I'm going to make it, and what people take from it, it's up to them." So there are social activists, and then it seems like, almost you're a social anxiety activist. I'm just thinking of what role this plays in the bigger picture of both your personal life, your life . . . you know the statement you're making about an age where surprisingly it's probably comforting for a lot of people to see a computer on stage. It's actually an identifiable portion of their life.

AD: I would say if there's anything like a political angle on this, I think it's really coming from how powerless most of us are against these machines which determine more and more of our lived reality. It feels urgent somehow that those of us who are not programmers, who are not in the tech industries, who are not working with high speed trading things on Wall Street, that we start to at least be able to understand a little what the logic is of these things because a lot is being decided behind the scenes and we kind of play with the interface. But we're not; we don't really have access to the algorithm, which is really where the decisions are happening.

AR: It's power, in a way it's class and power.

AD: Well, it's definitely power and of course that's not ever distinct from class in capitalist society. But I would really love it if people would start to not feel like its magic, not feel like it's so complicated that they can't understand and also to not feel like there's nothing happening back there and it's all invisible. We should be empowering ourselves to understand what's going on behind the scenes.

[Ed note: *False Peach* has been updated to *A Piece of Work* throughout this transcript to reference the new performance title]