chicagoperatheater

~ Brian Dickie, General Director

THE 2011
SPRING
FESTIVAL
SEASON

April 2–May 8

Tod Machover
DEATH AND THE POWERS
The Robots' Opera

Marc-Antoine Charpentier
MEDEA (Médée)

HE/SHE

operalessordinary

Robert Schumann
Frauenliebe und Leben

Leo Janáček
The Diary of One Who Disappeared

chicagooperatheater

presents

TOD MACHOVER'S
DEATH AND THE POWERS
THE ROBOTS' OPERA
An Opera in One Act

Music by **Tod Machover**
Libretto by **Robert Pinsky**
Story by **Robert Pinsky & Randy Weiner**

Conductor **Gil Rose**	Director **Diane Paulus**	Production Designer **Alex McDowell**
Choreographer **Karole Armitage**	Costume Designer **David C. Woolard**	Lighting Designer **Don Holder**
Visual & Software Design **Peter Torpey**	Sound Design **Chris Full**	Media Design **Matt Checkowski**
	Sound Technology **Benjamin Bloomberg**	

This performance will be approximately 90 minutes long with no intermission
In English with English supertitles.

World Premiere performances at the Opéra de Monte-Carlo in September 2010, under the High Patronage of H.S.H. Prince Albert II of Monaco, and with the development and production sponsorship of Association Futurum

Commissioned by the Association Futurum (Monaco)

Production Sponsors:
**The Andrew W. Mellon Foundation
The Boeing Company
Orli and Bill Staley**

**ChicagoOperaTheater.org
312.704.8414**

HARRIS THEATER at
millennium
park

205 East Randolph, Chicago, IL 60601
harristheaterchicago.org
312.334.7777

CAST & ORCHESTRA
DEATH AND THE POWERS

CAST

Simon Power..................................... James Maddalena
Nicholas .... Hal Cazalet
Evvy... Emily Albrink
Miranda .... Sara Heaton
The United Nations............................. David Kravitz
The Administration............................. Tom McNichols
The United Way................................ Douglas Dodson
Operabots.................... Val Healy, Bob Hsiung, Ruwen Liu,
José R. Pacheco, Martin Martinez Rivera,
Eyal Shahar, Akito van Troyer

THE MISERIES
A Corps of Supernumeraries

ORCHESTRA
Boston Modern Orchestra Project

Flute/Piccolo
Sarah Brady

Oboe/English Horn
Jennifer Slowik

Clarinet/Bass Clarinet
Michael Norsworthy

French Horn
Whitacre Hill

Trumpet
Terry Everson

Trombone
Hans Bohn

Tuba
Kenneth Amis

Percussion
Robert Schulz

Keyboard 1
John McDonald

Keyboard 2
Linda Osborn-Blaschke

Violin I
Charles Dimmick

Violin II
Annie Rabbat

Viola
Joan Ellersick

Cello
Nicole Cariglia

Bass
Anthony D'Amico

ARTISTIC AND PRODUCTION STAFF

Associate Director . . . . Andrew Eggert
Assistant Director . . . . Allegra Libonati
Robot Mechanical Design/Technical Development Manager . . . . Bob Hsiung
Robotic Control Systems. . . . . Michael Miller
Interaction Design . . . . Elena Jessop
Producer. . . . . Ariane Martins
Associate Producer. . . . . Simone Ovsey
Head of Music Staff . . . . .Scott Gilmore
Technical Director . . . . Peter Colao (Wooden Kiwi Productions LLC)
Assistant Technical Director. . . . . Richard Wood (Wooden Kiwi Productions LLC)
Stage Managers . . . . Julie Baldauff and Dana Stremming
Video & Display Technology. . . . . .Justin Manor and Sosolimited
Media Content . . . . The Department of the 4th Dimension
Video Tech . . . . Wayne Romanowski
Assistant Lighting Designer. . . . . .Carolyn Wong
Master Electrician. . . . . Matthew Burstein
Lighting Director . . . . .Julian Pike
Wardrobe Supervisor . . . . .Alarie Hammock
Wigs and Makeup Supervisor . . . . .Liz Printz
Robot Lead Electrical Engineer. . . . . Donald Eng
Automation Systems . . . . Matt Berlin and Jesse Gray
Robot Engineers. . . . . Tom Bottiglieri, Kelsey Brigance, Lauren Cahillane
Alex Clayton, Karen Hart and Arin Rogers
Robot and Walls Operators . . . . . . José R. Pacheco, Martin Martinez Rivera, Val Healy,
Ruwen Liu, Akito van Troyer and Eyal Shahar
Robotics Consultation . . . . . . Cynthia Breazeal (creative) and Dan Stiehl (engineering)
Operabot Research. . . . . .Mikey Siegel
Technology Assistants. . . . . Cole Houston, Elaina Present and Michelle Wang
Ambisonic Audio Mixing . . . . .Charles Holbrow
Audio Assistants . . . . Thom Howe and Luke Plummer
Rehearsal Keyboardists. . . . . .John McDonald and Linda Osborn-Blaschke
Musical Chandelier, Audio Research . . . . Mike Fabio and Andy Cavatorta
Musical Chandelier, Design Research . . . . Steve Pliam
Ambulatory Robot Research . . . . .Wei Dong
Technology Consultation . . . . Noah Feehan
Conceptual Design Realization. . . . . Christian Robert de Massy (paintings),
Vlad Bina (3D), and Arjuna Imel (3D)
Robot Animations. . . . . Fardad Faridi
Social Media . . . . June Kinoshita, Jessica Kim, ArtsPromo and Hanoa Productions
Consulting Producer . . . . .Beth Morrison
Legal Consultation . . . . Mark Fischer (Duane Morris LLP)
Music Consultation. . . . . Linda Golding (The Reservoir)
Video and Photo Documentation & Additional Video Footage. . . . . Paula Aguilera
and Jonathan Williams (MIT Media Lab)
Financial Assistance (MIT Media Lab). . . . . Taya Leary

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Worldwide Press and Media Representation Kirshbaum Demler & Associates (New York)

TECHNOLOGY NOTES
DEATH AND THE POWERS

For *Death and the Powers*, a team of faculty, staff, and graduate and undergraduate students at the MIT Media Lab has brought a host of innovative technologies to the stage. From robots to visuals to sound-producing Hyperinstruments like the giant Chandelier, more than 40 computers are required to run the production, all backed by an extensive wired and wireless networks. These computers run a broad range of distributed control systems that we developed for the production, in which each component can share information with any other in order to create a synchronized and unified presence of Simon in The System.

The Chorus of Operabots and three large bookshelf periaktoi are controlled centrally using software we developed specifically for choreographic robots onstage. This software includes a 3D visualization for monitoring and authoring the animation of robotic movement and lighting. If need be, puppeteers above the stage can assume manual control of any parameters of a robot using a typical video game controller. An absolute position tracking system monitors the location of robots and actors onstage to help the robots navigate, as well as affect sound and visuals.

After Simon Powers enters The System, the singer portraying him, James Maddalena, exits the stage, though he continues to sing and act as if he were onstage. In a technique we've coined Disembodied Performance, gestural and physiological sensors, as well as voice analysis, capture his offstage performance which is then used to generate in real time the visual representation of Simon Powers in the bookshelf displays and other aspects of the production. Mapping software was created that can connect sound, robots, and visuals to the singer's performance. A custom graphics environment allows these live performance parameters to generate expressive graphic representations of Simon in The System.

Another method of representing The System's omnipresence is through sound. Over 140 speakers are used to create a rather unique sonic environment. Two formats of surround sound are used in the production. Wave Field Synthesis uses an array of tiny speakers across the front of the stage to create the impression of a sound emanating from any point in the space. Ambisonics is used to move sound all around the audience. Software and plug-ins for common audio packages were engineered to allow the hundreds of streams of audio to be processed in real time.

All of this technology - although complex - is mostly meant to work invisibly "behind the scenes", helping to draw audiences into the unusual, mysterious world of Simon and The System.

Peter Torpey, Elena Jessop, Ben Bloomberg