

# Hellen Sky

with Paul Bourke

*Deep Space: between body and cosmos*

*The Brain—is wider than the Sky*

*For—put them side by side—*

*The one the other will contain*

*With ease—and You—beside.*

*Emily Dickinson*

*Deep Space* is a work in progress, emerging through the collaboration of digital choreographer Hellen Sky and computer scientist Paul Bourke, which consists of many transformations of data generated from neuroscience, cosmology and patterns of movement occurring in the natural and simulated worlds.

外层空间：身体与宇宙间

头脑，比天空辽阔——

因为，把他们放在一起——

一个能包含另一个

轻易，而且，还能容你

艾米莉·狄更生

“外层空间”是一件动态性作品，其中运用了大量神经科学、宇宙学以及自然与模拟世界运动规律的转换数据，由数字舞蹈设计家海伦·斯凯与计算机专家保罗·伯克博士合作完成。



Overleaf and above:  
*Deep Space*, audio-visual  
installation (detail), 2006  
© Hellen Sky, Paul Bourke

上页和上图：外太空，  
视-听装置（部分），2006年  
@海伦·斯凯，  
保罗·伯克博士

Working with spoken word, sound, image, movement, virtual and physical architectures, and often using real time data generated by the body, Sky's practice is a formidable dance between the senses. Bourke, formerly a research scientist at the Brain Dynamics Laboratory, is a visualisation research fellow at the Centre for Astrophysics and Supercomputing Group, Swinburne University in Melbourne.

Searching for a common ground between poesies, imagination and science, the team has been working towards presenting possibilities for us to become more aware of our presence within the greatness of space—those dark heavens above that we are intrinsically connected to, yet have such a limited knowledge of.

*Margaret Cameron: Is it possible for an artist to describe the unformed?*

**Hellen Sky:** As a performer I have always been aware of the importance of listening to the body, of following its intelligence. Because of this, I tend to think that a more intuitive perception might provide us with the kind of knowledge we need to make better choices about the future we could have... Through the advancement of science and super computing humans now have greater powers to influence and, perhaps one day, control evolution. The challenge is to imagine a future that surpasses the technological overload, one that sustains the poetics of being as something that is quintessentially important to humans.

*MC: Is this the premise for Deep Space then?*

**HS:** *Deep Space* is a metaphor for patterns of movement that happen in-between—between our sensed experience, our imagined experience and our experience of new scien-

通过对语言、声音、图像、动作、虚拟与实际建筑以及人体实时数据等资料的使用，斯凯设计出一场宏大的感官舞蹈。而伯克博士，前大脑动力学实验室研究科学家，目前是墨尔本斯文伯恩大学天体物理学与超级计算体中心的显像研究员。

两人的合作致力于寻求诗歌、想象与科学的共同点，因此一直希望能为人们展示更多的可能性，让人们能够加深自身对于广阔空间的存在感知。我们虽然从诞生之日就与那悬于头顶的无垠太空有着紧密的联系，但我们对它却知之甚少。

玛格丽塔·卡麦隆：用艺术形式表现无确定形态主体可能吗？

**海伦·斯凯：**作为一名表演者，我一直注意倾听身体的声音并遵循其规律。也正是因此，我开始思考也许更重视视觉感受可以让我们了解如何选择更好的未来……通过科学的进步和超级运算能力，人类如今能够更大程度上影响，甚至可能在将来控制生物进化。我现在做的是想象一个超越了科技负载的未来，一个具有诗歌浪漫气质的未来。而这种气质对人类来说是相当重要的。

卡：这就是“外层空间”的创作前提？

**凯：**“外层空间”是对运动规律的比拟，是我们感官体验、想象体验以及新科学命题体验间的互动规律。是能感觉到的和感觉不到的空间，是我们不了解的却“感到”自然的空间。

卡：这是否是一种所谓的渗透性关联？

**凯：**在艾米莉·狄更生的诗里，她说头脑比天空宽广。从生物学角度来讲，大脑是一个复杂得可怕的生理系统，由亿万个细胞构成，并将各种细胞反应传送到身体的各个部位。但它却能够感知到大大超越其本身构造限制的对象，这种认知能力就使得这个令人费解的智能器官比天空更伟大。艺术与科学，尽管彼此的实践目的不同，但却同样能帮助我们更好的了解许多类似的奇怪现象。“外层空间”将现有的人类对“微观”（身体）和“宏观”（宇宙）的科学认识结合到一块儿，为观众提供一个思考的空间。

tific propositions. Spaces within and without, spaces that go beyond us and yet 'feel' innate.

MC: Are you speaking of a permeable relationship?

HS: In her poem Emily Dickinson describes the brain as being wider than the sky. Biologically, it is an awesomely complex system of zillions of cells and sub cellular activity distributed throughout the body. But it is the things that it can perceive beyond its own structure, its ability to take us places that makes this incomprehensibly intelligent organ greater than the sky. Art and science, despite their opposing focus of intent, have both served us to better understand many such phenomena. The *Deep Space* project brings lived and scientific knowledge of the 'micro' (the body) and 'macro' (the cosmos) together, creating a space for reflection for the audience.

MC: You often read data as metaphor interchanged with phenomenological data, for instance:

There are 100 trillion stars in  
our universe.  
There are 100 trillion IP addresses  
on the Internet.  
100 trillion neurons in my brain.  
There are a hundred trillion cells  
in the universe of my body.  
But only 10 trillion of these cells  
are human.

HS: In a way, language itself is a space where art, technology and science can meet as different but interconnected propositions. The texts draw attention to the increasing interdependence between artificial and human intelligence.



Right: *Deep Space*,  
audio-visual installation  
(detail), 2006  
© Hellen Sky, Paul Bourke

右图：外太空，  
视-听装置（部分），2006年  
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卡：你好像常常将科学数据解读成现象隐喻，例如：

“宇宙中有100万亿颗恒星。  
网络里有100万亿个IP地址。  
大脑里的100万亿个神经原，  
身体里的100万亿个细胞，  
却只有十分之一是人。”

凯：某种程度上，语言本身就是艺术、科技与科学存异求同的一个命题。而我的这些文字记录体现的是人工与自然智能间日益扩大的彼此独立性。

卡：你偏好这种液态文本是为了保持数据的流动性吗？

凯：我把我的表演记录称为液态文本是因为我从不会以时间为顺序来排列，并且也从不将它们固定为某种单一的比喻。我对液态的理解是指文字应当将现有的体验作为一种持续的多样化即时性的生物、数字数据流记录下来。

卡：这相当复杂啊！

凯：如果我们从太空角度向下审视我们自身，我们的社会政治世界实际上并没有什么意义，因为我们能看见的只不过是受制于某些边界内的信息流、网络关联和生态环境而已。我认为艺术与科学的合作中最吸引我的就是这两者能够带来一个诗意而又理性的观察事物内部关联的视角。

卡：因此艺术与科学再一次引领并启发我们思考？

凯：我相信比起过去，现在我们更需要建立艺术与科学间的桥梁。在这样一个以科技为发展动力的世界，我们所需要的教化是确保那些充满感情的、敏感的、诗意的体验还仍然存在。  
……电话铃响。

玛格丽塔·卡麦隆  
墨尔本，2006年4月

玛格丽塔·卡麦隆，作家、导演、演员。澳大利亚艺术理事会戏剧学会特别会员。

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MC: *Your preference for these liquid papers is to flow with data?*

HS: I call my performance texts liquid papers because they are never fixed in time and never fixed to a singular metaphor. What I mean by liquidity is that the writings reflect lived experiences as a continuum of multiple and simultaneous flows of data—biological and digital.

MC: *This is quite complex!*

HS: Well, if we looked down upon ourselves, from some other planetary perspective, our socio-political spaces would not make much sense because we would see them as flows of information, networks and ecologies that cannot be contained behind borders. What I find so exciting about collaborations between art and science is that the two bring a poetic and a rational perspective to point to this interconnected state of being.

MC: *So art and science once again lead us as well as reflect us?*

HS: I believe that more than ever before we need to maintain a bridge between art and science. In a techno-scientifically driven world, enlightenment would be about ensuring that emotive, sensing, poetic experiences still exist.

... The phone rings.

**Margaret Cameron**  
Melbourne/April 2006

Margaret Cameron is a writer, director and performer, Theatre Fellow of the Australia Council for the Arts.

This project has been realised with the assistance of the Australia Council for the Arts' Dance Board, Arts Victoria, Deakin University and Swinburne University, Melbourne.

Opposite page: *Deep Space*,  
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Sound score by David Franzke

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音效制作：David Franzke