Straw Bear presents

BLUE ORANGE

Joe Penhall

This amateur production of “Blue/Orange” is presented by special arrangement with SAMUEL FRENCH, LTD

Robert:

Let me join up some of the dots for you.

Let me do some of the maths for you:

Schizophrenia is the worst pariah.

One of the last great taboos.

People don't understand it.

They don't want to understand it.

It scares them.

It depresses them.

It is not treatable with glamorous and intriguing wonder drugs like Prozac or Viagra.

It isn't newsworthy.

It isn't curable.

It isn't heroin or Ecstasy.

It is not the preserve of rock stars and supermodels and hip young authors.

It is not a topic of dinner-party conversation.

Organised crime gets better press.

They make movies about junkies and alcoholics and gangsters and men who drink too much, all over, and beat their women until bubbles come out of her nose, but schizophrenia, my friend, is just not in the phone book.

Joe Penhall's Blue / Orange

A souvenir programme to mark Brain Awareness Week

Presented by the Institute of Neuroscience, Newcastle University

WHAT IS SCHIZOPHRENIA?

Joe Penhall's play Blue/Orange turns on whether Christopher, a young black man, has schizophrenia or not. There is no question he is having some strange and disturbing experiences. In question is whether those experiences justify a diagnosis of schizophrenia, or a lesser diagnosis, in this case borderline personality disorder.

The symptoms of schizophrenia were known to the ancients, but the modern term is only just over one hundred years old. Schizophrenia as we now think of it involves three groups of symptoms. The positive symptoms involve unusual experiences such as hearing voices or seeing things, and delusions—that is, unrealistic beliefs that are held with absolute conviction. It is because of these positive symptoms that the condition is, along with bipolar disorder and a few others, considered to constitute psychosis. The negative symptoms involve a flattening of emotional responses. Finally, cognitive impairments describe difficulties with reasoning, remembering or paying attention. It is the positive symptoms that, through their striking nature, are most likely to attract attention and trigger a diagnosis. However, they are also the most episodic (they come and go), and most likely to respond to drug treatment. It is the negative symptoms and cognitive impairments that have the greatest impact on quality of life, and it is these that are most likely to be chronic.

Schizophrenia is typically diagnosed in young adulthood. In this, Christopher, in his early twenties at the time of the play, is not at all unusual. This does not mean that the difficulties of the sufferer have only begun in the twenties; there may often be subtle differences much earlier in life. Rather, this is when the positive symptoms are most likely to become overt and noticed. Men are somewhat more likely than women to receive a schizophrenia diagnosis, and the incidence is around 7 people in a thousand.

There is no cure for schizophrenia. However, contrary to the widespread belief that schizophrenia is a life sentence, recent evidence shows the course of the disease to be very variable. About one quarter of diagnosed sufferers make a complete recovery; another quarter require long-term medical care; and the remaining large group make a partial recovery, but continue to have some difficulties.

At the spear-head of our current treatment strategies lie various kinds of anti-psychotic drugs; you hear reference in the play to the older ('typical') anti-psychotics, and the newer ('atypicals') anti-psychotics. These differ not so much in their effectiveness but the extent of side-effects, such as movement difficulties, lethargy and weight gain, that can be associated with them. What the different anti-psychotics share is that they target a particular class of receptor of the brain neurotransmitter dopamine. Anti-psychotics reduce positive symptoms but do little for negative symptoms, and hence are no panacea in terms of social integration or quality of life.

> Robert:
> We spend our lives asking whether this or that person is to be judged normal, a 'normal' person, a 'human', and we blithely assume we know what normal is

A BIOLOGICAL DISORDER?

In prior decades, debate raged about whether schizophrenia should be thought of as a biological disorder, rather than a social construction with which we stigmatise those who are different, or the only sane response to insane social situations. Thankfully those polarities are somewhat behind us. Of course schizophrenia is an important sense a biological condition, involving different functioning of the nervous system. It's hard to see what it could mean for a disorder not to have a biological basis, given that we are organic creatures whose thoughts and feelings all have a locus in the brain.

However, there are certain important things that accepting a biological basis for schizophrenia does not mean. It does not mean that only genetic factors are important in the causation of schizophrenia. Schizophrenia does appear to run in families, and the largest single risk factor is having a family history of schizophrenia. However, there is no single genetic cause as there is for conditions like Huntingdon's disease. Most likely, there are many common genetic variants each of which can fractionally increase the risk of schizophrenia, and rarer large reorganizations of the genome (these are called copy number variants) that substantially increase the risk. All these genetic factors combined though, still fall a long way short of telling us who will develop schizophrenia and who will not. There has been an increasing recognition that there are many environmental factors that

seem important: complications when you are being born, maternal infections during pregnancy, being born in the winter, social background, growing up in a city, exposure to cannabis (and, as we will see below), being an immigrant.

How can one and the same condition be caused by both genes and the environment? Actually, it's not difficult at all to see how that could be the case. The nervous system is just that, a complex *system* that has to develop. Throughout this process of development, there are many influences, coming both from genetic activity and environmental inputs. Anyone of these influences, or many of them acting in concert, has the potential to push the system towards a somewhat different end state.

The other thing that calling schizophrenia a biological condition does not mean is that only drugs are of use in treating it. Just as many kinds of influence have the potential to move the nervous system to a particular end-state, many types of intervention have the potential to move it away from that end-state. Cognitive Behavioural Therapy is approved by the National Institute for Health Care Excellence, though the efficacy and cost effectiveness of this approach to therapy is still debated. More broadly, all agree that the right psychological and social support is as important in tackling schizophrenia as the pharmacological management of the positive symptoms.

Whether this kind of support is sufficiently forthcoming is less clear. The Schizophrenia Commission, chaired by Sir Robin Murray and reporting in 2014, concluded that in general it was not: only a small minority of sufferers is offered Cognitive Behavioural Therapy, and pressures on resources mean that throughput and pharmacological management are emphasised over psychological rehabilitation. Schizophrenia and conditions like it also challenge our institutional separation between health care, social care, housing, and employment. The difficulties schizophrenia sufferers can have do not fit neatly into any one of these categories, as Christopher's case reminds us.

> Robert: It's a movable feast.
> Bruce: No, it's not.
> Robert: It's a matter of 'opinion'. And I'd be loath to resection the boy on the basis of a difference of opinion. It's semantics. And right now, Doctor, my semantics are better than yours so I win.

WHAT'S IN A NAME? THE DIFFICULTIES OF DIAGNOSIS

The diagnosis of schizophrenia is made in a syndromic way. In other words, it turns on recognising the presence of some or all of a cluster of symptoms. There is currently no other way: no anatomical or physiological marker has been established that is present in all and only cases of schizophrenia. There is still lively debate about whether it is useful to view schizophrenia as a unitary entity, not least because there is also a plethora of closely-related disease labels that overlap in symptoms with schizophrenia: schizoaffective disorder, schizophreniform disorder, schizotypal personality disorder, brief psychotic disorder, delusional disorder, depression with psychotic features. A 2016 article in the respected *British Medical Journal* was titled simply: '"Schizophrenia" does not exist'. The point was not that the difficulties of schizophrenia sufferers are not real difficulties, but rather that that a single categorical label can be misleading.

In a sense, categories like schizophrenia suffer simultaneously from being too broad and too narrow. They are too narrow because many of the symptoms of schizophrenia (as well as many of genetic risk variants and neurobiological differences) are actually shared with other psychiatric conditions as varied as bipolar disorder, depression, attention deficit hyperactivity disorder, and autism. Too broad, because every sufferer has a unique combination of symptoms; by lumping these all into a single category, we might be masking important variation in cause and treatment.

Given this variation, there can be considerable uncertainty in making a differential diagnosis of schizophrenia. Actually it's not just the boundary between schizophrenia and other conditions; the boundary between schizophrenia and wellness is also less clear-cut than one might imagine. For example, population surveys show that a significant fraction of proportion of people hears voices from time to time, without ever receiving a psychiatric diagnosis as a result.

That a diagnostic boundary requires some judgement is not to say that it is meaningless, or that anything goes. But it does open up a space for disagreement and for the entry into the field of unconscious biases, ulterior motives, and considerations of power and authority to play a role. And it is in this space that the drama of *Blue/Orange* is built. In the uncertainty of schizophrenia / non-schizophrenia, the considerations of doing no harm could genuinely pull both ways. Failing to diagnose schizophrenia when the diagnosis should be made is to

not treat the condition as seriously as it should be treated; diagnosing schizophrenia when less serious diagnoses might also be appropriate exposes Christopher to the potential for stigma and escalation of medical intervention in his life.

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Robert:
Think about it. There is more mental illness
amongst the Afro-Caribbean population in
London than any other ethnic grouping. Why?
Is it the way we are diagnosing it? Is it us?
Is it them?
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THE STRANGE STORY OF MIGRATION AND SCHIZOPHRENIA

Ever since the 1930s, when an increased risk of schizophrenia was observed in Norwegian migrants to the USA, there have been suspicions of a link between schizophrenia and being a migrant. The study of migration and schizophrenia was rekindled in the 1990s, when it became clear that Afro-Caribbean men in the UK in particular were at increased risk. We now know some very important facts about schizophrenia and migration. Being an immigrant is a big source of increased risk; the risk ratio for being an immigrant versus not is at least 2, meaning that it doubles your risk. To put this in context, it is stronger than any genetic risk factor we know of. Moreover, the increased risk is not just in first-generation immigrants, but persists into, or could even be stronger in, the second generation.

How do we know that the increased risk is not just to do with genetic attributes of the immigrating population? Several ways. The immigrant stock can be quite different—Moroccans to the Netherlands, Russians to Israel, Africans and Caribbeans to the UK—and the result is the same. The degree of increased risk seems to be proportional to the degree of discrimination and social marking that the ethnic group receives in the host nation—in the Netherlands, Moroccan immigrants often experience discrimination, and their risk ratio is 6, compared to Turks and other Europeans, who experience little discrimination and have scarcely increased risk. And then there is the ethnic density effect—in both the UK and the Netherlands, it has been shown that risk is only increased for ethnic minorities if they live in neighbourhoods where their minority is rare. In neighbourhoods dense in people of similar backgrounds, their risk is much the same as that of the majority population. All this points to the importance of social processes: of alienation, discrimination, and identity, in the pathway that can lead to the diagnosis of

schizophrenia. But of course it is hard to tell to what extent some kind of minority discrimination causes a real increase in schizophrenia, versus a mere increase in the diagnosis of schizophrenia.

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Robert (icily):
I am saying where he comes from it is almost
certainly not an unrealistic notion. Where we
come from, it evidently is. Get it?

Bruce:
But he comes from Shepherd's Bush.
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CULTURE AND MEANING IN PSYCHOTIC SYMPTOMS

Whatever view we take on the causes of psychotic symptoms, the manifestation of those symptoms is influenced by culture. Victorian delusions of thought control concerned pneumatic devices involving systems of metal tubes under London; contemporary versions are more likely to involve wifi networks. Thus, culture and the social context make available representations from which psychotic symptoms can be constructed. Members of different cultural groups are more or less likely to have specifically religious content to their unusual experiences. There even seem to be differences in the basic experience of psychotic symptoms. One study found that whilst auditory hallucinations were the most common type in all cultures studied, visual hallucinations were rather common in Ghana and Nigeria but very rare in Pakistan.

Culture thus introduces variability in psychotic symptoms. It can also present challenges in terms of providing reference points from which delusional beliefs can be interpreted as departures. There are many esoteric and folkloric traditions within which psychosis-like experiences appear routinely: for example, animals or inanimate objects that speak; control of one agent's thoughts by another; or person control at distance. Thus, it is mandatory when making a schizophrenia diagnosis to take relevant account of the person's cultural background.

Failure to account for cultural background may--or may not--explain a paradox that has been known about in psychiatry in the USA for a long time. When patients present with psychotic symptoms, black patients seem more likely to end up with the schizophrenia diagnosis, whereas white patients are more likely to end up with a less severe diagnosis, for example of a mood disorder with psychotic features. On

careful re-examination, studies have found a significant fraction of black patients diagnosed with schizophrenia were wrongly diagnosed. This matters, because the somewhat inaccurate view that schizophrenia always follows a chronic, degenerating course tends to lower clinical expectations. Thus, when the young psychiatrist Bruce comes to the more experienced consultant Robert with his view that the diagnosis of his black patient Christopher should be changed to schizophrenia, there is a prior history of which he may not be aware.

BLUE/ORANGE

Blue/Orange premiered at the National Theatre in London in April 2000, and subsequently transferred to the West End. It won an Evening Standard award, a London Critic's Circle Theatre Award, and a Lawrence Olivier Award for best new play. It was also made into a BBC film in 2005. Though deeply rooted in its particular turn-of-millennium context, the play seems apposite once again, with its backdrop of growing capacity crisis in the NHS, and the effects on hospitals of problems in housing and social care.

Blue/Orange is not Joe Penhall's only foray into the world of schizophrenia. His acclaimed *Some Voices* (1994 play and 2000 film starring Daniel Craig) also deals with the condition.

FURTHER READING

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Bourque, F., van der Ven, E., & Malla, A. (2011). A meta-analysis of the risk for psychotic disorders among first- and second-generation immigrants. *Psychological Medicine*, *41*, 897–910.

Owen, M. J., Sawa, A., & Mortensen, P. B. (2016). Schizophrenia. *The Lancet*, 388, 86–97.

Strakowski, S. M. (2003). How to avoid ethnic bias when diagnosing schizophrenia. *Current Psychiatry*, *2*, 72–82.

Schizophrenia Commission (2012). *The Abandoned Illness: A Report By The Schizophrenia Commission*. Downloadable from: https://www.rethink.org/about-us/the-schizophrenia-commission

THE PRODUCTION

The action takes place in three acts, in an NHS psychiatric hospital in London. There will be a 15-minute interval between acts two and three.

THE CAST

Wesley Milligan (Christopher): Wesley is an actor currently based in Durham. This is actually the second time he's played the role of Christopher. He's enjoyed the challenge of trying to interpret the role differently the second time around and working with a new group of actors. His recent roles include Dr Bradman in *Blithe Spirit*, Valentine in *Two Gentlemen of Verona* and *Othello*. He's also a musician and sings in a jazz band called *The Vibes*.

Mark Edwards (Dr. Bruce Flaherty). After reading English at King's College London, Mark trained as an actor at the Guildhall School of Music & Drama before working professionally as an actor. In 2006 he established Vivid Theatre Company which has since gone on to produce over 25 plays including classical drama, contemporary works and new writing. Credits include *The Collector, The Winter's Tale* and *Just Checking*, Vivid's 2015 multimedia verbatim piece on OCD. In addition to this work, he is also Senior Lecturer in Acting at Newcastle College and researching PhD by Creative Practice on psycho-physical performance methodologies and their relevance to the portrayal of obsessive-compulsive disorder on the stage.

Daniel Nettle (Dr. Robert Smith). The outcome of a series of unlikely events, Daniel is Professor of Behavioural Science at Newcastle University. He originally trained as an actor at Arts Educational School, London, at the end of the last century, or possibly the one before that. He has appeared in, written or directed many productions, including *Songs from the Frozen Earth* (Abacus), *Kafka's The Trial* (Cherub Company London), *The Collector*, *The Resistible Rise of Arturo Ui*, and *After Darwin* (Vivid Theatre Company), *The Devil You Know* (Cloud Nine), and Sean O'Brien's *The Birds* (Threeovereden).

ABOUT STRAW BEAR

Straw Bear is a pop-up company dedicated to the exploration of science, medicine and society through theatre. Look out for our next production *The Departmental Seminar*, a loose retelling of Franz Kafka's *The Castle*, set in a British university.

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Our core mission is to undertake the highest quality research in neuroscience that translates into patient benefit, real world application and commercial opportunity. There are currently 75 academic staff members making it one of the largest groupings of neuroscientists in the UK. The scope of our research is broad and so grouped into 4 themes; Neural Systems and Applied Neurophysiology, Mitochondrial Disorders, Developmental, Behavioural and Comparative Neuroscience, Neurodegenerative, Cerebrovascular and Psychiatric Disorders. The impacts of our research are diverse, with our main focus on health and welfare, for both humans and animals; public policy and practice, especially on developing guidelines for diagnosis and treatment; commerce and the economy, via income generation through spin-out companies and improved cost-effectiveness of clinical treatments; and society and culture, where we aim to educate, engage, and inform debate, including on the ethics of animal research and the de-marginalization of mental illness. We aim to develop vibrant and productive interactions between researchers within our Institute, with other Faculty of Medical Sciences research institutes and with external groups, aligning with the University's core mission of 'Excellence with a Purpose'.

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