

# THE HARD PROBLEM

BY TOM STOPPARD

A DPS ACTING EDITION PUBLISHED BY

**BROADWAY**  
LICENSING GLOBAL

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*For Sabrina*

THE HARD PROBLEM was first presented by the Royal National Theatre on January 21, 2015. It was directed by Nicholas Hytner, the production design was by Bob Crowley, the lighting design was by Mark Henderson, the sound design was by Paul Arditti, the music supervisor and arranger was Matthew Scott, the pianist was Benjamin Powell, and the company voice work was by Jeannette Nelson. The cast was as follows:

SPIKE ..... Damien Molony  
 HILARY ..... Olivia Vinnall  
 AMAL ..... Parth Thakerar  
 LEO ..... Jonathan Coy  
 JULIA ..... Rosie Hilal  
 URSULA ..... Lucy Robinson  
 JERRY ..... Anthony Calf  
 CATHY ..... Hayley Canham / Daisy Jacob / Eloise Webb  
 BO ..... Vera Chok  
 ELAINE (on screen) ..... Kristin Atherton

THE HARD PROBLEM was produced by Lincoln Center Theater in New York City in 2018. It was directed by Jack O'Brien, the set design was by David Rockwell, the costume design was by Catherine Zuber, the lighting design was by Japhy Weideman, the sound design was by Marc Salzberg, the original music was by Bob James, and the stage manager was Christopher De Camillis. The cast was as follows:

SPIKE ..... Chris O'Shea  
 HILARY ..... Adelaide Clemens  
 AMAL ..... Eshan Bajpay  
 LEO ..... Robert Petkoff  
 JULIA ..... Nina Grollman  
 URSULA ..... Tara Summers  
 JERRY ..... Jon Tenney  
 CATHY ..... Katie Beth Hall  
 BO ..... Karoline Xu  
 ENSEMBLE ..... John Patrick Doherty,  
 Eleanor Handley, Olivia Hebert, Sagar Kiran  
 Madeleine Pace, Baylen Thomas, Kim Wong

## AUTHOR'S NOTE

I am grateful for help from the British Association for Adoption and Fostering, in the person of Dr. John Simmonds. It is my responsibility that the circumstances in the play have more regard for dramatic purpose than for contemporary regulations.

As for the science in *The Hard Problem*, I am in debt to more books than I can mention, and I have also enjoyed the privilege of exchanges with John Coates (whose recent work on hormone-related performance in the financial world the plot anticipates), Richard Dawkins, Robert May, Thomas Nagel, John Searle, Elliott Sober, George Sugihara, and David Sloan Wilson. I owe particular thanks to Armand Marie Leroi, who was a patient guide through the writing and saved me from numerous errors.

## CHARACTERS

SPIKE

HILARY

AMAL

LEO

JULIA

URSULA

JERRY

CATHY

BO

ELAINE  
(on screen)

# THE HARD PROBLEM

## Scene 1

*Hilary's bedsit. Evening.*

*Hilary, twenty-two, and Spike, about thirty, with mugs of coffee.*

**SPIKE.** You're looking at two years. The jewellery was under the floorboards. The police have nothing to connect you to the scene of the robbery.

**HILARY.** I'm going to vomit.

**SPIKE.** If you stick to the story, they can only charge you with receiving. With good behaviour, you'll be out in a year. On the other hand—

*Hilary performs exaggerated boredom, a collapse of unloosened joints.*

**HILARY.** I'm warning you, Spike. Projectile vomiting. If I hear the words "prisoner's dilemma," I'm going to puke into that bin.

**SPIKE.** You're being childish. The Krohl is a plum ticket and the psychology department has published a dozen papers on the Dilemma, so hang in. The question is, can you trust Bob?

**HILARY.** Who's Bob?

**SPIKE.** *Bob* is who smashed the jeweller's window while you grabbed the rings and watches.

**HILARY.** Oh, *Bob*.

**SPIKE.** *Bob* is who's sticking to the story, you hope. *Bob* is who's asking himself, can I trust Luanne to stick to the story?

**HILARY.** *Luanne?*

**SPIKE.** There's never been a smash-and-grab jewel raider called

Hilary. If Bob snitches he'll get off and you'll get seven years because you stuck to the story, you muggins.

**HILARY.** Why would Bob do that except in the Ladybird Book of Game Theory?

**SPIKE.** In case you do it to him. That's what this is about. That's why the game is called the prisoner's dilemma. Two rational prisoners will betray each other even though they know they would have done better to trust each other.

**HILARY.** Rational? You have to be a *person* to be rational. You've left out everything about Bob and me except we're each out for ourselves and we've got two buttons to push. Actually, Bob loves me.

**SPIKE.** Hold on.

**HILARY.** I did it. Bob had nothing to do with it, he wasn't even there.

**SPIKE.** That's not one of the options.

**HILARY.** I smashed the window, grabbed the jewellery and hid it under the floorboards.

**SPIKE.** It's not an option in the game.

**HILARY.** I'm confessing anyway. I'm going to give Bob a chance to go straight.

**SPIKE.** (*Beat.*) Why?

**HILARY.** Because I'm good.

**SPIKE.** Right. Promise me one thing. Don't pull this one if it comes up in your interview. The game is not about you and Bob, it's about a statistical tendency. It's about survival strategies hard-wired into our brains millions of years ago. Who eats, who gets eaten, who gets to advance their genes into the next generation. Competition is the natural order. Self-interest is bedrock. Co-operation is a strategy. Altruism is an outlier unless you're an ant or a bee. You're not an ant or a bee, you're competing to do a doctorate at the Krohl Institute where they're basically seeing first-class honours degrees and you're in line for a two-one, so don't be a smart arse, and above all don't use the word "good" as though it meant something in evolutionary science.

*Spike tastes his coffee.*



Horrible. Haven't you even got sweetener?

**HILARY.** Don't you believe in good, Spike?

**SPIKE.** I believe in it, it's just not what you think it is.

**HILARY.** What do you think it is?

**SPIKE.** Behaviour. It takes millions of years to evolve, but it's evolved behaviour, whether you're a person or a vampire bat. Every night, vampire bats leave the cave in search of warm blood. When they get back to the cave, the ones who were lucky cough up for the ones who weren't. Literally. They regurgitate some of the blood to feed the bats who came home hungry. Do you think these are *good* vampire bats?

**HILARY.** No. I don't. But I don't think they're little people with wings and sonar, either.

**SPIKE.** I didn't want to be the one to break it to you. How many times do you think a bat will refuse to share its dinner before it finds out next time it comes home hungry the other bats won't cough up?

**HILARY.** I don't know.

**SPIKE.** I don't know either, but off the top of my head...four. Four times, say. That'll teach the selfish little bastard how to behave. I don't see that we have much to feel superior about, as a species. Altruism is always self-interest, it just needs a little working out.

**HILARY.** Like you going miles out of your way to give me a lift home?

**SPIKE.** Exactly. It's a cost-benefit thing. I go miles out of my way because you might invite me in for coffee, and I throw in a tutorial to get into your—

**HILARY.** Pants.

**SPIKE.** Good graces, I was going to say. But you're basically right on the biology.

**HILARY.** I'd rather not complicate...

**SPIKE.** Hey, I'm your tutor, it would be an abuse of trust without precedent in higher education.

**HILARY.** It's a cost-benefit thing. I'm sorry about the coffee, too. But giving something to get something isn't altruism, anyway.

**SPIKE.** That's what I'm saying.

**HILARY.** No, you're not, you're saying there's no such thing, and I'm saying there is. I'm saying Rose of Sharon giving her milk to a starving man is different from bats.

**SPIKE.** Rose of Sharon. Is she in the Bible?

**HILARY.** No, she's in *The Grapes of Wrath*, you pillock.

**SPIKE.** Oh, fiction. If you want a tip, don't cite works of fiction.

**HILARY.** Rose of Sharon's baby is born dead, so she gives her breast to an old man dying of hunger, a stranger, just some old man they find lying in a barn where the family are sheltering from the rain-storm. That's how the story ends, with Rosasharn holding a starving man to her breast. Altruism means being good for its own sake.

**SPIKE.** Didn't it make her feel better, though, about her life, her baby, didn't it give her the courage to go on, and have more babies?

**HILARY.** (*Beat.*) Fuck you, Spike.

**SPIKE.** (*Laughs.*) Darwin doesn't do sentimental. If you want something cuddly, try business studies. Here, there's nothing but evolutionary biology. Breastfeeding a starving man? Evo-bio. The Good Samaritan? Evo-bio. Culture, empathy, faith, hope, and charity, all the flip sides of egoism, come back to biology, because there just ain't anywhere else to come from except three pounds of grey matter wired up in your head like a map of the London Underground with eighty-six billion stations connected thirty trillion ways, hard-wired for me first. How many times do you think I'd drive you home for a mug of what isn't even proper coffee before I give up on the sweetener and let you go home on the bus?

**HILARY.** Four?

**SPIKE.** Yeah. At least.

**HILARY.** At least?

**SPIKE.** Yes. At least four.

*He tries another mouthful of coffee, grimaces, and picks up his outdoor coat.*

**HILARY.** Oh.

*She considers him. He offers a handshake and leaves. She starts getting undressed.*

## Scene 2

*Night. The only light is from a “scented”-type candle by the bed. Hilary is kneeling silently at the side of her bed, saying her prayers. She is wearing only a T-shirt, which is long enough for modesty.*

*Spike pushes open the door, letting in more light. He enters with a mug in each hand. He is barefoot, wearing a girly wrap-over negligee too small for him, showing bare calves. Seeing Hilary at her prayers, he is dumbfounded. He hesitates, not sure what to do. He decides to leave and make a later entrance, but Hilary suddenly relaxes, stands up, and gets into the crumpled bed, unbothered by seeing Spike.*

*The clothes they have taken off are untidily “anywhere.”*

**SPIKE.** Sorry.

**HILARY.** What [about]?

**SPIKE.** Were you *praying*?

**HILARY.** Yes.

**SPIKE.** Sorry if I came in at the wrong moment.

**HILARY.** I was saying my prayers, I wasn't putting in my dentures. (*Accepting the mug.*) Thanks.

**SPIKE.** I'm glad you did that after, not before.

**HILARY.** I feel the same way about what you're wearing.

*They each take a sip and wordlessly exchange mugs. Spike gets into bed beside her.*

**SPIKE.** You're lovely. It was lovely. Afterwards, you said—muttered really, did you know?—you said, “Thank you.” “Thank you.” I thought that was so... You don't have to say thank you.

**HILARY.** Actually, I wasn't talking to you.

**SPIKE.** Oh. Sorry.

So...so you, as it were, pray to God, then?

**HILARY.** Yes.

**SPIKE.** Do you pray every night?

**HILARY.** Yes. Usually before I get into bed.

**SPIKE.** Oh.

Does it work?

**HILARY.** Yes.

**SPIKE.** (*Interested.*) You find prayer works?

**HILARY.** Yes.

**SPIKE.** What, every time?

**HILARY.** Yes. Every time I say my prayers I feel better.

**SPIKE.** Oh, *works*, right. Psychological.

**HILARY.** Wow, Spike, I never thought of that, missed it completely, shit, that explains it. (*Wagging her hand in front of his face.*) Hello, hello. When I clap my hands you will wake up and find you're in bed with a student, wearing a negligee.

**SPIKE.** Lucky me. Better than when? What do you pray for?

**HILARY.** Forgiveness.

**SPIKE.** Forgiveness? I thought it was me who should be doing that. What you need to pray for is getting into the Krohl Institute. How does God feel about your model of Nature–Nurture Convergence in Egoistic and Altruistic Parent–Offspring Behaviour? Does he think you're on the right lines?

**HILARY.** I tell you what, Spike, if I were up for a back-and-forth about God, I'd rather not have it with an asshole. Where we were—

*She turns on her bedside light.*

—was, you were supposed to be checking the maths for me.

**SPIKE.** To tell you the truth, I feel a bit thrown now. I wasn't expecting to deal with a rival hypothesis.

**HILARY.** That's not what I said. *I'm* not thrown by sharing an ancestor with a grunting chimpanzee—evolution by natural selection, bring it on—it's only that millions of years later the chimp is still grunting and you're using words like hypothesis, so I'm wondering if there's something they left out. It's nothing for you to be bothered by.

**SPIKE.** (*Roused.*) If not me, who? I'm Darwin. I'm Mendel. I'm

Crick and Watson. I stand for all the science that's taught. We've scraped you clean of gibberish, we've taken you to bits and put you back together from the atoms upwards so you understand how you work and how everything around you works. We've accounted for every particle in the universe except for dark matter, and we're working on that. And here you are on your knees to what? To who? You might as well pray to Peter Rabbit.

**HILARY.** Explain consciousness.

**SPIKE.** Apart from consciousness. (*Silly voice.*) "Explain consciousness." There's no baby, there's only bathwater. (*Getting angrier.*) I've got nothing personal against God, except the usual, but I expected better from you. When did your mind turn into a party balloon? You made it nearly to the end of the journey, give it a few more years and we'll have gravity wrapped in with the other forces, and there'll be nothing for science to do except collect new beetles—well, I don't believe that entirely, in fact I'm so disgusted I've started talking bollocks.

**HILARY.** Explain consciousness.

*Impatiently, Spike takes her finger and holds it to the flame of the candle for a moment before she snatches it away with a little gasp.*

**SPIKE.** Flame—finger—brain; brain—finger—ouch. Consciousness.

**HILARY.** Brilliant. Now do sorrow.

*Spike groans.*

You think you've done pain. If you wired me up you could track the signal, zip-zip. If you put my brain in a scanner you could locate the activity. *Ping!* Pain! Now do sorrow. How do I feel sorrow?

**SPIKE.** Do you feel sorrow?

**HILARY.** Yes.

**SPIKE.** I'm making you sad?

**HILARY.** Not everything is about you, Spike.

**SPIKE.** Right.

*He gets out of bed and goes to sit at the table, where there is a laptop. He opens the laptop and taps keys.*

**HILARY.** Scaredy-cat! You can explain the *mechanics*. You should

work in a garage. (*Garage voice.*) “It’s yer big end’s gone, mate. Does it hurt when I do this?” and answer came there none, because it’s a bloody *car!*

*Spike ignores her, studies the computer screen thoughtfully, scrolling.*

I don’t go looking for an argument with science. Tell me my DNA is seventy per cent banana, and I think, well, fine, there are more things in heaven and earth than are dreamt of in your philosophy, Hilary. But with *consciousness*—with the mind–body problem—the God idea shoves itself to the front like a doctor at the scene of an accident, because when you come right down to it, the body is made of *things*, and things don’t have thoughts. Bananas aren’t thinking, “Hey, seven eights is fifty-six,” or “I’m not the king of Spain,” and when you take a banana to bits you can see why.

**SPIKE.** Don’t publish till you hear back from the Krohl.

**HILARY.** (*Persisting.*) Same with brains. The mind is extra.

**SPIKE.** The human brain, for its size, is the most complex—

*Hilary does her boredom collapse.*

**HILARY.** —object on the planet, in the galaxy, the universe—forget it, Spike, I’ve got the T-shirt. If organising enough components the right way is all it takes, maybe a thermostat is a kiddie-step towards being conscious—

**SPIKE.** [Maybe.]

**HILARY.** —which is what I’m reading. Did you say maybe?

**SPIKE.** I don’t see anything obviously wrong with that.

**HILARY.** You believe a thermostat has consciousness potential, but you find God a bit of a stretch?

**SPIKE.** (*Tapping.*) Uh-huh, but you should stick with God—your way with an equation would need his collaboration.

*Hilary laughs, giving up.*

**HILARY.** That’s what you’re here for. God can only do so much. I put in for six research slots in industry, plus Imperial for the hell of it and the Krohl for sheer cheek, and only the Krohl has offered me an interview.

**SPIKE.** The Krohl didn’t know about your maths.

**HILARY.** I'm not even doing what I'd call brain science.

**SPIKE.** You must be. Seeing as it's the Krohl Institute for Brain Science. Which means neurobio, neuropsych, neuro-everything, plus its own gym, organic vegetables, and free Pilates, I'm told, all paid for by a squillionaire with a master's in biophysics who decided to try hedge-funding... which raises the interesting question: Is Krohl an altruist or an egoist? (*Garage voice.*) "What you've got here is a wonky co-variance, miss."

*Hilary hurriedly gets out of bed and goes to look over his shoulder.*

**HILARY.** (*Worried.*) What's wrong with it?

**SPIKE.** The model works okay for behaviour one-on-one in an idealised sort of way, think Raphael's *Madonna and Child*, which I personally call *Woman Maximising Gene Survival*, but it won't generalise, because you haven't allowed for future offspring, and if they have different fathers, you'll need to differentiate—

**HILARY.** Can you fix it by Wednesday?

**SPIKE.** (*Garage voice.*) "Do my best, miss, but I'll have to strip her right down to get at it." (*Normal voice.*) And that's just the customer.

*He reaches behind him. She swipes his hand away.*

**HILARY.** Can you?

**SPIKE.** Also, it's not good science to call mother love a virtue, or even mother love.

**HILARY.** You don't think mother love is a virtue?

**SPIKE.** You don't *call* it a virtue, because at root its virtue consists in its utility.

**HILARY.** Utility. *Mother love?*

**SPIKE.** Genetically selected behaviour to maximise—

**HILARY.** Spike, do you know anyone who believes that, really and truly?

**SPIKE.** I don't know anyone who *doesn't* believe it. Parental behaviour. Hard-wired when we were roaming the savannah in small groups of hunter-gatherers. Mother and baby are in a cost-benefit competition. Have you ever seen a newborn infant screaming to be

fed?—the *anger*—the *noise*—the *face*...! The kid is laying it on, and it probably started in the womb.

**HILARY.** (*Flaring up.*) Oh, probably! The kid doesn't know up from down but it knows to maximise the survival of its genes! And Mummy's genes are working out the odds of their survival in the baby, against her chances of having more kids. It's a cost-benefit competition, and the genes, unlike some of us, can do the maths, is that right?

**SPIKE.** Well—

**HILARY.** Just shut up!

*Pause.*

**SPIKE.** It's not personal.

*Pause.*

Obviously, genes have no *intentions*, it's *as if*; it's a metaphor.

**HILARY.** A metaphor for what?

**SPIKE.** A reflex. A survival reflex.

**HILARY.** Genes don't have a survival *problem*, Spike, they're *genes*. They're little tiny *things*, like, I don't know, molecules! *Metaphorically*, genes want to hop the next train before the train they're on conks out, "*as if*" they know life has a value that extinction doesn't have, but the science has no underneath, it's tortoises all the way down. I agree with you, Spike. Virtue is not science. You can't get an *ought* out of an *is*. Morality is not science. So there must be something else, which isn't science. Which science isn't. What is it?

**SPIKE.** Wait.

*He brings the bucket-sized bin from under the table, places it in Hilary's hands and stands back.*

Moral rules are the stable strategy evolved by millions of years of jockeying between humans in real-life situations like the game of prisoner's dilemma.

*The bin is Spike's "joke." Hilary humours him. She pretends to retch into the bin.*

(*Solicitously.*) That's right. Better out than in.



*Hilary straightens up with the bin over her head. She stands there like that.*

You don't like the idea that you're nothing else but an animal. It's a conceit. You're an animal. Get over it.

*She doesn't answer. Spike watches her. She doesn't do anything. After a while he realises she is crying inside the bin.*

Hilly...

*She starts to bawl inside the bin. Concerned, he goes round the table to her.*

What?!

*Aware that he is close, she moves away from him a little, sobbing loudly. Spike waits for her to subside. Finally, she takes the bin off her head and puts it under the table.*

What happened?

**HILARY.** Nothing happened. I'm okay, Spike.

**SPIKE.** Of course you are. It'll be fine.

**HILARY.** Oh, that. Forget that.

*She closes the laptop.*

(Laughs.) I need a miracle.

### Scene 3

*The Krohl Institute for Brain Science is a purpose-built complex of labs and offices on which no expense has been spared, set in its own grounds. It employs perhaps 150 people. Something of the expense and scale is suggested by what we see, which is a mere fragment of the whole, a walk-through/waiting area. Everyone we get to see has a security pass (with photo) worn around the neck, specific to the bearer. This is true of all scenes set in the Institute.*

*Hilary, dressed for the interview, with a laptop bag and an old satchel, sits waiting in a designer chair. Specialist periodicals and printouts encased in Krohl-branded file-holders are available. Hilary turns over pages, looking up briefly when a*

*woman, of Hilary's age, crosses the space. The woman (Julia) hesitates slightly as she takes a second look at Hilary, and continues on her way. She is followed in, more tentatively, by a young man, Amal, wearing a cheap suit and carrying a haversack. He is Indian. He sits down near Hilary.*

**AMAL.** Hi.

**HILARY.** Hi.

*Amal chooses a printout to look at. Hilary sizes him up. He catches her eye.*

**AMAL.** Are you here for an interview?

**HILARY.** (Nods.) Dr. Reinhart.

**AMAL.** Same here. What time...?

**HILARY.** Eleven-fifteen.

**AMAL.** It's nearly twelve.

**HILARY.** I know.

**AMAL.** Maybe he forgot about you.

**HILARY.** Is your doctorate in psychology?

**AMAL.** If necessary. My degree is in maths, and I'm doing a master's in biophysics, which is actually a neurobiology research project I managed to latch on to, to make myself beautiful for the Krohl! We already published a paper which I've got my name on. I'm Amal, by the way.

**HILARY.** Hilary. Wow.

**AMAL.** How about you?

**HILARY.** Yes. Psychology. I haven't graduated yet. So you liked the Krohl Institute?

**AMAL.** What's not? It's small, it's not industry, it's not academia, it's state of the art for imaging and all the toys, it's elitist but in a good way, it's got a gym, and after five years of Cambridge it's not in Cambridge.

**HILARY.** Oh.

**AMAL.** Where are you?