Family Provision and Artificial Intelligence - Utopia or Dystopia?[1]

Introduction

Some of you may have heard of J G Ballard, the late English novelist and essayist who wrote the semi-autobiographical novel *Empire of the Sun*, which was made into a film by Stephen Spielberg. Ballard also wrote science fiction. In 1971 he wrote that "everything is becoming science fiction; from the margins of an almost invisible literature has sprung the intact reality of the 20th century".[2] That tendency of science fiction to become technological fact has only increased in the 21st century.

I have always enjoyed science fiction, although I would not go as far as the famous American science fiction writer Ray Bradbury, who is reputed to have said "science fiction is the most important literature in the history of the world". Nevertheless, I do think the best science fiction is good literature from which, like other good literature, we can learn something about ourselves and the world we live in.

Two of my favourite authors are Isaac Asimov and D F Jones (the D F stood for Dennis Feltham, which is probably why his publisher thought D F would be catchier). Most people have heard of Asimov; mention of D F Jones generally draws a blank look.

Isaac Asimov gave us the Three Laws of Robotics. However, in his book *Foundation and Earth* he added a "zeroth" law to come before the other three: "A robot may not injure humanity, or by inaction, allow humanity to come to harm". The *Foundation* series had as its premise the work of a fictional mathematician, Hari Seldon, who developed something called "psychohistory", a mathematical and statistical means of predicting the future of large populations. Today we would call Seldon's work algorithms.

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[2] "Fictions of Every Kind", in *Books and Bookmen* (February 1971)

My other favourite, D F Jones, played on popular fears – especially in the Cold War era – of computers as the modern version of Frankenstein's monster. In the first book of his *Colossus* trilogy, the United States puts its nuclear arsenal into the control of a supercomputer called Colossus. The American computer quickly detects the presence of Guardian, a rival supercomputer built, of course, by the Soviet Union. The two computers begin to communicate with each other and, being intellectually superior to their human creators, eventually hold humanity hostage with the threat of nuclear annihilation. Today, the serious questions raised by the use of autonomous, computer controlled weaponry are very real. If you are interested, I commend to you a paper by Justice Melissa Perry of the Federal Court of Australia entitled "Automated Weaponry and Artificial Intelligence: Implications for the Rule of Law".[3]

How does this preamble get us to family provision? This evening I hope you will allow me to engage in some not entirely whimsical speculation about how artificial intelligence may one day have a role to play in resolving family provision disputes.

Family provision disputes – the problem at a glance

As I am sure everyone here is aware, family provision has been an area which the Supreme Court has presided over well before the introduction of the Family Provision List. The Family Provision List came into existence in 2013 and in its first year alone had 790 filings.[4] Despite the creation of the List, there was not a huge increase in filings when compared to what had been filed with the Court in previous years.[5] However, when a broader view is taken of the history of the number of family provision matters filed with the Court over a longer period of time, a different conclusion is reached. The most recent publicly available data in terms of filing numbers is from 2018, and records that the Court had 981 family provision filings in

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[3] [2017] FedJSchol 1 available on Austlii.

[4] Supreme Court Annual Review 2013.

[5] For example, in 2012 the number of filings was almost identical.

that year alone.[6] This is more than a 50% increase from just ten years ago, and there is nothing to suggest that trend will slow down.[7]

In an effort to resolve family provision matters more quickly, all family provision matters are required to go to mediation before they go to final hearing. Additionally, since 2014 judicial settlement conferences have been used where the estate of the deceased is valued to be less than $500,000, or where the parties have jointly requested one. These conferences are conducted by the list judge, Justice Hallen, and are timed to occur at an early stage of case management with a view to achieving settlement as soon as possible. In 2018, judicial settlement conferences were conducted in 209 matters, and of those, 158 ultimately settled.[8] These judicial settlement conferences have reduced the number of matters being referred to mediation. However the number of matters still being heard by the Court at final hearing has continued to rise.

In preparation for this evening, I asked my tipstaff to select 50 family provision matters at random which had gone all the way through to a judgment. I asked him to look at the costs of those proceedings, the size of the estate, the number of hearing days the matter occupied, and to consider whether there was any correlation between any of those factors.[9] It is worth noting that in examining the costs incurred in each of the proceedings, costs were recorded differently on different files, with some costs being recorded on the ordinary basis, while others (almost always the executors) were recorded on the indemnity basis. Notwithstanding that difference, of the 50 matters reviewed, the average amount of costs incurred by all parties in litigation as a proportion of the value of the estate was 22.2% and the median figure was 20.2%.

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[6] Supreme Court Annual Review 2018.

[7] As advised by court staff, in 2007 there were 624 filings for family provision matters.

[8] As informed by court staff.

[9] Attached to the published version of this speech is a table of the raw data extracted by this review of the files.

While I do not suggest 50 cases is enough for a rigorous statistical analysis, what emerged reflected what I have observed for years in terms of the amount of costs incurred to resolve a family provision matter. Of the 50 files reviewed, 18 matters had costs which were above 25% of the value of the estate, with one case having legal costs being more than 50% of the value of the estate. Of these 18 matters, only 5 concerned estates worth more than $800,000. This would suggest that the costs implications of bringing a family provision matter all the way through to final hearing are most heavily felt by smaller estates. Interestingly, the files which had incurred the highest legal fees tended to involve larger estates, however when reflected as a proportion compared to the value of the estate of the deceased, the proportion was lower than for smaller value estates. For example, an estate worth approximately $3 million had costs close to $300,000 which is 10% of the estate, while an estate worth approximately $800,000 incurred costs close to $240,000, which is approximately 30% of the value of the estate.

It is also worth noting that there was not much of a correlation between the length of a hearing and the total costs incurred. Again of those 18 cases where costs exceeded 25% of the value of the estate, 15 cases went for 3 days or less. At the other end of the spectrum, there were 11 cases of the 50 where costs were 10% or less of the value of the estate, and of those 11 cases, 9 went for 3 days or less. This would suggest that what might be termed the sunk costs of family provision proceedings are fairly uniform, regardless of the length of the hearing. Putting this another way, the majority of costs are incurred in the preparation of cases, rather than in the hearing itself. Any proposal intended to reduce costs must, therefore, focus on enabling settlement earlier rather than later in the process of preparation for hearing.

What I have spoken about thus far is the cost of family provision proceedings in terms of money and judicial resources. I shall return at the end of these remarks to what the front page of this month's *Law Society Journal* calls the "messy and emotional reality behind estates disputes".[10]

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[10] Amy Dale, "Show me the money: The messy and emotional reality behind estates disputes – and why they're increasingly common", *LSJ- Law Society of NSW Journal*, Issue 61, November 2019, p 30.

Artificial Intelligence – where is it now?

When people think about AI, they often think of self-driving cars, robots performing pinpoint surgery or movies such as "I Robot" or "Terminator". Self-driving cars are well on the way and computer assisted surgery is already a feature of many modern hospitals. On the other hand, the latest attempt to reboot the "Terminator" franchise by reuniting a post-gubernatorial Arnold Schwarzenegger and Linda Hamilton is being described as a $120 million flop. I want to discuss briefly where AI is at today, and how it is already being used in a legal setting and even in the courtroom.

There is no universally accepted definition of AI. There is even debate as to whether AI is an umbrella term to encompass different types of machine learning, or whether it is something specific in and of itself. Adrian Cartland, the principal of Cartland Law, defined AI as "an algorithm that produces something that is greater than the sum of its parts"[11], while another writer has defined AI in the legal industry to be "the theory and development of processes performed by software instead of a legal practitioner, whose outcome is the same as if a legal practitioner had done the work."[12] In a forthcoming article in *The Australian Law Journal*, the ANU's Dr Will Bateman defines AI to be applying a set of logical operators to data inputs in order to produce outputs.[13] For my purposes this evening, it is this last definition which I will be adopting.

AI is based on a mathematical technique called neural networks, which is effectively an algorithm that can learn tasks on its own by analysing existing data.[14] AI employs what some have termed "fuzzy logic" to enable a computer to recognise analogue states which may exist, and therefore overcomes the typical binary code of

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[11] Dr Marilyn Bromberg, "And then a (legal) hero comes along – insights into the impact that artificial intelligence has upon the law" (June/July 2019) *Internet Law Bulletin*.

[12] Sergio Becerra "The rise of Artificial intelligence in the legal field: where we are and where we are going" (2018) 11(1) *Journal of Business Entrepreneurship and Law* 27, 38.

[13] Dr Will Bateman, "Algorithmic Decision-Making and Legality: Public Law Dimensions", forthcoming in 2020 in *The Australian Law Journal*. See also Monika Zalnieriute, Lyria Bennett Moses and George Williams, "The Rule of Law and Automation of Government Decision-Making" (2019) 82(3) MLR 425.

[14] Meena Hanna, "RoboJudge: Common Law Theory and the Artificially Intelligent Judiciary" (2019) 29 *Journal of Judicial Administration* 22, 25.

computers. This process of "fuzzy logic" simulates the learning and recognition capabilities of humans, and is capable of manipulating databases to arrive at conclusions which humans are currently faster at producing. This means a computer learns through experience, rather than through hand-crafted computer functions. In a legal context, this involves the AI reaching a conclusion by applying the law to a set of facts to reach a resolution.

AI is already being widely used in everyday activities. Some services provided by banks, insurance companies and accountants all frequently rely upon AI. Furthermore, AI has not been limited to the private sector, with some government agencies relying heavily upon AI. 2001 was the first year the Commonwealth parliament enacted a provision which conferred power on a computer program to make an administrative decision, and since then it has become more common.[15] For example, welfare payments, taxation notices and immigration notifications all rely upon AI to streamline processes and increase efficiency in decision-making.[16]

However, most interestingly for our discussion tonight, AI has been introduced and is being used in the process of litigation. For example, since 2001 courts in the American state of Idaho have been using a program called Protection Order Advisor, which informs possible applicants about protection orders such as Apprehended Violence Orders, assesses their factual inputs to determine whether there is a prima facie case, and uses the inputs to generate any necessary court documents to apply for the order.[17] Similarly, in America a Public Safety Assessment algorithm has been introduced to supplement judicial decisions relating to bail, by using data to determine the risk of granting bail to the accused. Needless to say, there has also been a deal of controversy about such techniques, including the extent to which the algorithms replicate the bias of the primary data against, for example, people of colour.[18]

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[15] Section 6A *Social Security (Administration) Act 1999* (Cth).

[16] Bateman, op cit.

[17] Hanna, op cit, 31.

[18] See *Loomis v Wisconsin* 881 NW2d 749 (Wis 2016) cert denied 137 S Ct 2290 (2017) concerning COMPAS – "Correctional Offender Management Profiling for Alternative Sanctions". See also J Ward, "When and how

Not only has AI been used in a variety of legal contexts, two recent studies in the United States have shown that AI can simulate judicial reasoning by predicting judicial outcomes. The first study involved predicting decisions made by the Supreme Court of the United States. The study involved the AI called "random forest" analysing cases from the Supreme Court dating back to 1791 in order to build a general algorithm capable of predicting any judge's vote at any time in history.[19] The algorithm correctly predicted 70.2% of the Court's 28,000 decisions, and 71.9% of the justices' 240,000 opinions. This is a higher success rate in predicting decisions than any human legal expert, who have about a 66% success rate at best. The second study involved an AI demonstrating legal reasoning through predicting outcomes of the European Court of Human Rights. This AI made predictions based on textual analysis. Judgments of that court have a unique structure which makes them particularly suitable for text-based analysis and prediction. This second study saw the AI deliver the same verdict as the court on 79% of matters.

This research has shown how AI can be used to identify cases and extract patterns which correlate with certain outcomes. This information can subsequently be used to develop indicators for successful claims which may eventually prioritise the decision-making process, suggesting that rather than replacing judges, AI could be used to assist judges. These examples show that AI can simulate legal reasoning by predicting binary outcomes, rather than articulating nuanced legal reasons.

Not only has AI been introduced overseas, it has also slowly been introduced in Australia. Recently in the Northern Territory, one lawyer has addressed the chronic shortage of lawyers in the Territory by opening a law firm without any lawyers, and relying solely upon AI and administrative assistants.[20] Clients enter information into the AI and the AI provides advice or produces documents. In some cases, AI is

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should we invite artificial intelligence tools to assist with the administration of law? A note from America", (2019) 93 ALJ 176.

[19] Daniel Kats, Michael Bommarito and Josh Blackman, "A General Approach for Predicting the Behaviour of the Supreme Court of the United States" (2017) 12(4) *PLOS ONE* 32.

[20] Bromberg, op cit.

used for contractual analysis, assisting in large due diligence exercises and going through voluminous discovery files.

An AI has recently been used in Canada to settle a case involving unpaid fees claimed by a trainer from a client following a personal counselling course which had previously been through an unsuccessful mediation with a human.[21] This practice of the Court using AI to assist resolving disputes is also developing in both the United Kingdom and the Netherlands.[22]

Similarly, the Federal Court of Australia is in the process of developing a machine learning proof-of-concept which can be applied in the family law context.[23] While the system is not officially up and running yet, the concept is designed to assist with property settlements and takes into consideration a series of factors, including age, income, capacity to earn income, the length of relationship, and whether or not any children are involved. The system looks at the way matters have been decided by judges and applies that reasoning to the factors which it is given to consider. The final call on any asset division would still be one for the parties to work out, however this program gives the parties a possible solution which could be palatable to everyone involved. This program is still being developed to try to understand the human element of decision making and the reasoning behind certain decisions that people make, however progress seems to be being made. It has also proposed to have this system as transparent as possible to allow decisions to be explained and trust to be built up as quickly as possible. This is essential: a "black box" approach to the use of AI is inimical to the requirement for open justice.

While AI is becoming more prominent in the legal world and has shown that it is even capable of predicting decisions made by judges, it is not appropriate to have AI involved in all aspects of judicial function. For example, despite the Court considering up to two hundred mitigating and aggravating factors when sentencing

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[21] Nick Hilborne "Robot Mediator Settles First Ever Court Case" *Legal Futures* (posted 19 February 2019)

[22] Bromberg, op cit.

[23] Ry Crozier "Fed Court turns to AI to predict asset split after relationship breakdown" *IT News* (posted 23 May 2019)

an individual in a criminal matter, there are strong arguments that AI would be an inappropriate tool in assisting the Court in sentencing matters.[24]

The High Court has clearly rejected any notion that "mathematization" of the sentencing process is appropriate, describing judges' sentencing practices as involving an "instinctive synthesis" of all the factors and considerations that are relevant to the matter being heard.[25] The High Court has held that "the judge identifies all the factors that are relevant to the sentence, discusses their significance and then makes a value judgment as to what is the appropriate sentence given all the factors of the case."[26]

It would be wrong for an AI to assign numerical values to the considerations raised in sentencing, and it would be almost impossible for programmers to interpret past decisions and then adequately program an AI to make those decisions. To have a mathematical translation of relevant factors and considerations for sentencing would be too clinical and ineffective to deal with the nuances of human behaviour in the criminal jurisdiction. AI clearly has its limits as a tool to assist the Court.

Artificial intelligence and family provision – a speculation

There is no reliable indicator that the large number of annual family provision filings will be reversed any time soon. In fact, given Australia's aging population, it seems most likely that the rising trend will continue. Claims by adult children are likely to increase not only due to longevity itself, but also due to second marriages later in life upsetting the expectations of the children of earlier marriages, and the recently recognised phenomenon of retirees caring for their own, still living parents.[27] The

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[24] Adrian Staples, "Some Reservations About the Use of Artificial Intelligence in Sentencing Decisions" (2019) ALJ 1.

[25] *Markarian v The Queen* (2005) 288 CLR 357.

[26] *Muldrock v The Queen* (2011) 244 CLR 120, 131 [26] (French CJ, Fummow, Hayne, Heydon, Crennan, Kiefel, Bell JJ).

[27] For two recent articles on this last phenomenon, see
https://www.nytimes.com/2019/06/27/business/retirement-parents-aging-living-to-100.html and

https://www.theguardian.com/science/2019/nov/10/were-part-of-a-growing-phenomenon-the-retirees-still-caring-for-their-parents

increased number of filings places more pressure on the Court and can ultimately delay access to justice in other matters. As is currently being proposed in the Federal Court and being implemented overseas, one possible solution to this problem could be using AI to help settle family provision matters at an earlier stage in the litigation process.

Unlike sentencing, family provision is a suitable forum for AI and could benefit litigants much in the way that judicial settlement conferences have. This is because the family provision jurisdiction involves both a relatively mechanical assessment based on a number of objective facts (such as personal and financial circumstances, the value of the estate etc.) and a more nuanced (one might say "human") assessment of the quality of family relationships and other such ineffable, but important considerations. It is in assessing those relatively objective facts where I suggest AI could assist parties in reaching a possible resolution to their matter in a much faster way than going through the Court, thereby reducing costs and avoiding the emotional hardship which inevitably comes with a hearing, and then a further wait of weeks or months for a judgment to be published, all with the possibility of further delay and expense if there is an appeal.

There are very strong public policy reasons for this type of litigation to be disposed of as inexpensively and efficiently as possible, consistently with doing justice between the parties. Those same considerations urge the encouragement of early settlement. The judicious use of AI could facilitate both objectives.

While AI may provide a possible solution in resolving family provision matters in a timelier manner, I do not by any means propose that any AI system would replace a judge in making the final determination of a case. As I have already noted, family provision matters involve both objective and subjective considerations. As the *American University Law Review* recently noted, "various researchers have shown that algorithms can operate in a discriminatory and inconsistent fashion. These findings raise serious due process and equality challenges. Algorithms can rely on skewed databases, reflect the programmer's own biases in their design, and,

perhaps most disturbingly, operate in unpredictable ways, in particular when we are dealing with learning algorithms."[28]

Consequently, I do not suggest that an AI system would replace a judge, however it could be used to facilitate a settlement based on the objective facts to be considered. What I have in mind is more along the lines of the term which Chief Justice Bathurst recently coined in a speech, "AI-DR", where AI could complement the role of a judge, thus allowing for greater efficiency in the handling of a case.[29]

I speculate there are two goals for the potential AI tool, of which the second is aspirational.

The first goal is to bring about the orderly arrangement of the factual and financial information about the estate, the plaintiff and other interested parties. This would enable all of the factual, objective evidence to be compared on an "apples with apples" basis and to be interrogated as required. For example, if a plaintiff says she will need $X per annum to live on, her likely future earning capacity and expenditure can be calculated or the amount required from the estate to create a particular income stream by way of annuity can be identified by reference to actuarial and other databases. This part of the analysis is not dissimilar to a damages investigation in a tort claim for personal injuries.

The earlier this information can be assimilated, the better the prospects for a realistic assessment by the parties of likely outcomes and an early settlement.

If the matter does not settle, then the process will enable the material to be presented to the Court in an agreed format, saving time at the evidentiary stage and enabling the Court to focus on the more "human" considerations.

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[28] Orna Rabinovich-Einy and Ethan Katsh, "The New New Courts" (2017) *American University Review* 165, 210-211.

[29] The Hon T F Bathurst AC, "ADR, ORD and AI-DR, or do we even need Courts anymore?" (Speech given 20 September 2018) <http://www.supremecourt.justice.nsw.gov.au/Documents/Publications/Speeches/2018%20Speeches/Bathurst_20180920.pdf>

The second goal is to develop a predictive tool which would assist the parties in settlement discussions. There is no doubt that the predictive aspect of AI is improving in accuracy.

The Court has heard thousands of family provision claims, so there is no shortage of data to identify the factors that the Court takes into account and the kinds of amounts of provision that were awarded. Alternatively, such data could be generated from the cases that utilise the approach advocated in the fulfilment of the first goal I have identified.

Algorithmic values could be assigned to factors such as estrangement, closeness of relationship, disqualifying behaviour either before or after the testator's death etc. If this could be done, then parties could be offered a prediction to assist in settlement discussions. This could be expressed within a dollar range (e.g. plaintiff predicted to obtain additional provision of $75,000 - $100,000 to be taken from the existing provision for Cousin Mary).

If the predictive aspiration which I have identified were able to be realised, that prediction could be reviewed for reasonableness by a judge (who would not go on to hear the matter) with the assistance of brief written submissions from the parties, so that a relevantly qualified human being's experience would still be brought to bear.

In a practical sense, the predictive element of the AI could act in a similar way to a Calderbank Offer. It could be used to encourage settlement by giving parties an incentive to compromise. For example, if the AI makes a predictive additional provision for a plaintiff, the defendant does not accept that suggestion, the matter continues through to hearing and a judge makes a determination of an amount which is at least what was predicted, there could cost implications for the defendant. Alternatively, if the AI predicts the plaintiff has been given adequate provision in the will, and the plaintiff continues to hearing and a judge dismisses the case, cost implications could follow against the plaintiff.

Some of you may at this point be thinking something along the lines of "it's all well and good for him to propose a system that still includes the judge, but what about us?". Will this be a utopia for the judges and a dystopia for the profession? I am

certainly not suggesting that you will be done out of work. Lawyers will still be needed to gather the material that is loaded into the AI, advise on the reasonableness of the outcome, prepare submissions for the assessing judge, and run those cases with which all of us are familiar where, for whatever reason and despite much advice to the contrary, someone just wants their day in court regardless of the risks. There will also always be those cases whose factual or legal complexity do not lend themselves to the type of AI analysis I am suggesting.

Conclusion

Thank you for sitting so patiently through this piece of judicial speculation. I am not suggesting anything I have offered this evening is a universal panacea. You may be quite right in thinking that I have produced neither good science fiction nor a practical suggestion for improvement. However, may I conclude with three reasons why I respectfully suggest we need to keep thinking about these things.

First, quite apart from the costs, I do not need to explain to the people in this room the emotional havoc that family provision litigation can visit on the parties and their wider families. Emotions run high and the long term consequences for peoples' lives and relationships, even for the "winner", can be devastating. For many, this is their only encounter with the courts, they are far from sophisticated litigants and they are not in the system because of any "fault" on their part. We have both a professional and human obligation to minimise those adverse consequences as far as we can.

Second, innovation does not come easily to the legal system, especially the courts. As an essentially monopolistic system, many of the usual drivers for innovation are not present. While the independence of courts must be jealously guarded, independence is not the same as immunity from thoughtful critique. We, by which I mean judges and the profession, therefore need to make a particular effort to overcome the inertia which comes from just being very busy doing the job as it is, and take a step back and think about how it might be done better.

Third, I always remind young solicitors and barristers that the duty of the profession to assist the Court is not a pious fiction. I am grateful every day for the skill and commitment that the profession applies, including the people in this room, to assist

me to do my job. This evening is an occasion to commend all of you and to celebrate those who have recently achieved the hard earned professional distinction of specialist accreditation. Being an accredited specialist benefits the community by further enhancing both the quality of the service you offer to your clients and the assistance you give to the Court. Speaking for myself, I readily offer both my admiration and my thanks.

However, may I suggest that one of the hallmarks of being a specialist is both the capacity and the obligation to bring a critical mind to bear on your special subject. In other words, you not only do the job as it is today at the standard to be expected of a specialist, but you can and do think about the job itself. This involves the challenging task of discriminating between what is the irreducible or essential that must always be preserved, and what is the merely incidental or instrumental that can be changed to take advantage of new developments, technological or otherwise.

To conclude by returning to the title of this talk, I do not think the use of AI in the law will either bring about a utopia or dystopia. As the author of a recent book on AI puts it, "we humans tend to overestimate AI advances and underestimate the complexity of our own intelligence".[30] For better or worse, it is that intelligence that will ensure that we continue to be the authors of our own future, whether through imaginative works of fiction or material outcomes produced by years of scientific research. However, I hope I have made my case this evening that we lawyers need to explore – be it AI or something else – how we can make that future better for those who come into contact with the legal system that we are all privileged to serve.

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[30] Melanie Mitchell, author of *Artificial Intelligence*, Farrar, Straus & Giroux, 2019 quoted in *The New Yorker*, Nov 4, 2019, p 73.

Value of estate $	Total costs incurred $	Hearing days	Proportion of estate taken up by costs %
248,172	127,202	2	51.3
414,215	196,287	2	47.4
265,000	125,000	1	47.2
553,898	258,616	2	46.7
1,900,000	800,000	1	42.1
580,000	227,719	3	39.3
865,000	332,430	3	38.4
566,867	205,814	2	36.3
1,300,000	419,640	3	32.3
1,612,445	500,000	5	31
484,049.56	150,000	2	31
795,487	240,000	3	30.8
348,481	103,809	1	29.8
653,037	188,400	1	28.8
1,118,750	299,500	2	26.8
783,381.26	208,000	4	26.6
600,000	159,055.63	4	26.6
614,013	156,846	3	25.5
627,307	154,600	1	24.6
3,500,000	855,000	5	24.4
1,000,000	227,558	2	22.8
1,081,894	239,064	4	22.1
2,000,000	427,800	3	21.4
1,413,987	300,000	3	21.2
651,405	131,602	2	20.2
550,624	111,060	1	20.2
1,800,000	360,000	4	20
358,333	70,000	1	19.5
552,513.54	103,000	1	18.6
697,048.42	120,000	1	17.2
689,138	111,077	2	16.1
1,717,776	268,361	2	15.6
806,641	125,728	2	15.6
660,000	103,228	1	15.6
1,191,927	183,120	2	15.4
690,000	92,000	1	13.3
3,191,250	371,763	4	11.6
4,400,000	500,000	2	11.3
1,425,945	161,010	2	11.3
1,536,000	159,736	2	10.4

1,625,951	163,478	2		10.1
2,819,043.87	283,000	4		10.1
1,450,000	147,000	4		10.1
1,201,917	118,500	1		9.9
1,274,432	112,000	1		8.8
2,375,501	200,500	1		8.4
970,000	74,220	1		7.7
5,119,281.10	380,252.78	3		7.4
4,496,570	276,855	2		6.6
5,076,502	220,000	2		4.3