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Surrogacy families 10 years on: relationship with the surrogate, decisions over disclosure and children's understanding of their surrogacy origins

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BACKGROUND: This study aimed to prospectively examine families created using surrogacy over a 10-year period in the UK with respect to intending parents' and children's relationship with the surrogate mother, parents' decisions over disclosure and children's understanding of the nature of their conception.

METHODS: Semi-structured interviews were administered by trained researchers to intending mothers, intending fathers and children on four occasions over a 10-year period. Forty-two families (19 with a genetic surrogate mother) participated when the child was 1-year old and by age 10 years, 33 families remained in the study. Data were collected on the frequency of contact with the surrogate mother, relationship with the surrogate, disclosure of surrogacy to the child and the child's understanding of their surrogacy birth.

RESULTS: Frequency of contact between surrogacy families and their surrogate mother decreased over time, particularly for families whose surrogate was a previously unknown genetic carrier ($P < 0.001$) (i.e. where they had met through a third party and the surrogate mother's egg was used to conceive the child). Most families reported harmonious relationships with their surrogate mother. At age 10 years, 19 (90%) children who had been informed of the nature of their conception had a good understanding of this and 13 of the 14 children who were in contact with their surrogate reported that they liked her.

CONCLUSIONS: Surrogacy families maintained good relationships with the surrogate mother over time. Children felt positive about their surrogate mother and their surrogacy birth. The sample size of this study was small and further, larger investigations are needed before firm conclusions can be drawn.

Key words: genetic surrogacy / gestational surrogacy / disclosure / surrogate

Introduction

Recent years have seen a growth in the use of surrogacy to help couples start a family. Despite this increase, surprisingly few studies have attempted to examine the outcomes for families created in this way. Surrogacy is permitted in the UK but illegal in many other European countries including France, Germany, Italy and Spain. Some countries allow surrogacy but have particular regulations on its use. For example, in Israel each case has to be authorized and supervised by a public committee, only married infertile couples are able to use surrogacy and the surrogate mother must be single or divorced (Benshushan and Schenker, 1997). India and some states in the USA allow commercial surrogacy (Tieu, 2009; Crockin and Jones, 2010) where the surrogate mother is paid by the intending parents (IPs). The USA has commercial surrogacy organizations to facilitate contact between couples and surrogates and legal contracts are drawn up between the parties involved (Braverman *et al.*, 2012). In the UK, commercial surrogacy is prohibited and only reasonable expenses may be paid to the surrogate mother by the commissioning couple (Surrogacy Arrangements Act UK, 1985; Brazier *et al.*, 1998). It is also illegal for individuals to advertise that they are in need of, or are willing to act as, a surrogate mother and surrogacy contracts are not legally binding (Human Fertilization and Embryology Authority HFEA Act, 1990). Thus, UK

legislation on surrogacy can be viewed as being on a middle path internationally (Gamble, 2009).

There are two types of surrogacy: genetic and gestational. Genetic surrogacy, also known as traditional, partial or straight surrogacy, is where the surrogate mother is also the genetic mother of the child. Conception usually occurs by artificial insemination using the intending father's (IF) sperm and can be carried out without attending a clinic. With gestational surrogacy, also known as full or host surrogacy, conception takes place at a clinic using IVF. The transferred embryo may be created using either the intending couple's gametes or the IF's sperm and a donor egg. Surrogate mothers may have either been previously known or unknown to the IPs. Previously known surrogate mothers may be family members or friends, and previously unknown surrogate mothers include those who met the IPs through a third party (either a surrogacy organization or a mutual friend). This manuscript will refer to the parents of children born using surrogacy as IPs.

The relationship between the surrogate mother and the resultant child has been an issue of great interest, particularly in cases where the surrogate mother is also the genetic mother of the child, and where the surrogate mother was previously known to the commissioning couple (Braverman *et al.*, 2012). British surrogacy arrangements enable a strong relationship to develop between the surrogate mother and the IPs during the surrogacy pregnancy (van den Akker, 2007). This is partly because of the absence of commercial surrogacy agencies, which means that IPs and their surrogate are in direct contact (van den Akker, 2007). The relationship is typically maintained between the intending mother (IM) and surrogate mother rather than the IF (Ragoné, 1994; MacCallum *et al*, 2003; Teman, 2010). A positive relationship is viewed by some as important for encouraging the surrogate mother to take her moral obligations to the unborn child seriously (van Zyl and van Niekerk, 2000) and to enable successful surrogacy experiences for those involved (Teman, 2010). Some surrogate mothers maintain contact with the IPs as the child grows up (MacCallum *et al.*, 2003; Golombok *et al.*, 2004, 2006a,b). However, very little is known about the nature of this relationship, what effect it has on the individuals concerned, and whether it continues as the child becomes old enough to understand the circumstances of their conception and birth. Whereas contact with the surrogate mother is thought to give the child a better understanding of their origins, it is also possible that this may undermine the relationship between the IM and the child.

In 2000, Golombok and colleagues initiated a longitudinal study of 42 families created by surrogacy. These families have been followed up to age 10 and have been found to be functioning well with respect to the quality of the parent–child relationships and psychological adjustment of the child (Golombok *et al.*, 2004, 2006a,b, 2011, submitted for publication).

This paper focuses on the parents' and child's relationship with the surrogate mother from age 1 to age 10. It also examines whether parents disclose the surrogacy to their child by age 10 and, for the first time, presents accounts from the children themselves about their understanding of, and feelings about, their surrogacy birth.

Materials and Methods

Families with a child born through surrogacy were recruited through the General Register Office of the United Kingdom Office for National Statistics (ONS), which covers England and Wales. In the UK, details of all families created through a surrogacy arrangement are recorded when the IPs become the legal parents of the child. Legal parentage is granted to the IPs by a court of law and this usually occurs within the child's first year of life. During the initial phase of the study, all parents of children aged ~1 year who obtained legal parenthood between March 2000 and March 2002 were asked to participate in the study. A total of 58 families were contacted. Thirty families agreed to take part, representing 60% of those who responded to the request by ONS, with 20 (40%) declining to take part. A further eight families did not respond. As IPs who had not yet become their child's legal parents would not have been identified by the ONS, all parents on the register of the surrogacy agency Childlessness Overcome Through Surrogacy (COTS) with a child in the same age range were also asked to participate. Of the 34 families contacted, 26 agreed to take part, representing a response rate of 76%. As 14 families responded to invitations from both the ONS and COTS, the final sample size was 42.

The sample consisted of families who had used genetic surrogacy, where the surrogate mother had used her own egg, and gestational surrogacy, where the IPs embryo was implanted in the surrogate mother. Sample sizes at each phase were as follows: Age 1 year, $N = 42$ (26 genetic, 16 gestational); Age 3 years, $N = 34$ (21 genetic, 13 gestational); Age 7 years, $N = 33$ (21 genetic, 12 gestational); Age 10 years, $N = 33$ (21 genetic, 12 gestational). Semi-structured interviews were carried out with IMs during each visit, with IFs when the child was aged 1, 7 and 10 years, and with the children themselves at ages 7 and 10 years. A section of the interview collected information on (i) the frequency of contact between IPs (and child) and the surrogate mother in the past year (measured on a four-point scale ranging from 'not at all', rated 0, to 'more than once a week', rated 4); (ii) the quality of the relationship between IPs and the surrogate mother (coded on a three-point scale as either 'harmonious', 'some dissatisfaction or coldness' or 'major conflict or hostility'. 'Harmonious' was coded when parents described a warm or friendly relationship with co-operation on both sides; 'some dissatisfaction or coldness' was coded when minor disagreements had arisen between parents and the surrogate mother or when little communication or warmth was apparent and a coding of 'major conflict or hostility' was made when arguments or a breakdown in communication was reported); (iii) whether or not IPs had told their child about their surrogacy birth (coded as either 'told', 'plans to tell', 'uncertain' or 'plans not to tell').

At the age 7-year and age 10-year visit, data were also collected from the children about their understanding of surrogacy and their feelings towards the surrogate. The questions asked included 'Your mum/dad told me that a 'woman' helped them to make you. Can you tell me more about that? Do you see (surrogate)? Do you wish you could see her more often? Do you wish you could see her less often? Ratings were made on (i) the child's understanding of their surrogacy birth (coded as either 'no understanding', 'some understanding' or 'clear understanding'). A rating of 'no understanding' was made when the child was unable to demonstrate any understanding of their surrogacy birth. A rating of 'some understanding' was made when the child mentioned terms and phrases that helped explain their conception, e.g. 'tummy not working'. A rating of 'clear understanding' was made if the child showed an accurate awareness of their conception); (ii) whether they were happy with the level of contact with their surrogate mother (coded as either 'wish to see more', 'just right' or 'wish to see less' and (iii) their feelings towards the surrogate mother (coded as 'likes', 'ambivalent' or 'does not like'). At age 10, data were collected on the child's feelings about their birth (coded as either 'positive, 'neutral' or 'negative'). To assess inter-rater reliability, a third of the interviews were coded by a second interviewer. Percentage agreement ranged from 88 to 100% for these variables.

Where possible data were analysed separately for the different types of surrogacy used, i.e. genetic versus gestational, and previously known (i.e. a family member or friend) versus previously unknown (i.e. met through a mutual friend or surrogacy agency) surrogate. Ethical approval for the earlier phases of this study (ages 1 and 3 years) was obtained from the City University London Ethics Committee and ethical approval for the later phases (ages 7 and 10 years) was obtained from the University of Cambridge Psychology Research Ethics Committee. Written consent for the child's participation was obtained from IPs and verbal assent was obtained from the child. IPs were shown the children's questions relating to their conception and were told that they could change the terminology to match that used when discussing surrogacy with their child.

Statistical analysis

Data were analysed using the software package PASW statistics (version 18). Friedman Tests, a non-parametric test for repeated data, were carried out to examine changes over time. Where test results were significant, post hoc analyses were conducted using Wilcoxen Signed-Rank Tests to identify where the difference occurred. A $P < 0.05$ was considered statistically significant.

Results

Not all families remained in the study over time.

Frequency of contact

A Friedman Test was carried out to examine whether the frequency of contact with the surrogate mother changed over time. The mojority of families were in contact with their surrogate (38/42 at age 1, 27/34 at age 3, 19/33 at age 7 and 20/33 at age 10). There was a statistically significant difference in the frequency of contact with the surrogate mother over time for IMs (χ^2 (3) = 30.12, $P < 0.001$), IFs (χ^2 (3) = 28.50, $P < 0.001$) and children (χ^2 (3) = 28.41, $P < 0.001$), with the median values indicating less frequent contact by age 10. To examine if the frequency of contact differed by surrogacy type (genetic-known, genetic-unknown, gestational-known and gestational-unknown), the analyses were repeated for each subgroup (Table I).

For IMs, there was a statistically significant decline in the frequency of contact with genetic-unknown surrogate mothers (χ^2 (3) = 18.39, $P < 0.001$). Post hoc analyses with Wilcoxen Signed-Rank Tests showed that there was a significant decline between age 1 year and age 7 years ($Z = -2.546$, $P = <0.05$) and age 1 year and age 10 years ($Z = -2.428$, $P < 0.05$) showing less frequent contact at the later ages.

For IFs, there was a statistically significant difference in the frequency of contact with genetic-unknown surrogate mothers (χ^2 (3) = 30.80, $P < 0.001$). Post hoc analyses showed a significant decline between age 1 year and age 3 years ($Z = -2.84$, $P < 0.01$), age 1 year and age 7 years ($Z = -3.56$, $P < 0.001$) and age 1 year and age 10 years ($Z = -3.49$, $P = <0.001$), indicating that contact declined most rapidly between IFs and genetic-unknown surrogate mothers after the first year of the child's life.

For children, a statistically significant difference was found in the frequency of contact with genetic-unknown surrogate mothers (χ^2 (3) = 14.10, $P < 0.01$) and genetic-known surrogate mothers (χ^2 (3) = 10.36, $P < 0.05$). Post hoc tests revealed a significant decline in children's contact with genetic-unknown surrogate mothers between age 1 year and age 7 years ($Z = -2.33$, $P < 0.05$), age 1 year and age 10 years ($Z = -2.60$, $P < 0.01$), age 3 years and age 7 years ($Z = -2.00$, $P < 0.05$) and age 3 years and age 10 years ($Z = -2.24$, $P < 0.05$), with contact decreasing over time. Post hoc tests revealed no differences for genetic-known surrogates.

Of the 20 IMs whose children were in contact with the surrogate mother, 25% (comprising 1 gestational-known and 4 genetic-unknown) reported that they would like their child to have more contact with the surrogate mother and 75% (comprising 5 gestational-known, 3 gestational-unknown, 4 genetic-known and 3 genetic-

Table I The frequency of contact with the surrogate mother in the past year, as reported by mothers.

Year	Age 1	Age 3	Age 7	Age 10	χ^2	*P*-value
Mothers						
Gestational-unknown	2	1.5	0.5	0.5	7.73	0.052
Gestational-known	4	4	4	4	0.82	n.s.
Genetic-unknown	1	1	0	0	13.4	<0.001
Genetic-known	4	4	4	4	6.23	n.s.
Fathers						
Gestational-unknown	1.5	1	0.5	0.5	6.27	0.099
Gestational-known	3	4	4	3	5.08	n.s.
Genetic-unknown	1	0	0	0	30.8	<0.001
Genetic-known	3	3	2.5	1.5	7.76	0.051
Children						
Gestational-unknown	2	1.5	0.5	0.5	7.64	0.054
Gestational-known	4	4	4	4	1.43	n.s.
Genetic-unknown	1	0	0	0	14.1	<0.01
Genetic-known	3.5	3.5	2.5	1.5	10.35	<0.05

Values indicate the median frequency of contact on a scale ranging from 0 (not at all) to 4 (more than 1 × week). Data were analysed using the Friedman Test.

Table II Relationships of the mother, father and children with the surrogate mother.

Year	Age 1		Age 3		Age 7		Age 10	
	N	Percentage	*N*	Percentage	*N*	Percentage	*N*	Percentage
Mother's relationship with the surrogate mother								
Harmonious relationship	38	90	30	88	26	79	24	73
Dissatisfaction/coldness	4	10	2	6	0	0	2	6
Major conflict/hostility	0	0	0	0	1	3	1	3
No contact	0	0	1	3	5	15	4	12
Missing	0	0	1	3	1	3	1	3
Total	42	100	34	100	33	100	33	100
Father's relationship with the surrogate mother								
Harmonious relationship	25	89	–	–	18	75	15	68
Dissatisfaction/coldness	3	11	–	–	0	0	1	5
Major conflict/hostility	0	0	–	–	0	0	1	5
No contact	0	0	–	–	6	25	5	23
Total	28	100	–	–	24	100	22	100
Child's relationship with the surrogate mother[a]								
Harmonious relationship	–	–	–	–	21	66	24	75
Dissatisfaction/coldness	–	–	–	–	0	0	0	0
Major conflict/hostility	–	–	–	–	0	0	0	0
No contact	–	–	–	–	11	34	8	25
Total	–	–	–	–	32	100	32	100

[a]Reported by mothers.

unknown) felt that the amount of contact was just right. None of these IMs reported that they would prefer less frequent contact between their child and the surrogate mother.

Relationship quality

For IPs who were in contact with the surrogate mother, the majority reported a harmonious relationship with her. The quality of their relationship with the surrogate mother did not change significantly as the child grew up and did not differ by the type of surrogacy. By age 10 years, only 9% of IMs (one gestational-unknown, one genetic-unknown and one genetic-known) and 9% of IFs (one gestational-known and one genetic-known) reported some dissatisfaction or hostility in their relationship with the surrogate mother. All children who were in contact at ages 7 and 10 years were reported by IMs to have a positive relationship with their surrogate mother (Table II).

Disclosure

At age 1 year, all 42 families reported that they were planning to tell their child about their surrogacy birth. By age 10 years, 91% (30/33) of IPs had done so, and 3 (9%) (two gestational-known and one gestational-unknown) were still planning to tell. All families with a genetic surrogate mother had told their child about surrogacy by age 10 years. Telling status at each assessment is shown in Table III. Of those IPs who had told the child, around half did so before the age of 3 and the other half between the ages of 3 and 7 years. The one set of IPs (with a gestational-unknown surrogate mother) who were uncertain about telling their child when seen at age 3 years did not take part in subsequent phases.

At age 10 years, the 19 families who had used genetic surrogacy were asked whether they had told their child about the use of the surrogate mother's egg; 58% (11) had done so, 32% (6) planned to do so in the future and 10% (2) had decided not to tell. Of the two IMs who had decided not to disclose the use of the surrogate mother's egg, one felt that this information was irrelevant and the other said she would only tell if the child asked.

Children's views on surrogacy

Children's views on surrogacy at ages 7 and 10 years are shown in Table IV. The majority of the children showed at least some knowledge of the nature of their conception, illustrated mainly through an awareness of having been born to someone other than their mother: for example,

> Well my Mum's womb, I think . . . well it was a bit broken, so [. . .] [surrogate mother] carried me instead of my Mum.

Fourteen children at ages 7 and 10 years had seen their surrogate mother in the past year and most were either happy with their level of contact with her or would have liked to see her more. Most children at ages 7 and 10 years reported that they liked their surrogate mother describing her as 'nice' or 'kind'. Examples include:

> [She] was really kind about [. . .] like carrying me in her tummy.

> I think she is kind and she's lovely and funny.

Table III Status of disclosure by parents of the use of a surrogate, according to age of the child.

	Age 1		Age 3		Age 7		Age 10	
	N	Percentage	*N*	Percentage	*N*	Percentage	*N*	Percentage
Told	0	0	15	44	29	88	30	91
Plans to tell	42	100	18	53	4	12	3	9
Uncertain	0	0	1	3	0	0	0	0
Plans not to tell	0	0	0	0	0	0	0	0
Total	42	100	34	100	33	100	33	100

Table IV Children's views of surrogacy.

Year	Age 7		Age 10	
	N	Percentage	*N*	Percentage
Understanding of surrogacy				
No understanding	2	9	2	9
Some understanding	17	77	17	81
Clear understanding	3	14	2	9
Total	22	22	21	100
Happy with the level of contact with the surrogate mother[a]				
Wish to see more	9	64	9	64
Just right	4	29	5	36
Wish to see less	1	7	0	0
Total	14	100	14	100
Feelings towards the surrogate mother[a]				
Likes	14	100	13	93
Ambivalent	0	0	1	7
Does not like	0	0	0	0
Total	14	100	14	100
Feelings about surrogacy birth				
Positive	–	–	5	24
Neutral/indifferent	–	–	14	67
Negative	–	–	0	0
Missing	–	–	2	9
Total	–	–	21	100

[a]Of the 14 who had seen their surrogate mother in the past year.

At age 10 years, most children (14, 67%) felt neutral/indifferent about being born through surrogacy. An example of a neutral/indifferent response was:

> Um, I feel fine. I don't feel bad or cross in anyway. It's just pretty much nature so I can't do anything about it. I wouldn't *like* to do anything about it...

Discussion

This study is the first to examine the views and experiences of surrogacy from the perspective of the children themselves. The findings show that most children who are aware of their surrogacy conception are able to show some understanding of surrogacy by age 7 years. This is in contrast to data from 7-year-old children ($n = 12$) born using gamete donation who showed little understanding of their birth (Blake *et al.*, 2010), suggesting that surrogacy may be easier for children to understand than gamete donation, although these numbers are small and further data are required before firm conclusions can be reached. For those who were in contact with their surrogate mother, the majority said that they liked her and most children were positive about their surrogacy birth at age 10 years. These findings are in line with studies of families who used sperm donation, where parents reported either positive or neutral feelings about donor insemination from children aged up to 8 years (Rumball and Adair, 1999) and adolescents aged 13–18 years who had been told during childhood (Scheib, 2003).

The findings from this study show that the majority of families who kept in contact with their surrogate mother maintained a good relationship with her over the course of the first 10 years of the child's life, thus allaying commonly voiced concerns that this relationship would present difficulties as the child grows up. The frequency of contact with the surrogate mother decreased over time, particularly when the surrogate mother was a genetic-unknown carrier. The most frequent level of contact that remained stable over time was maintained between IMs and previously known surrogate mothers. It is perhaps unsurprising that the most regular contact was maintained with surrogate mothers who were relatives and friends as they may live in close proximity to the family and these relationships were well established before the surrogacy took place. For children, the least amount of contact was maintained with genetic-known and genetic-unknown surrogate mothers. It is possible that this type of contact was being restricted by the adults involved (i.e. either the parents or the surrogate mother) and may result from a deliberate attempt to distance the surrogate mother from a genetically related child. The interviewer did not directly ask the parents or the child about the reasons for less frequent contact and the surrogate mother herself was not interviewed for this study.

For families with previously unknown surrogates, surrogacy arrangements in the UK allow close relationships to develop partly because surrogates and the couple maintain direct contact during pregnancy. This is likely to be a factor in families maintaining contact with their surrogate over time. With the increase in the number of couples seeking surrogacy abroad, it remains to be seen whether such families maintain similar levels of contact, particularly if the surrogate speaks a different language and contact is mediated through a clinic or a surrogacy agency. The children in the present study were all born

using non-commercial surrogacy, as payment to surrogates is prohibited in the UK. These children spoke of the surrogate's altruistic motivations for helping their parents, which raises questions about how children will feel in situations where their surrogate mothers was reimbursed financially.

In contrast to families who use gamete donation to have a child, this study shows that families who use surrogacy are more open with their child about their use of assisted reproduction, with over 90% of families having explained surrogacy to their child. Findings from our study of egg and sperm donation families found that only 47% of egg donation families and 29% of sperm donation families had told their child about their donor conception by age 10 (Blake *et al.*, submitted for publication). Such a high rate of disclosure in surrogacy families compared with gamete donation families most probably results from the fact that couples have to explain the arrival of a baby in the absence of a pregnancy (van den Akker, 2007). It is worth noting that just under half of those who were involved in genetic surrogacy had not disclosed the use of the surrogate mother's egg and thus the child was unaware that the surrogate mother was their genetic mother. Findings from a study of infertile women planning on using surrogacy to start a family also showed that most women would disclose the use of surrogacy but not the use of gamete donation (van den Akker, 2000), suggesting that IPs find it more difficult to disclose the use of third party gametes than the use of third-party gestation. Parents may also feel that they have to explain the use of third-party gestation to their child as there is a chance of their child finding out from someone else, whereas the use of third-party gametes is easier to conceal. Although the majority of the parents in the present study were planning to tell the child about the use of the surrogate mother's egg, it remains to be seen whether parents' intention to tell their child will translate to actual disclosure in the future. By withholding this information, parents are creating a potentially difficult situation whereby they feel they have disclosed the nature of the child's birth but the child does not know the full story.

Participants for this study only included those who responded to the invitation to take part. Therefore, it is not possible to evaluate the experiences of those who did not respond to the invitation or who declined to take part. However, all parents who had had a child through surrogacy within a 2-year time frame were contacted for this study and an additional sample was recruited from COTS, which was the largest surrogacy organization at the time. It is also important to point out that not all families remained in the study over time and thus the experiences of families who did not continue to take part are unknown. However, the participation rate of nearly 80% 10 years after the initial phase is high for a longitudinal study of this type. This paper presents data from the IPs perspective. The surrogate mother was not interviewed and therefore her views and experiences cannot be evaluated. However, an ongoing study is interviewing surrogate mothers 10 years after the birth of a surrogacy child, which aims to investigate the experiences of surrogacy from the perspective of the surrogate and her family (Imrie *et al.*, 2012).The findings of our study are of relevance to practitioners and counsellors working with couples who are considering surrogacy. With the increasing emphasis on the importance of disclosure of children's biological origins, it is important that families are aware that most children feel either indifferent or positive about their birth using surrogacy. However, our data should be confirmed in further studies with larger groups. Furthermore, the fact that most parents who used a genetic surrogate mother had not yet disclosed the use of the surrogate mother's egg is notable, as children who later find out may wonder why this information was deliberately withheld from them. This may have a negative impact on the relationship with their parents. By the age of 10 years most children have a basic understanding of their surrogacy birth referring to terms such as 'broken tummies' and 'bad belly'. At this age, children's narratives of their birth are likely to be influenced by the way in which their parents have explained surrogacy to them. It is perhaps not until they are much older that they will be able to form their own views about the nature of their conception and use of a surrogate. It is essential to explore how these children feel as they enter adolescence when issues relating to identity become of prime concern.

Authors' roles

All authors contributed to the acquisition and interpretation of data for this study. V.J. drafted this manuscript and all authors contributed to its revision and have approved the final version for publication.

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Conflict of interest

None declared.

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