

# Decision Tools to Benefit Children Needing Adoption

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**ABSTRACT:** Millions of children worldwide need permanent families. But traditional paper based methods, disagreements between agencies, and excessive nationalistic restrictions keep many children apart from potential parents able and eager to nurture them.

We use Weighted Ordered Weighted Averages and linear assignment programming for matching orphaned or abandoned children with adoptive families. Traditional paper based, one-child-at-a-time approaches are slow, and speed matters, because of the well documented harm done when children spend too much time waiting. Our focus is on simultaneous matching in which a pool of potential families is viewed as a resource to be used for the benefit for a pool of children globally rather than one at a time. A special case of the Weighted Ordered Weighted Average, designed to be transparent to social workers with little or no mathematical training or inclination, is used to aggregate criteria

## Child and Family Databases

	Child	Age (Months)	Sex	Develop. Handicap	Physical handicap	Months Waiting	Nation- ality	Max parent Age
1	Allen	3	M	0	0	1	A	35
2	Betty	12	F	1	0	4	A	35
3	Dmitri	6	M	0	1	7	B	40
4	Ekaterin	12	F	2	0	1	B	40
5	Ivan	24	M	1	1	5	B	40
<b>6</b>	<b>Natasha</b>	<b>36</b>	<b>F</b>	<b>2</b>	<b>1</b>	<b>9</b>	<b>B</b>	<b>40</b>
7	Pyotr	36	M	2	0	13	B	40

	Family	Desired Age	Desired Sex	Acceptable Develop. Handicap	Acceptable Physical Handicap	Parent Age	Nationality
1	Washington	1	M	0	0	35	A
<b>2</b>	<b>Adams</b>	<b>12</b>	<b>X</b>	<b>0</b>	<b>1</b>	<b>45</b>	<b>A</b>
3	Jefferson	24	X	1	0	30	A
4	Madison	30	M	1	1	34	A
5	Monroe	1	F	2	0	36	A
6	Kruschev	12	X	0	2	39	B
7	Gorbachev	24	F	1	0	42	B

## Calculating a Global Soft Match Score

	Child	Age (Months)	Sex	Develop. Handicap	Physical handicap	Months Waiting	Nationality	Max parent Age	Wait for Foreign Adoption
6	Natasha	36	F	2	1	9	B	40	12
	Family	Desired Age	Desired Sex	Acceptable Develop. Handicap	Acceptable Physical handicap	Parent Age	Nationality		
2	Adams	12	X	0	1	45	A		
		Child Age	Sex	Develop. Handicap	Physical handicap	Parent Age		Minim um	Maximum
		0	1	0	1	0.5		0	1
	Weight	2	2	3	3	4		5	4
	AWOW A weights	0.07	0.07	0.11	0.11	0.14		0.28	0.22
	47%								

## Global Soft Match Scores for All Child-Family Pairings

		Wash- ington	Adams	Jeffer- son	Madi- son	Mon- roe	Krus- chev	Gorba- chov	(Instit- ution)	(Instit- ution)
		1	0	3	4	5	6	7		
Allen	1	97%	55%	69%	65%	63%	80%	49%	50%	50%
Betty	2	56%	53%	83%	60%	83%	75%	67%	50%	50%
Dmitri	3	79%	77%	68%	65%	58%	91%	52%	50%	50%
Ekaterin	4	51%	54%	77%	54%	84%	62%	74%	50%	50%
Ivan	5	54%	67%	80%	94%	53%	74%	56%	50%	50%
Natasha	6	42%	<b>47%</b>	72%	58%	60%	54%	69%	50%	50%
Pyotr	7	54%	47%	77%	79%	58%	54%	53%	50%	50%
(Wait list)		50%	50%	50%	50%	50%	50%	50%	50%	50%
(Wait list)		50%	50%	50%	50%	50%	50%	50%	50%	50%

## Results of Global Simultaneous Matching

	Washington	Adams	Jefferson	Madison	Monroe	Kruschev	Gorbachev	(Institution)	(Institution)
Allen	Allen								
Betty	Washington					Betty Kroschev			
Dmitri		Dmitri Adams							
Ekaterin					Ekaterin Monroe				
Ivan				Ivan Madison					
Natasha							Natasha Gorbachev		
Pyotr			Pyotr Jefferson						
(Waiting list)									(Wait list) (Institution)
(Waiting list)								(Wait list) (Institution)	