## Gender-Balanced Inbreeding in the Pedigrees of Outstanding Runners

by Kathleen Irwin

Most people understand the concept of **inbreeding** when it comes to Thoroughbred pedigrees. Anytime an ancestor appears more than once in the 5-cross pedigree, this is called "inbreeding." The following example shows a horse inbred to Danzig. (See colored blocks)

		GREEN DESERT (USA) (1) 🙀	DANZIG (USA) 🚯 🖼	NORTHERN DANCER (CAN)
		br. 1983 (71.68)	b. 1977 [IC] (82.42)	PAS DE NOM (USA)
	OASIS DREAM (GB)	14-5-4-1 \$322,967	FOREIGN COURIER (USA)	SIR IVOR (USA)
	b. 2000 (44.92)	101 SW	b. 1979	COURTLY DEE (USA)
	9-4-2-1		DANCING BRAVE (USA) (1)	LYPHARD (USA)
	£433,737	HOPE (IRE) () b. 1991	b. 1983 (73)	NAVAJO PRINCESS (USA)
		unraced	BAHAMIAN (IRE) 🕕 🔚	MILL REEF (USA)
2009 (27)			ch. 1985	SORBUS (IRE)
5-2-0		INCHINOR (GB) 🗊 🔚 ch. 1990 (45)	AHONOORA (GB) 🚯 🔚	LORENZACCIO (GB)
129,539		10-5-1-1	ch. 1975 (79.2)	HELEN NICHOLS (GB)
	FRAPPE (IRE)	£247,339 490 f, 418 r, 242 w, 28 SW	INCHMURRIN (IRE)	LOMOND (USA)
	b. 1996	AEI 1.41, CI 1.19	b. 1985	ON SHOW (GB)
	6-1-0-0 £4,881	GLATISANT (GB)	RAINBOW QUEST (USA)	BLUSHING GROOM (FR)
	21/001	b. 1991	b. 1981 [CS] (84.08)	I WILL FOLLOW (USA)
		9-2-1-0 \$47,061 (£31,149) in GB	DANCING ROCKS (GB)	GREEN DANCER (USA)
		1 SW	b. 1979	CRODA ROSSA (ITY)
		DANEHILL (USA) 🛈 🔙	DANZIG (USA) 🚯 🖼	NORTHERN DANCER (CAN)
		b. 1986 (82.41) 9-4-1-2	b. 1977 [IC] (82.42)	PAS DE NOM (USA)
	DANSILI (GB)	\$321,065 2398 f, 1918 r, 1398 w, 347 SW	RAZYANA (USA) 🛈 🖼	HIS MAJESTY (USA)
	br. 1996 (34) 14-5-4-3	AEI 3.55, CI 2.01	b. 1981	SPRING ADIEU (CAN)
	£373,602	HASILI (IRE) () *	KAHYASI (IRE)	ILE DE BOURBON (USA)
		b. 1991	b. 1985 (77.69)	KADISSYA (USA)
OH MY DARLING (GB)		17-4-3-1	KERALI (GB)	HIGH LINE (GB)
2002		€59,265	ch. 1984	SOOKERA (USA)
,257		KRIS (GB) ()	SHARPEN UP (GB) 🚺 🔛	ATAN (USA)
		ch. 1976 (72.65)	ch. 1969 [BC] (73.26)	ROCCHETTA (GB)
		16-14-2-0 \$419.995	DOUBLY SURE (GB)	RELIANCE (FR)
	NOW AND FOREVER (IRE) b. 1993	\$413,332	b. 1971	SOFT ANGELS (GB)
	Unraced	EXCELLENT ALIBI (USA)	EXCELLER (USA) 🛈 🔛	VAGUELY NOBLE (IRE)
		b. 1981	b. 1973 (47.18)	TOO BALD (USA)
		9-3-0-0 \$8,117 in Fr	CHARMING ALIBI (USA) 🕕 🔛 *	HONEYS ALIBI (USA)
		40,117 1111	ch. 1963	ADORADA (ARG)

**Gender-balanced inbreeding** occurs when the ancestor appears as the progenitor of offspring of both genders in the pedigree of the subject animal. For instance, a Northern Dancer son in one part of the pedigree and a Northern Dancer daughter in another part. Or to go one better, a Northern Dancer son producing a daughter, and a Northern Dancer daughter producing a son.

When perusing pedigrees, I often see successful runners which have resulted from one Northern Dancer sire line over another Northern Dancer sire line, and there is nothing wrong with that. But it is my experience that a sort of vigor and stability is added when opposing genders are woven into the tapestry of inbreeding.

ANIMAL	KINGDOM 🛈 🖼 (USA) ch. C, 2008 {1	1-h} DP = 2-0-6-0-0 (8) DI = 1.67 CD = 0.50 -	- GSV = 59.40 - 12 Starts, 5 Wins, 5 Pla	aces, 0 Shows Career Earnings: \$8,387,500
		BLUSHING GROOM (FR) ()	RED GOD (USA)	NASRULLAH (GB)
	CANDY STRIPES (USA) () 🖌 ch. 1982 (45.32) 6-2-1-0	ch. 1974 [BC] (82.97) 10-7-1-2 \$407,153 522 f, 305 w, 93 SW	ch. 1954 (69.44)	SPRING RUN (USA)
			RUNAWAY BRIDE (GB)	WILD RISK (FR)
			b. 1962	AIMEE (GB)
		BUBBLE COMPANY (FR)	LYPHARD (USA) () 💽	NORTHERN DANCER (CAN)
	\$41,738	ch. 1977 12-1-2-4	b. 1969 [C] (86.72)	GOOFED (USA)
LEROIDESANIMAUX (BRZ)		\$27,027	PRODICE (FR) () ch. 1969	PROMINER (IRE)
ch. 2000 (27)		10 f, 8 r, 6 w, 3 SW		EURIDICE (FR)
13-9-2-0 \$1.658.377		AHONOORA (GB) 🚺 🔄 ch. 1975 (79.2)	LORENZACCIO (GB) 🛈 🔄	KLAIRON (FR)
Website		16-7-7-1	ch. 1965 (64.8)	PHOENISSA (GB)
	DISSEMBLE (GB)	£486,589 425 f. 45 SW	HELEN NICHOLS (GB)	MARTIAL (IRE)
	ch. 1989 0-0-0-0	AEI 2.23	ch. 1966	QUAKER GIRL (GB)
	Unraced	KERALI (GB)	HIGH LINE (GB) 🛈 🖼	HIGH HAT (GB)
		ch. 1984	ch. 1966 (73)	TIME CALL (GB)
		4-1-0-0	SOOKERA (USA) () *	ROBERTO (USA)
		\$5,212	dkb/br. 1975	IRULE (USA)
	ACATENANGO (GER) ① ch. 1982 (67.54) 24-16-0-3 E891,970	SURUMU (GER) () ch. 1974 (82.91) 9-3-1-2 ¢ 192.507	LITERAT (GER) 🛈 🖼 br. 1965 (67.54)	BIRKHAHN (GER)
				LIS (GER)
			SURAMA (GER) 🛈 🔄 blk. 1970	RELIANCE (FR)
				SUNCOURT (GB)
		AGGRAVATE (GB) ① 💽 b. 1966 10-3-2-0 £7,962	AGGRESSOR (GB) () 🔚 b. 1955 (67.54)	COMBAT (GB)
				PHAETONIA (GB)
DALICIA (GER) 🚯 🔚			RAVEN LOCKS (GB) 🛈 🔄	MR JINKS (GB)
b. 2001 24-3-5-4			blk. 1945	GENTLEMEN'S RELISH (GB)
\$195,532		DANCING BRAVE (USA) (1) 🔛	LYPHARD (USA) 🚺 🔙	NORTHERN DANCER (CAN)
Website		b. 1983 (73) 10-8-1-0	b. 1969 [C] (86.72)	GOOFED (USA)
	DYNAMIS (IRE)	\$1,776,723 31 SW	NAVAJO PRINCESS (USA)	DRONE (USA)
	b. 1991 18-0-2-3 £3,477 5 f, 4 r, 4 w, 1 SW			OLMEC (USA)
		DIASPRINA (GER) () b. 1986 11-2-?-?	ASPROS (GER)	SPARKLER (IRE)
			b. 1977 (27)	ANTWERPEN (GER)
			DORLE (GER)	RHEFFIC (FR)
		€ 44,585	b. 1974	DIU (GER)

In the **Animal Kingdom** pedigree above, you see that his Lyphard inbreeding is actually beautifully balanced by gender. The first Lyphard produces a daughter who produces a son. The second appearance of Lyphard shows him producing a son who produces a daughter.

LOPE DE VEGA ① 🔄 (IRE) ch. H, 2007 {11-d} DP = 2-1-11-0-0 (14) DI = 1.55 CD = 0.36 - GSV = 60.69 - 9 Starts, 4 Wins, 0 Places, 1 Shows Career Earnings: € 1,188,083				
	GIANTS CAUSEWAY (USA) ① w ch. 1997 [C] (49.54) 13-9-4-0 E2,031,426	br. 1983 (71.93) 8-4-3-0	STORM BIRD (CAN) () 💽 b. 1978 (71.05)	NORTHERN DANCER (CAN)
				SOUTH OCEAN (CAN)
			TERLINGUA (USA) () *	SECRETARIAT (USA)
			ch. 1976	CRIMSON SAINT (USA)
			RAHY (USA) 🚯 🖼	BLUSHING GROOM (FR)
	1626 f, 1148 r, 708 w, 130 SW AEI 1.83, CI 2.68, AWD 8.83	b. 1991	ch. 1985 (76.07)	GLORIOUS SONG (CAN)
	ALT 1.05, CT 2.00, AND 0.05	16-10-2-1	IMMENSE (USA)	ROBERTO (USA)
SHAMARDAL (USA) () b. 2002 (27)		\$724,894	b. 1979	IMSODEAR (USA)
7-6-0-0		MACHIAVELLIAN (USA) 🛈 🔙	MR. PROSPECTOR (USA) 🕦 🖼	RAISE A NATIVE (USA)
\$1,931,770		dkb/br. 1987 (75.64) 7-4-1-0	b. 1970 [BC] (78.54)	GOLD DIGGER (USA)
	HELSINKI (GB) 🚯 💽	\$357,023	COUP DE FOLIE (USA) () *	HALO (USA)
	b. 1993 5-1-0-1	733 f, 73 SW AEI 2.07	b. 1982	RAISE THE STANDARD (CAN)
	\$23,101	HELEN STREET (GB) 🕦 🔛	TROY (GB) (1) 💽	PETINGO (GB)
	5 f, 4 r, 3 w, 1 SW	b. 1982 9-3-1-2	b. 1976 (61.6)	LA MILO (GB)
		\$253,339	WATERWAY (FR)	RIVERMAN (USA)
		13 f	ch. 1976	BOULEVARD (IRE)
	VETTORI (IRE) () b. 1992 (63.76) 5-2-0-1 \$260,087	MACHTAVELLIAN (USA) ① dkb/br. 1987 (75.64) 7-4-1-0 \$357,023 733 f, 73 SW AEI 2.07	MR. PROSPECTOR (USA) 🕧 👿 b. 1970 [BC] (78.54)	RAISE A NATIVE (USA)
				GOLD DIGGER (USA)
			COUP DE FOLIE (USA) () * b. 1982	HALO (USA)
				RAISE THE STANDARD (CAN)
		14-3-4-2 \$145,387	SIR IVOR (USA) 🛈 🖼 b. 1965 [IC] (72.39)	SIR GAYLORD (USA)
LADY VETTORI (GB)				ATTICA (USA)
b. 1997			EURYANTHE (USA) ch. 1975	NIJINSKY (CAN)
7-5-1-1				QUILL (USA)
€ 109,916 1 SW	LADY GOLCONDA (FR) ch. 1992 unraced	KENDOR (FR) ① № gr. 1986 (52.96) 99 5428,288 \$428,288 311 w, 33 SW	KENMARE (FR) 🚺 🔚 gr. 1975 (59.04)	KALAMOUN (GB)
1 5W				BELLE OF IRELAND (GB)
			BELLE MECENE (FR)	GAY MECENE (USA)
			b. 1982	DJAKA BELLE (FR)
		10-1-3-1 \$22,740 in FR	SHARPMAN (IRE) 🛈 🖼 ch. 1976 (73)	SHARPEN UP (GB)
				MISS MANON (FR)
			GOLONDRINA (FR)	SHESHOON (GB)
		12 f, 8 r, 8 w, 3 SW	b. 1970	LA GUELDRA (FR)

French Derby and Guineas winner **Lope De Vega** possesses a similar pedigree exhibiting gender-balanced inbreeding. This time, the duplicated individual is French Champion **Machiavellian**. It is interesting to note that Machiavellian himself has a gender-balanced pedigree, which you can see at this <u>PedigreeQuery link</u>.

Another excellent runner with gender-balanced inbreeding is **Prized**. The winner of the Breeders' Cup Turf and the Molson Export Million has about the most beautiful pedigree I have ever seen, as far as gender balance goes.

		HAIL TO REASON (USA) 🚺 🔄 br. 1958 [C] (82.03)	TURN-TO (IRE) 🕕 🔚	ROYAL CHARGER (GB)
	ROBERTO (USA) () b. 1969 [C] (90.61) 14-7-3-0 \$339,902 507 f, 452 r, 334 w, 85 5W AEI 3.12	18-9-2-2	b. 1951 [BI] (79.39)	SOURCE SUCREE (FR)
		\$328,434	NOTHIRDCHANCE (USA)	BLUE SWORDS (USA)
		319 f, 218 w, 43 SW	b. 1948	GALLA COLORS (USA)
		BRAMALEA (USA) () *	NASHUA (USA) 🛈 🔚	NASRULLAH (GB)
		b. 1959 38-8-7-7	b. 1952 [IC] (79.1)	SEGULA (USA)
KRIS S (USA) () 🔄		\$192,396	RARELEA (USA)	BULL LEA (USA)
blk/br. 1977 (74.37) 5-3-1-0		9 f, 8 r, 7 w, 1 SW	b. 1949	BLEEBOK (USA)
\$53,350		PRINCEQUILLO (IRE) () S	PRINCE ROSE (GB) 🚯 🔚	ROSE PRINCE (FR)
863 f, 748 r, 572 w, 88 SW AEI 2.48		b. 1940 [IS] (90.74) 33-12-5-7	b. 1928 [C] (89.61)	INDOLENCE (GB)
	SHARP QUEEN (USA) () b. 1965	\$96,550 482 f, 65 SW	COSQUILLA (GB)	PAPYRUS (GB)
	14-2-1-2	AEI 3.31	b. 1933	QUICK THOUGHT (IRE)
	\$11,775	BRIDGEWORK (USA)	OCCUPY (USA) ()	BULL DOG (FR)
	8 f, 7 r, 6 w, 1 SW	br. 1955	b. 1941 (35.37)	MISS BUNTING (USA)
		13-5-2-2	FEALE BRIDGE (GB)	GOLD BRIDGE (FR)
		\$34,897	ch. 1942	TOLERATE (IRE)
		DARK STAR (USA) 🛈 🔛	ROYAL GEM (AUS) 🚯 🖼	DHOTI (GB)
		br. 1950 (64.28) 13-6-2-2	br. 1942 (27.94)	FRENCH GEM (AUS)
	MY DAD GEORGE (USA) 🛈 🔙	\$131,337 301 f, 24 SW AEI 1.65	ISOLDE (USA)	BULL DOG (FR)
	b. 1967 (26) 24-8-5-3		br. 1938	FIJI (USA)
	\$334,295	MABEKKY (USA)	SKYTRACER (USA)	FLARES (USA)
	+++++++++++++++++++++++++++++++++++++++	b. 1951 57-4-12-8	b. 1941 (27.27)	BORGIA (GB)
MY TURBULENT MISS (USA) 🕕 🖼			MODEST QUEEN (USA)	BURGOO KING (USA)
b. 1976 Unraced		\$28,830	b. 1936	BELITTIN (USA)
15 f, 14 r, 13 w, 6 SW		PETARE (ARG) 🛈 🔛	MOSLEM (ARG) ()	RUSTOM PASHA (GB)
		b. 1951 (54.71) 94-35-2-3	b. 1942 (45.09)	MERROSE (GB)
	TURBULENT MISS (USA)	\$284,944	COLLETTE (ARG)	DIADOQUE (GB)
	dkb/br. 1969	Website	b. 1945	COLOMBINE (ARG)
	41-4-6-7 \$59,167	BEHAVING DEBY (USA)	AMBEHAVING (USA)	AMBIORIX (FR)
	\$35,107	blk. 1961	br. 1954 (63.9)	DENTIFRICE (USA)
		18-5-3-1 \$70,109	DASHING DEBY (USA)	HASTEVILLE (USA)
		\$70,103	ch. 1955	DEBY (USA)

PRIZED 🕦 🔤 (USA) b. H, 1986 {8-c} DP = 1-4-15-2-0 (22) DI = 1.32 CD = 0.18 - GSV = 65.13 - 17 Starts, 9 Wins, 2 Places, 3 Shows Career Earnings: \$2,262,555

In his 5<sup>th</sup> generation you will see the stallion Bull Dog twice. In the first appearance, he has a son who has a daughter who has a son. In the next appearance of Bull Dog, he has a daughter who has a son who has a son who has a daughter. It is a perfect mirror image of opposing genders. This may be seen easier in the illustration below:

BULL DOG > son > daughter > daughter > sonBULL DOG > daughter > son > son > daughter

## Another great race horse with gender-balanced inbreeding to Bull Dog was the unforgettable John Henry.

JC	OHN HENRY (1) (USA) br. G, 1975 {8-c} DP	= 13-4-9-2-0 (28) DI = 3.31 CD = 1.00 -	GSV = 69.42 - 83 Starts, 39 Wins, 15 Places, 9	Shows Career Earnings: \$6,591,860
	PRINCE BLESSED (USA) () br. 1957 (40.67) 35-8-6-4 \$2255,805 176 f. 5 SW AEI.95		PRINCE ROSE (GB) 🛈 🖼 b. 1928 [C] (89.61)	ROSE PRINCE (FR)
				INDOLENCE (GB)
			COSQUILLA (GB)	PAPYRUS (GB)
			b. 1933	QUICK THOUGHT (IRE)
		DOG BLESSED (USA) () * br. 1941 25-1-3-1 \$1,550	BULL DOG (FR) 🚯 🔛	TEDDY (FR)
			br. 1927 [B] (80.16)	PLUCKY LIEGE (GB)
OLE BOB BOWERS (USA) 🚯 🔛			BLESSED AGAIN (USA) () * br. 1932	BLUE LARKSPUR (USA)
b. 1963 (48.51) 30-6-3-6				CLONASLEE (IRE)
\$65,215		BULL LEA (USA)	BULL DOG (FR) 🚺 🔙	TEDDY (FR)
		br. 1935 [C] (84.44)	br. 1927 [B] (80.16)	PLUCKY LIEGE (GB)
	BLUE JEANS (USA)	27-10-7-3	ROSE LEAVES (USA) () 🔄 *	BALLOT (USA)
	b. 1950	\$94,825	br. 1916	COLONIAL (GB)
	12-1-1-1 \$3,725		BLUE LARKSPUR (USA) 🚯 👿	BLACK SERVANT (USA)
	\$3,725	b. 1944	br. 1926 [C] (89.44)	BLOSSOM TIME (USA)
	DOUBLE JAY (USA) () bik/br. 1944 [B] (79.76) 48-17-9-9 \$299.005 Website	22-4-2-4 \$44,980	CAMELOT (USA)	SIR GALLAHAD (FR)
		\$44,300	b. 1935	CROSS OF GOLD (GB)
		BALLADIER (USA) () S blk. 1932 (69.16) 5-3-1-0 \$18,320	BLACK TONEY (USA)	PETER PAN (USA)
			br. 1911 [BI] (74.62)	BELGRAVIA (USA)
			BLUE WARBLER (USA)	MAY BIRD (GB)
		BROOMSHOT (USA) () blk/br: 1926 126-17-23-16 \$14,770	WHISK BROOM (USA) () 💽 ch. 1907 (85.66)	BROOMSTICK (USA)
				AUDIENCE (USA)
And the second				SAIN (GB)
ONCE DOUBLE (USA) 🚯 🔛			CENTRE SHOT (USA) br. 1905	GRAND SHOT (USA)
dkb/br. 1967 19-2-1-4	INTENT ONE (USA) ch. 1955 10-1-2-1 \$3,750 2 SW	INTENT (USA) () ch. 1948 (54.73) 21-84-6 \$317,775 206 f, 11 SW AEI 1.75	WAR RELIC (USA) (1) 🖼	MAN O' WAR (USA)
\$3,123 9 f, 9 r, 8 w, 2 SW			ch. 1938 (71.04)	FRIARS CARSE (USA)
			LIZ F. (USA) () *	BUBBLING OVER (USA)
			ch. 1933	WENO (USA)
		DUSTY LEGS (USA) () ch. 1945 33-4-5-3 \$23,150	MAHMOUD (FR) () gr. 1933 [IC] (95.31)	BLENHEIM (GB)
				MAH MAHAL (GB)
			DUSTEMALL (USA)	CHICLE (FR)
			br. 1927	MISS WHISK (USA)

JOHN HENRY () (USA) br. G, 1975 {8-c} DP = 13-4-9-2-0 (28) DI = 3.31 CD = 1.00 - GSV = 69.42 - 83 Starts, 39 Wins, 15 Places, 9 Shows Career Earnings: 86.591.860

One of my favorite stallions of all time was **Monsun**. When you look at his pedigree, the first thing that pops out is that he is inbred to full siblings Kaiserkrone and Kaiseradler in his fourth generation. That is another neat inbreeding trick altogether. But his gender balance comes from Hyperion in the 5<sup>th</sup> generation.

MONSUN 🛞 🔄 (GER) dkb/br. H, 1990 {8-a} DP = 0-0-4-1-1 (6) DI = 0.50 CD = -0.50 - GSV = 69.97 - 23 Starts, 12 Wins, 5 Places, 1 Shows Career Earnings: DM 2,088,55

		TAMERLANE (GB) 🚯 👿	PERSIAN GULF (GB) 🚯 👿	BAHRAM (GB)
	DSCHINGIS KHAN (GER) 🕻 🔚 dkb/br. 1961 (73) 33-12-?-? 327 f, 31 SW	b. 1952 (73) 9-6-1-1 \$37,239	b. 1940 [C] (82.17)	DOUBLE LIFE (IRE)
			EASTERN EMPRESS (GB) b. 1944	NEARCO (ITY)
				CHEVELEY LADY (GB)
		DONNA DIANA (GER) 🛈 🔚 blk/br. 1956	NECKAR (GER) 🚯 🔛	TICINO (GER)
			blk. 1948 (78.39)	NIXE (GER)
KONIGSSTUHL (GER) blk/br. 1976 (73) 20-11-7-2			DONATELLA (GER)	ALLGAU (GER)
			dkb/br. 1950	BLAUE DONAU (GER)
€525.672		TIEPOLETTO (FR)	TORNADO (FR) b. 1939 (81.06)	TOURBILLON (FR)
384 f, 34 SW		br. 1956 (27)		ROSEOLA (GB)
	KONIGSKRONUNG (GER)	?-6-1-?	SCARLET SKIES (FR)	BLUE SKIES (FR)
	br. 1965	10.507.05	br. 1938	SCARLET QUILL (FR)
	3-1-0-2	KRONUNG (GER) () *	OLYMP (GER)	ARJAMAN (GER)
	\$15,893	dkb/br. 1957	b. 1942 (67.54)	OLYMPIADE (GER)
		8-0-3-2 \$1,279	KAISERKRONE (GER)	NEBELWERFER (GER)
		9 f, 9 r, 9 w	blk. 1952	KAISERWURDE (GER)
		LITERAT (GER)	BIRKHAHN (GER)	
		LITERAT (GER)		ALCHIMIST (GER)
		LITERAT (GER) () 💽 br. 1965 (67.54)	BIRKHAHN (GER) () br. 1945 (90.45)	ALCHIMIST (GER) BRAMOUSE (FR)
		br. 1965 (67.54) 9-3-3-2	br. 1945 (90.45)	
	SURUMU (GER) () 🔄 ch. 1974 (82.91)	br. 1965 (67.54)	br. 1945 (90.45)	BRAMOUSE (FR)
	ch. 1974 (82.91) 9-3-1-2	br. 1965 (67.54) 9-3-3-2 \$22,800	br. 1945 (90.45) LIS (GER) () br. 1960	BRAMOUSE (FR) MASETTO (GER)
	ch. 1974 (82.91)	br. 1965 (67.54) 9-3-3-2 \$22,800 SURAMA (GER) ()	br. 1945 (90.45)	BRAMOUSE (FR) MASETTO (GER) LIEBESLIED (GER)
MOSELLA (GER)	ch. 1974 (82.91) 9-3-1-2	br. 1965 (67.54) 9-3-3-2 \$22,800 SURAMA (GER) () <b>b</b> bik. 1970	br. 1945 (90.45) LTS (GER) () br. 1960 RELIANCE (FR) () br. 1962 [SP] (73) SUNCOURT (GB) ()	BRAMOUSE (FR) MASETTO (GER) LIEBESLIED (GER) TANTIEME (FR)
dkb/br. 1985	ch. 1974 (82.91) 9-3-1-2	br. 1965 (67.54) 9-3-3-2 \$22,800 SURAMA (GER) ()	br. 1945 (90.45) LIS (GER) () br. 1960 RELIANCE (FR) () br. 1962 [SP] (73)	BRAMOUSE (FR) MASETTO (GER) LIEBESLIED (GER) TANTIEME (FR) RELANCE (FR)
dkb/br. 1985 5-1-2-1	ch. 1974 (82.91) 9-3-1-2	br. 1965 (67.54) 9-3-3-2 \$22,800 SURAMA (GER) () <b>b</b> bik. 1970	br. 1945 (90.45) LTS (GER) () br. 1960 RELIANCE (FR) () br. 1962 [SP] (73) SUNCOURT (GB) ()	BRAMOUSE (FR)           MASETTO (GER)           LIEBESLED (GER)           TANTIEME (FR)           RELANCE (FR)           HYPERION (GB)
dkb/br. 1985	ch. 1974 (82.91) 9-3-1-2	br. 1965 (67.54) 9-3-3-2 \$22,800 SURAMA (GER) () <b>b</b> bik. 1970	br. 1945 (90.45) LTS (GER)() br. 1960 RELIANCE (FR)() br. 1952 (SP] (73) SUNCOURT (GB)() br. 1952	BRAMOUSE (FR)           MASETTO (GER)           LIEBESLIED (GER)           TANTIEME (FR)           RELANCE (FR)           HYPERION (GB)           INQUISTION (GB)
dkb/br. 1985 5-1-2-1 € 10,533	ch. 1974 (82.91) 9-3-1-2 ¢ 192.507	br. 1965 (67.54) 9-3-3-2 \$22,800 SURAMA (GER) () S blk. 1970 Unraced	br. 1945 (90.45) LIS (GER) ① br. 1960 RELIANCE (FR) ① br. 1962 [SP] (73) SUNCOURT (GB) ① br. 1952 AUREOLE (GB) ① br.	BRAMOUSE (FR)           MASETTO (GER)           LIEBESLIED (GER)           TANTIEME (FR)           RELANCE (FR)           HYPERION (GB)           INQUISITION (GB)           HYPERION (GB)
dkb/br. 1985 5-1-2-1 € 10,533	ch. 1974 (82.91) 9-3-1-2 C 192.507 MONASIA (GER)	Dr. 1965 (67.54) 9-3-3-2 \$22,800 SURAMA (GER) () blk. 1970 Unraced AUTHI (IRE) ()	br. 1945 (90.45) LIS (GER) () br. 1960 RELIANCE (FR) () br. 1962 [SP] (73) SUNCOURT (GB) () br. 1952 AUREOLE (GB) () ch. 1950 (C) (82.47)	BRAMOUSE (FR)           MASETTO (GER)           LIEBESLED (GER)           TANTEME (FR)           RELANCE (FR)           INQUISITION (GB)           HYPERION (GB)           ANGELOLA (GB)
dkb/br. 1985 5-1-2-1 € 10,533	ch. 1974 (82.91) 9-3-1-2 c 192.507 MONASIA (GER)	br. 1965 (67.54) 9-3-3-2 \$22,800 SURAMA (GER) ① ► blk. 1970 Unraced AUTHI (IRE) ① b. 1970 (51)	br. 1945 (90.45) LTS (GER)() br. 1960 RELIANCE (FR)() br. 1962 (SP] (73) SUNCOURT (GB)() br. 1952 AUREOLE (GB)() C. 1950 [C] (82.47) VIRTUOUS (GB)()	BRAMOUSE (FR) MASETTO (GER) LILEBESLIED (GER) TANTIEME (FR) RELANCE (FR) HYPERION (GB) INQUISITION (GB) HYPERION (GB) ANGELOLA (GB) ABOVE SUSPICION (GB)
dkb/br. 1985 5-1-2-1 € 10,533	ch. 1974 (82.91) 9-3-1-2 C 192.507 MONASIA (GER)	Dr. 1965 (67.54) 9-3-3-2 \$22,800 SURAMA (GER) ① E bik. 1970 Uhraced AUTHI (IRE) ① b. 1970 (S1) MONACENSIA (GER) ①	br. 1945 (90.45) LIS (GER) () br. 1960 RELIANCE (FR) () br. 1952 [F] (73) SUNCOURT (GB) () br. 1952 [C] (82.47) VIRTUOUS (GB) () b. 1962	BRAMOUSE (FR) MASETTO (GER) LIEBESLIED (GER) TANTIEME (FR) RELANCE (FR) HYPERION (GB) HYPERION (GB) ANGELOLA (GB) ROSE OF INDIA (GB)
dkb/br. 1985 5-1-2-1 € 10,533	ch. 1974 (82.91) 9-3-1-2 c 192.507 MONASIA (GER)	br. 1965 (67.54) 9-3-3-2 \$22,800 SURAMA (GER) ① ► blk. 1970 Unraced AUTHI (IRE) ① b. 1970 (51)	br. 1945 (90.45) LTS (GER)() br. 1960 RELIANCE (FR)() br. 1950 SUNCOURT (GB)() br. 1952 AUREOLE (GB)() ch. 1950 [C] (82.47) VIRTUOUS (GB)() b. 1962 KAISERADLER (GER)() E	BRAMOUSE (FR)           MASETTO (GER)           LIEBESLED (GER)           TANTIEME (FR)           RELANCE (FR)           INQUISITION (GB)           HYPERION (GB)           ANGELOLA (GB)           ANGELOLA (GB)           ROSE OF INDIA (GB)           NOBEL MERFER (GER)

HYPERION > daughter > daughter > son HYPERION > son > son > daughter

The list of great horses with this type of inbreeding is quite long and is <u>not</u> a new trend. Here is a *small sampling* of gender-balanced inbreeding stretching back into history:

LONG RUNNER (2016) JUSTIFY (2015) ENABLE (2014) SHE'S A MANEATER (2014) HIGHLAND REEL (2012) VA BANK (2012) WINX (2011) BIG ORANGE (2011) ANIMAL KINGDOM (2008) FRANKEL (2008) EBONY FLYER (2007) ZARKAVA (2005) AUTHORIZED (2004) WAR FRONT (2002) TAPIT (2001) CASHIER' S DREAM (1999) <u>MISS TERRIBLE</u> (1999) <u>GALILEO</u> (1998) <u>CARESSING</u> (1998) <u>IPI TOMBE</u> (1998) <u>FUSAICHI PEGASUS</u> (1997) <u>PETRUSHKA</u> (1997) <u>HORSE CHESTNUT</u> (1995) <u>CHESTER HOUSE</u> (1995) **JET MASTER** (1994) WATER POET (1993) HIDDEN LAKE (1993) **DISTORTED HUMOR (1993)** OCTAGONAL (1992) HOLY BULL (1991) CHEROKEE RUN (1990) KINGMAMBO (1990) MONSUN (1990) POSSIBLY PERFECT (1990) DR DEVIOUS (1989) PINE BLUFF (1989) RHYTHM (1987) UNBRIDLED (1987) MACHIAVELLIAN (1987) MISTER FRISKY (1987) SUNDAY SILENCE (1986) **PRIZED** (1986) FORTY NINER (1985) RAVINELLA (1985) AFLEET (1984) **BET TWICE (1984)** CRYPTOCLEARANCE (1984) **MIESQUE** (1984) SACAHUISTA (1984) CRÈME FRAICHE (1982) SADLER'S WELLS (1981) SWALE (1981) **EILLO** (1980) ESTRAPADE (1980) LANDALUCE (1980) **COZZENE** (1980) WILD AGAIN (1980) **BIG SECRET** (1978) MISWAKI (1978) **CODEX** (1977)

**GELINOTTE** (1977) KONIGSSTUHL (1976) TRACK ROBBERY (1976) JOHN HENRY (1975) AFFIRMED (1975) **BUCKAROO** (1975) **BLUSHING GROOM** (1974) LATE BLOOMER (1974) SEATTLE SLEW (1974) BOLD FORBES (1973) SIR TRISTRAM (1971) EL GATO (1970) **KARAYEL** (1970) **<u>ROBERTO</u>** (1969) MAJESTIC PRINCE (1966) PINK PIGEON (1964) IN REALITY (1964) **DR FAGER** (1964) BUCKPASSER (1963) **GRAUSTARK** (1963) QUICKEN TREE (1963) SEA COTTAGE (1962) RAISE A NATIVE (1961) NORTHERN DANCER (1961) **ANILIN** (1961) DSCHINGIS KHAN (1961) NEVER BEND (1960) **KELSO** (1957) **<u>GRADISCO</u>** (1957) BOLD RULER (1954) GALLANT MAN (1954) **RIBOT** (1952) **SWAPS** (1952) **CAMARERO** (1951) PORTERHOUSE (1951) **TURN-TO** (1951)

**<u>FIND</u>** (1950) **NECKAR** (1948) ROUGH'N TUMBLE (1948) YOUR HOST (1947) **DJEDDAH** (1945) TUDOR MINSTREL (1944) DOUBLE JAY (1944) POLYNESIAN (1942) **PRINCEQUILLO** (1940) JOHNSTOWN (1936) **NEARCO** (1935) HOROMETER (1931) HYPERION (1930) **BLUE LARKSPUR** (1926) MUMTAZ MAHAL (1921) SIR GALLAHAD (1920) GLOAMING (1915) **TEDDY** (1913) THE TETRARCH (1911) **BLACK TONEY** (1911) PRESTIGE (1903) **ROSEBEN** (1901) AJAX (1901) **ROCK SAND** (1900) **COMMANDO** (1898) **BEN BRUSH** (1893) **DOMINO** (1891) **KINGSTON** (1884) **ORMONDE** (1883) ST. SIMON (1881) **DAREBIN** (1878) **PILGRIMAGE (1875) KINCSEM** (1874) HARRY BASSETT (1868) **FASHION** (1837) **ECLIPSE** (1764)