

Well I'll be *damned* - Insights into the predictive value of pedigree information in horse racing

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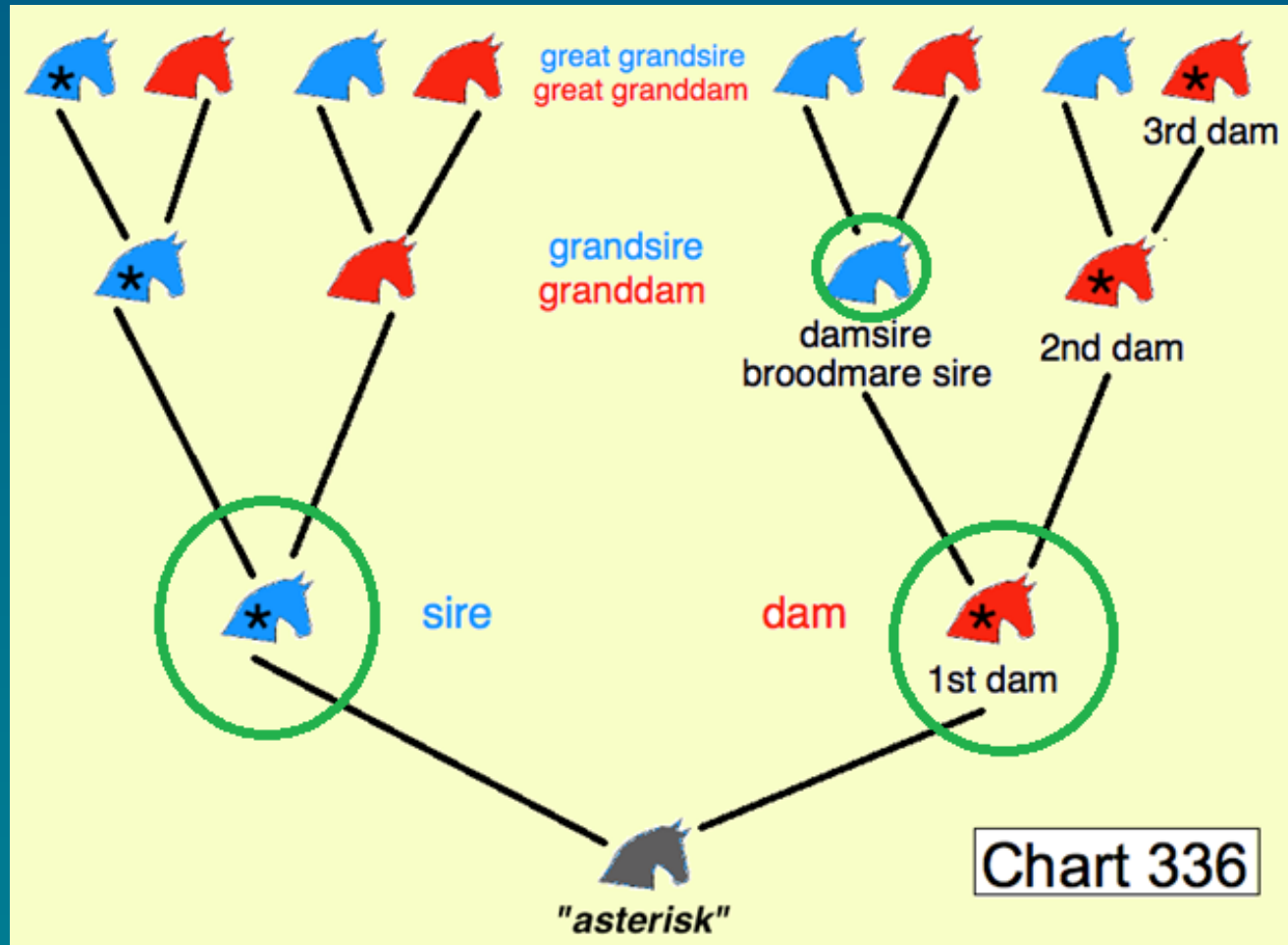
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Overview

- Pedigree and theories
- Information sources and cognitive tools
- UK Bookmaker market and suitable race types
- Methodology & Results, including the ability of bettors to incorporate pedigree information
- Implications

Pedigree



Breeding and the analysis of pedigree

Theories include:

- Dosage
- Inbreeding/line breeding
- Sex balancing
- Nicking
- Rasmussen factor
- X-factor



FEDERICO TESIO, Italy's most distinguished breeder, on the San Siro racecourse at Milan. A recent snapshot.

Dosage theory

- Prevalent in form guides
- Influential sires - *chef de races*
- DI indicative of speed/stamina balance
- Issues – Retrospective changes
 - Bias towards sire-line
 - No control group
 - Limited to four generations

Dosage Theory - Nyquist



- Sire never won a race at 10 Furlongs (2000m)
- Same great damsire as
 - * American Pharoah
 - * A Shin Hikari

Kentucky Derby winner
Nyquist

Dosage Index – 7.00

Source: <http://tinyurl.com/hysx9zq>

Analysing information from a range of sources

NYQUIST ⓘ ⓘ (USA) b. C, 2013 {6-f} DP = 1-2-1-0-0 (4) DI = 7.00 CD = 1.00 - 9 Starts, 8 Wins, 0 Places, 1 Shows C

UNCLE MO (USA) b. 2008	INDIAN CHARLIE (USA) b. 1995	IN EXCESS (IRE) br. 1987	SIBERIAN EXPRESS (USA) gr. 1981
			KANTADO (IRE) b. 1976
		SOVIET SOJOURN (USA) b. 1989	LEO CASTELLI (USA) b. 1984
	PLAYA MAYA (USA) dkb/br. 2000		POLITICAL PARFAIT (USA) dkb/br. 1984
		ARCH (USA) dkb/br. 1995	KRIS S (USA) blk/br. 1977
			AURORA (USA) b. 1988
SEEKING GABRIELLE (USA) ch. 2007	FORESTRY (USA) b. 1996	DIXIE SLIPPERS (USA) dkb/br. 1995	DIXIELAND BAND (USA) b. 1980
			CYANE'S SLIPPERS (USA) dkb/br. 1983
		STORM CAT (USA) br. 1983	STORM BIRD (CAN) b. 1978
	SEEKING REGINA (USA) ch. 1992		TERLINGUA (USA)* ch. 1976
		SHARED INTEREST (USA) b. 1988	PLEASANT COLONY (USA) br. 1978 [I]
			SURGERY (USA) b. 1976
		SEEKING THE GOLD (USA) br. 1985	MR. PROSPECTOR (USA) b. 1970 [BC]
			CON GAME (USA)* dkb/br. 1974
		FULBRIGHT SCHOLAR (USA) ch. 1985	COXS RIDGE (USA) b. 1974
			MATRICULATION (USA) ch. 1972

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Racecard Settings

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14:00 Ludlow 8 May 2016
Mike Rhodes Shrewsbury Honda Centre Novices' Hurdle (Class 4) (4YO plus)
 Winner £3,899 - 4 run - Draw Advantage: None

1M 7F 169Y
 Good (Good to Soft in places)
[View Course Guide](#)

Weighed In

Racecard		TIMEFORM	Print-outs		TIMEFORM	Predictor	Formscan	Pace
No.	Form	Horse	Age / wt	Jockey / trainer	Timeform says (Star rating)			
1	311- 1	RED TORNADO (FR) (19) ch g Dr Fong - Encircle (Spinning World) CD G Cl	4 11-8 127	Harry Skelton D Skelton	Suggested the run was needed on hurdles bow at Stratford (2m) in March and took strides forward to land back-to-back novice events around 2m since. Big player in bid to land hat-trick. ★★★★★			
2	878- 1	APACHE PEARL (IRE) (95) br g Indian Danehill - Pearl Buttons (Alflora)	5 11-0 -	Jake Greenall W Greatrex	Out of an unraced sister to a couple of useful sorts, but offered little immediate encouragement either start in bumpers and similar story on hurdles bow at Ludlow in February. ★★			
3	3- 1	RACING SPIRIT (301) (30F) ch g Sir Percy - Suertuda (Domedriver)	4 10-10 -	Lee Edwards Kevin Frost	Poor on the Flat, though did exceed anything achieved in that sphere when third on hurdles bow at Stratford in July (final start for John Quinn). Arrives on the back of 2 very lean efforts, though. ★			
4	5- 1	SANAIJA (191) ch m Pivotal - Sanjida (Polish Precedent) G		Non Runner	Useful on Flat for A. de Royer Dupre at up to 12.5f and showed aptitude for this job when midfield on yard debut at Uttoxeter in October. Open to improvement going forward. ★★★★★			
5	P5- 1	RIGHT MADAM (IRE) (19) b f Jeremy - Mawaared (Machiavellian) G HG	4 10-3 p h -	Jack Quinlan Sarah Hollinshead	Modest maiden on the Flat, and went with little encouragement in 2 starts over hurdles in recent weeks. ★★			

2015: (6 ran) Are They Your Own, Age 7, Wgt 11-0, SP 14/1 - Nick Slatter / F O'Brien
 Forecast: 4/5 Red Tornado, 9/4 Sanaija, 10/1 Racing Spirit, 12/1 Right Madam, 12/1 Apache Pearl
 (Note: non-runner may affect prices)

Print Racecard

☐ Make this tab my default

Racecards

Fast results

Feedback

Decision making under uncertainty



Setting – UK Bookmaker market

- Bookies dominate
>80% market share
- Market maker
- Fixed odds
- Over-round varies



Photo by Will Palmer

<http://tinyurl.com/gr54ua7>

Can pedigree information help predict the winner ?

- Pedigree information potentially more valuable for:
 - Maidens
 - Untried distance increases (Gramm and Ziemba, 2008,2012)
- Sire & dams performance (if raced)
- Performance of sire & dams offspring

Methodology

- Maiden races – restricted to Over-round >8%
- Preference variables
- Conditional Logit Modelling
- Kelly wagering strategy



Secretariat

Heart size: 22 pounds
(>2.5 times larger than
average)

Results – Pedigree only

- Pedigree information can be valuable
- Performance of sire, dams, damsires offspring better predictor
- Dam-line provides more insight

Pseudo $R^2 = 0.1022$ (variation explained by model)

18 significant variables ($P < 0.05$)

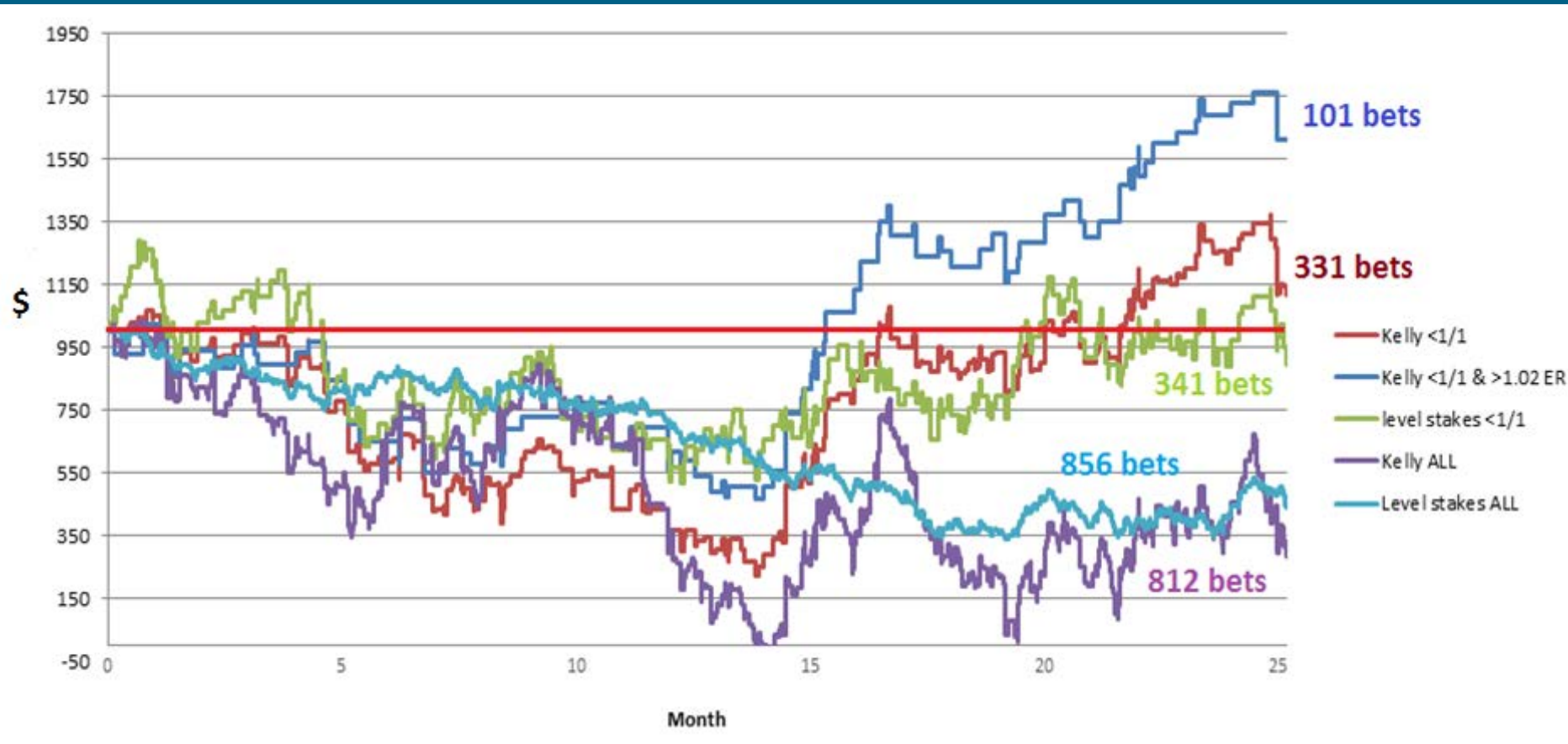
Results – Pedigree + odds

- Pseudo R^2 including odds = 0.27444
- Pseudo R^2 odds only = 0.27414
- Difference of 0.0003

Results & Conclusion

- Only one factor not discounted in the starting price odds
- Performance of sires' offspring of a similar age/sex
- Bettors good at discounting pedigree info
 - High level of experience and expertise
 - Regularly assessing events in probabilities
 - Regular & immediate feedback plus incentive¹⁵

Wagering – 2013 to 2014 (3154 races)



Summary

- Pedigree has some predictive value
- Bettors are good at using this information
- Bookie market semi-strong form efficient
- A positive ROI is achievable, thanks to FLB
- Naturalistic settings make for well calibrated decisions

Thank you

Interested in pedigree?

Check out Boojums bonanza (blog by David Dink)

<https://ddink55.wordpress.com/>

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