

18. Grazer Konferenz: Qualität der Lehre
Education for Medical Future
Salzburg, 3. - 5. April 2014



Medical University of Graz

Common Admission Procedure of the Medical Universities in Vienna, Innsbruck and Graz

Gilbert Reibnegger¹ & Martin Arendasy²

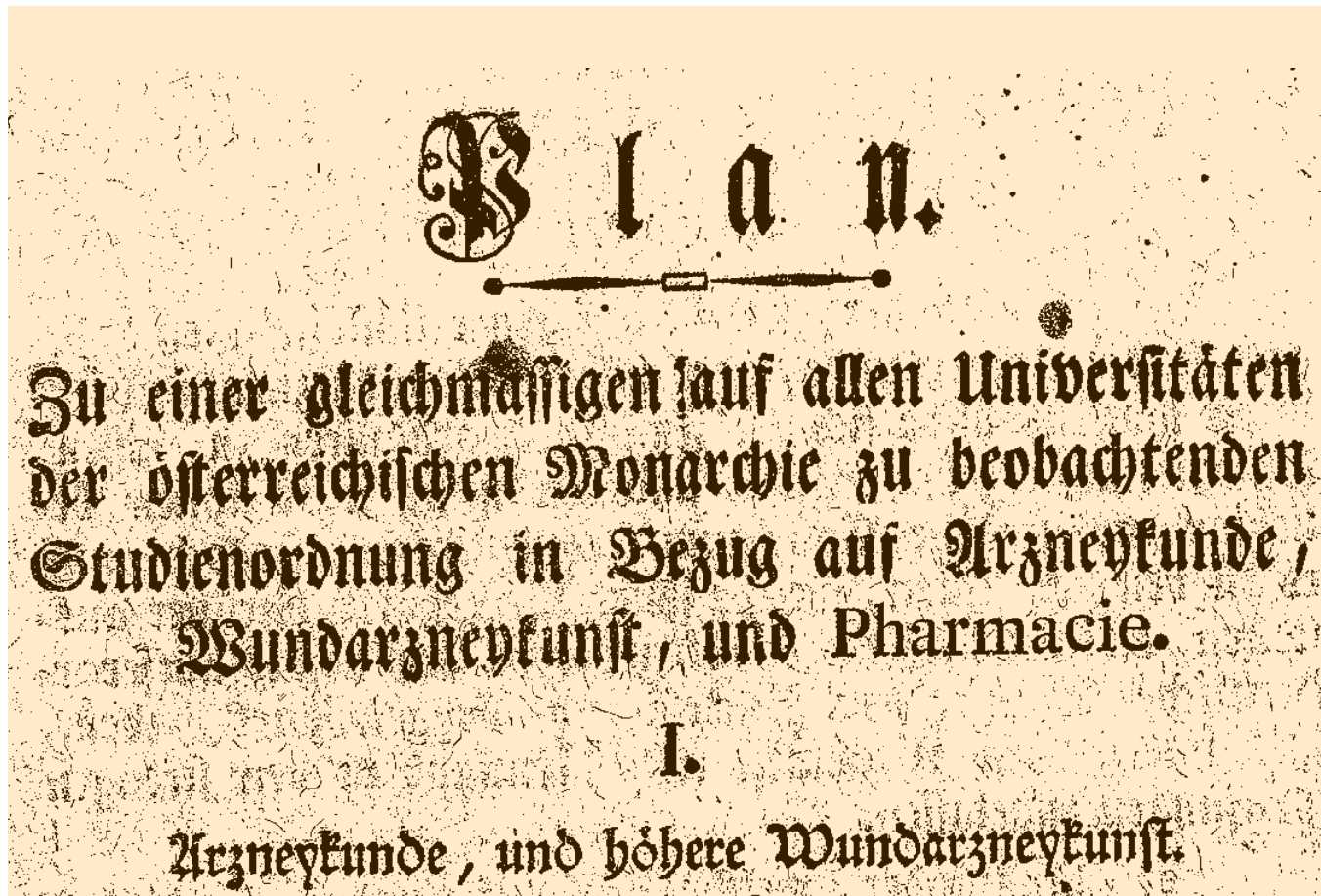
¹Medical University of Graz

²Karl-Franzens-University of Graz





The past ...





Many problems are not really new...

Bei der Verlautbarung des Studienplanes am 17. Februar 1804 wurde ihm ein begleitendes und erläuterndes Dekret beigegeben, in dem es u.a. hieß:

„Die unverhältnismässig grosse Anzahl der Kandidaten, welche schon seit mehreren Jahren der Arzneykunde schaarenweise zulaufen, und zu Doktoren befördert werden, ist ein allgemein auffallendes, dem Staat und der Menschheit keineswegs gleichgültiges Gebrechen, welches einer zweckmässigen Abhülfe nothwendig bedarf.

Diese Abhilfe zu verschaffen, und die bey dem Studium der Arzneykunde, Wundarzneykunst und Pharmazeutik eingeschlichenen Mißbräuche und Unordnungen abzustellen, ist der Zweck des gegenwärtigen Planes, und die treuehorsamste Hofkanzley hält unmaßgebigst dafür, daß dieser Plan im ganzen genommen, der Ansicht vollkommen entspreche ...“

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Since 2013: Common Admission Procedure

MedAT-H & MedAT-Z



- **Human Medicine – MedAT-H**

- BMS: Basic knowledge (biology, chemistry, physics, mathematics)
- Text comprehension test
- Test of cognitive abilities (figure assembly, number series, memory & retentiveness, mathematical reasoning)

- **Dental Medicine – MedAT-Z**

- BMS: Basic knowledge (biology, chemistry, physics, mathematics)
- Test of cognitive abilities (figure assembly, number series, memory & retentiveness, mathematical reasoning)
- Test of manual abilities



- **Human Medicine - MedAT-H**

- BMS: Basic knowledge (biology, chemistry, physics, mathematics)
- Text comprehension test
- Test of cognitive abilities (figure assembly, number series, memory & retentiveness, mathematical reasoning)
- Test of critical thinking (2 subtests) [2014]

- **Dental Medicine - MedAT-Z**

- BMS: Basic knowledge (biology, chemistry, physics, mathematics)
- Test of cognitive abilities (figure assembly, number series, memory & retentiveness, mathematical reasoning)
- Test of manual abilities



- Aims of the BMS / Text Comprehension Test (Graz)

General requirements:

- Capacity
- Performance
- Fairness
- Transparency



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Important questions:

- Ability to study successfully?
- Aptitude for future profession?



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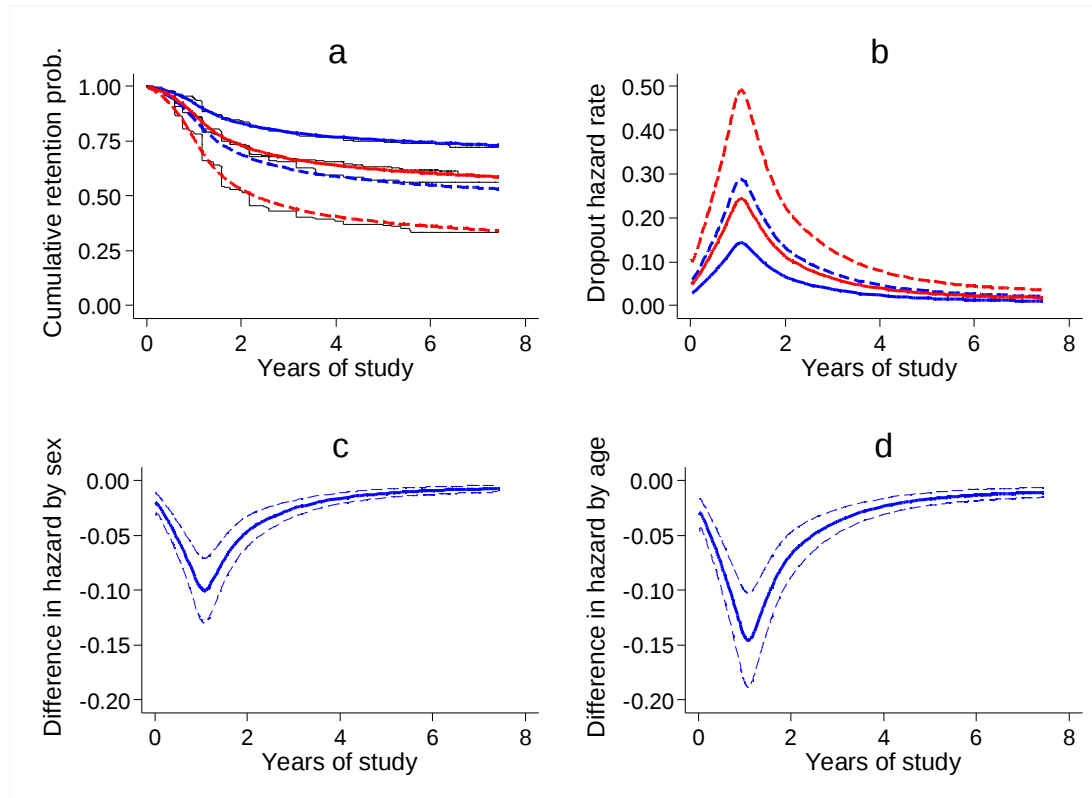
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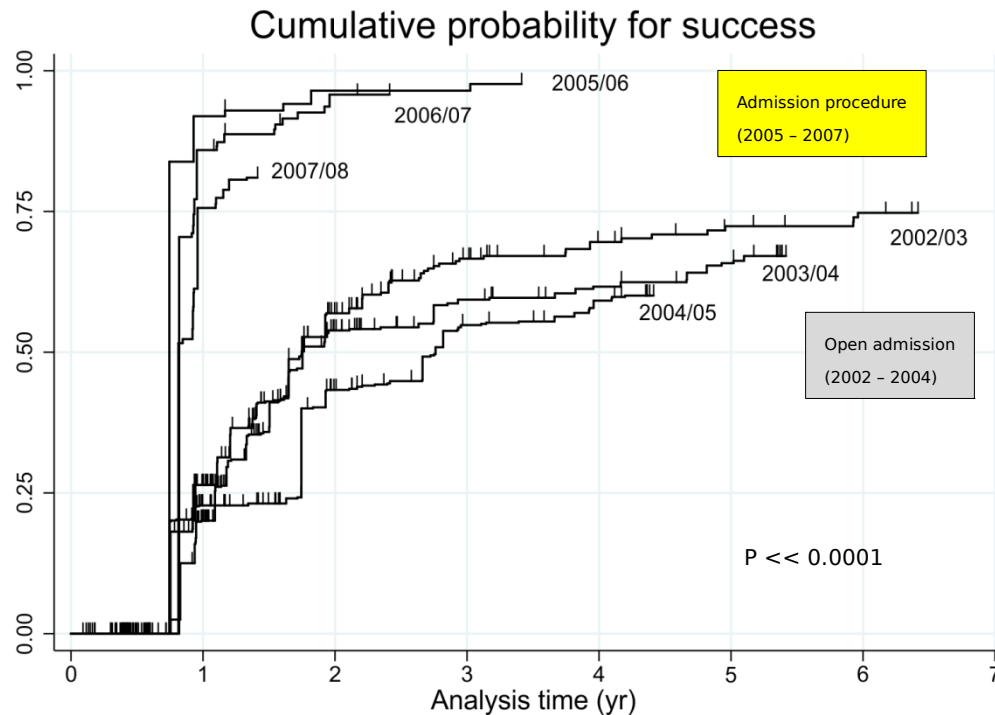
Dropout behavior of openly admitted students grouped by sex and age at study entry (below versus above 20.89 years)





Previous validation of the subtests:

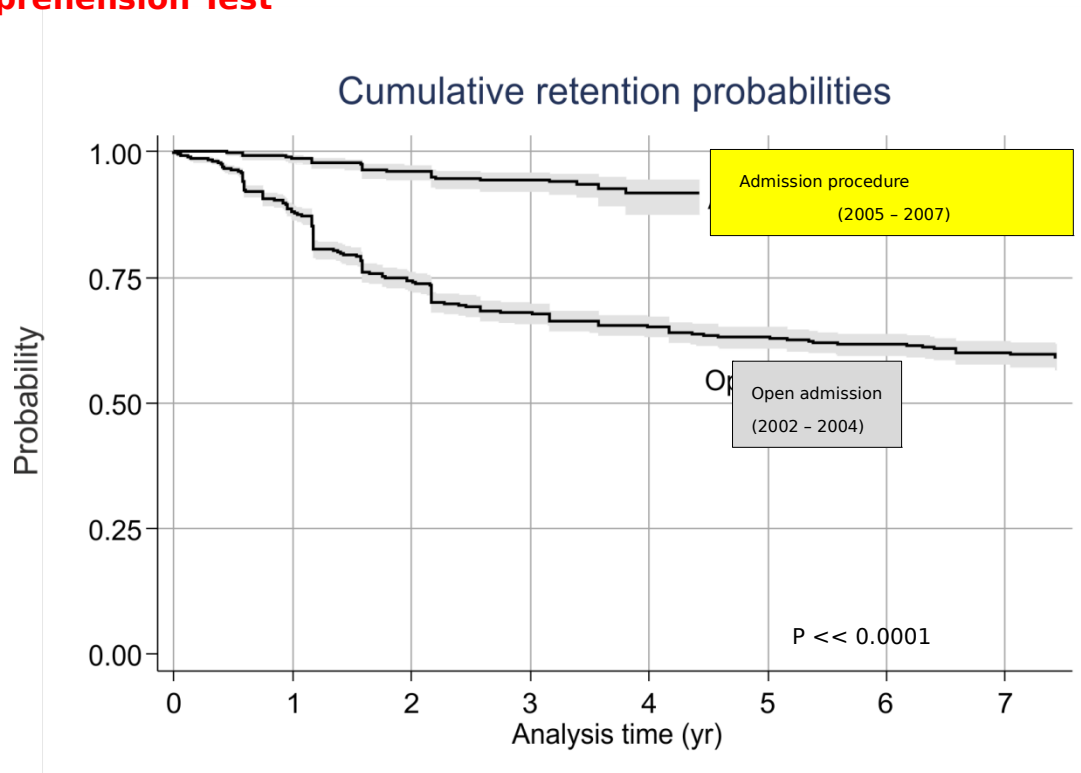
BMS & Text Comprehension Test





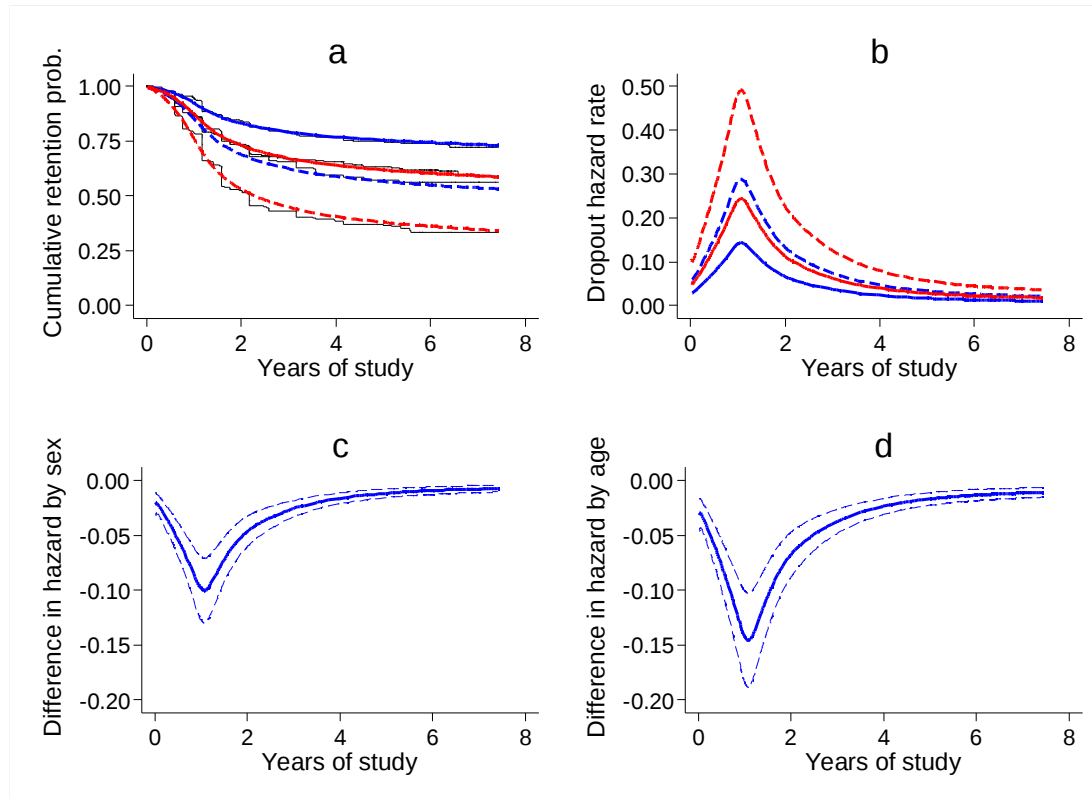
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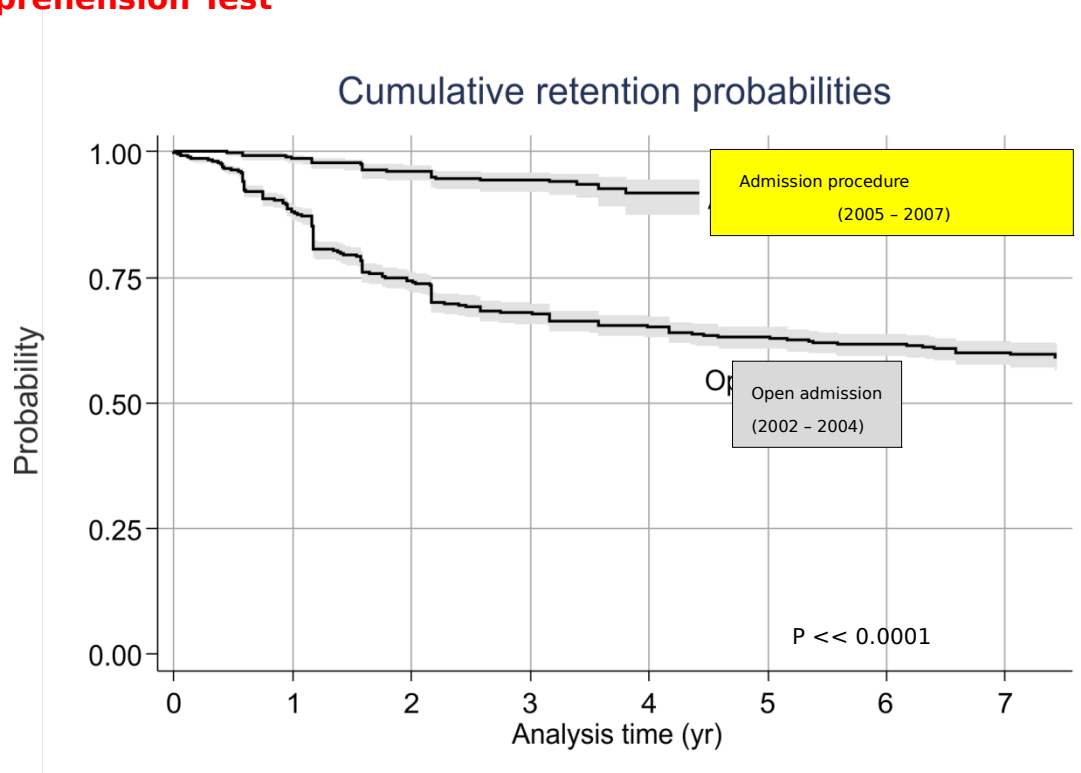
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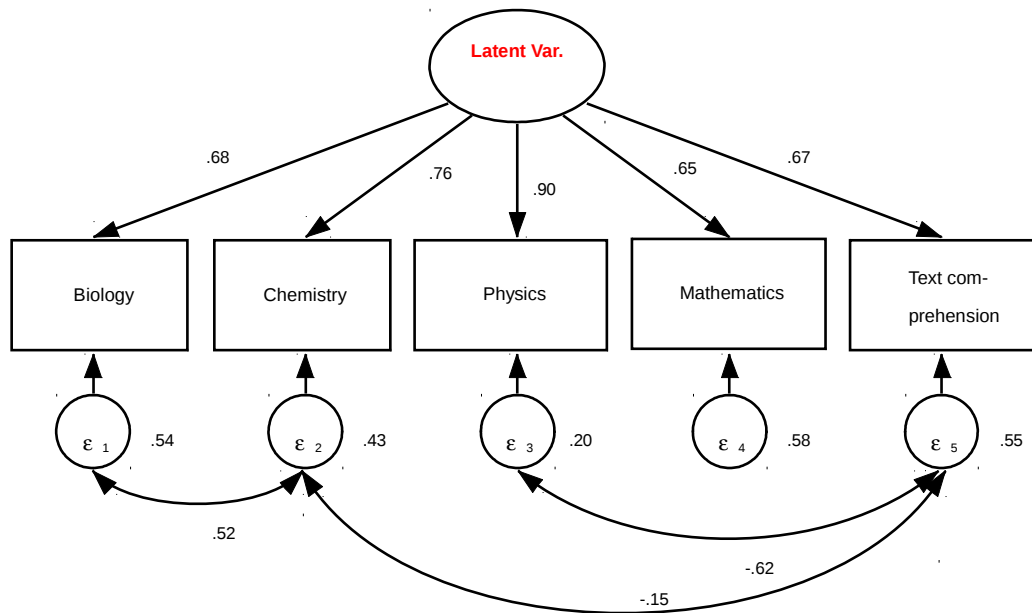
BMS & Text Comprehension Test





Dimensional structure of BMS & Text comprehension test

(4741 Applicants at MUG from 2010 - 2012)



RSMEA = 0.032

CFI = 0.999

N = 4741

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Previous validation of the subtests:

Cognitive abilities

Arendasy M, et al. *Intelligence* 2008; 36: 574 - 583

Arendasy M, et al. *J Cross-Cult Psychol* 2012; 43: 464 - 479



First successful “round” of MedAT-H and MedAT-Z in 2013

- **About 1.5 years of intensive discussion**
- **Delphi process among medical teachers**
- **International Advisory Board**

- **8360 Bewerberinnen und Bewerber**
 - **4515 Wien**
 - **2109 Innsbruck**
 - **1736 Graz**



Subtest	Items	Cronbach α
Figure assembly	22	.60
Number series	26	.75
Memory & retentiveness	20	.70
Mathematical reasoning	14	.64
Biology	50	.88
Chemistry	30	.82
Physics	20	.72
Mathematics	20	.78
Text comprehension	25	.78

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- Intensive analysis and evaluation of results (classical test theory, item response analysis, structural equation modeling)
- Reporting to the Advisory Board
- Recommendations to item authors

- Slight modifications in the cognitive test part



Test Parts MedAT-H 2014		Weight	Time	Items
Cognitive abilities	Figure assembly	40%	20'	75
	Memory & retentiveness - learning phase		8'	
	Number series		20'	
	Memory & retentiveness - Recognition phase		20'	
	Verbal fluency(WF)		20'	
Critical thinking	Recognition of implications	10%	10'	25
	Arguing		10'	
Basic knowledge for Medical Studies (BMS)	Knowledge in biology, chemistry, physics & mathematics at secondary school level	40%	100'	120
Text comprehension		10%	60'	20



Test Parts MedAT-Z 2014		Weight	Time	Items
Cognitive abilities	Figure assembly	30%	20'	75
	Memory & retentiveness - learning phase		8'	
	Number series		20'	
	Memory & retentiveness - Recognition phase		20'	
	Verbal fluency(WF)		20'	
Basic knowledge for Medical Studies (BMS)	Knowledge in biology, chemistry, physics & mathematics at secondary school level	40%	100'	120
Manual abilities	Wire bending	30 %	45'	2
	Mirror drawing		45'	6

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4th July, 2014

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