

Two people riding on a bicycle not built for two

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Question 16 asked for terms for the (illegal) activity of two people riding on a one-seater bicycle. There were only two roots in the vast majority of the answers, *doubl-* and *dub-*. The commonest form for both is the *-ing* form: *Brackie is doubling/dubbing Trindy*. However, other forms occur: *Brackie is giving Trindy a double/dub*; and *doubles/dubs* were also both recorded.

The data pattern was very clearcut: The north of the North Island and the South of the South Island have *doubl-* as the root, while central New Zealand, from Christchurch north to Wanganui and Hawkes Bay have *dub-* as the root. There are areas where both were reported, many of them in transitional regions: Hawkes Bay, and the West Coast (South Island) in particular. Some other areas where both are known can be accounted for by patterns of migration. In particular Auckland shows many schools with mixed forms, although there were no schools in Auckland where only *dub-* was reported. Wellington also has some mixture, and two anomalous reports of *doubl-* only (perhaps accounted for by the fact that in many Wellington schools, very few children knew a term for this at all, due to the terrain and the consequent rarity of bicycles). The south of Southland, where the aluminium smelter brought many migrants, also reported mixed usage. There is one anomalous record of *dub-* in the middle of the Southland / Otago region for which there is no obvious explanation. (However, we know that in another case where there was an anomaly of this type, the reported form was found not to be the norm during school visits, and we suspect the teacher in that case heard what they expected to hear, rather than what the children said; it is possible that some such explanation accounts for the unexpected form here as well.)

It is fairly clear that the *dub-* form is an innovation, but it is certainly not a new one. We know from personal communications that *dub-* forms have been in use in Wellington since at least the late 1920s or early 1930s. It has apparently not yet spread to the furthest reaches of the Central Region: northern Hawkes Bay and the Timaru – Central Lakes area both still largely report the older form *doubling*. The data for *doubl-/dub-* thus provides strong evidence of the basic pattern of regional variation in playground vocabulary in New Zealand uncovered in this study: linguistically, there are three principal regions, Northern, Central and Southern. However, the boundaries in this data, where the Central Region is clearly the innovator suggest a pattern of spread outwards from the main urban centres of the Central Region, one which has not yet reached the far edges of the region.

Comments from School Visits

In several cases where both forms were reported in the original questionnaire, only the expected form was found during school visits. This suggests that the “incomer” who reported it had moved through the system, and the outside term had not caught on. In other cases where both terms were reported, school visits confirmed that the expected term was the majority use, although the other was known. However, in Rotorua, the term *dub* was preferred, rather unexpectedly. In the Northern Hawkes Bay, *doubling* was preferred to *dubbing*, although both

were known, confirming that this innovation has not yet spread to the furthest reaches of the Central Region.

Statistical Analysis

The data for *doubling* and *dubbing* was used as the exemplificatory data in the section detailing the process of statistical analysis undertaken. Thus an extremely detailed analysis of this data can be found there, including all the statistical tables. A brief resume is given here.

The statistical investigations show that Main Region is the dominant factor determining the distribution of *doubling* and *dubbing*, but that the urban / rural factor and decile also play a part.

Doubling

There is more *doubling* in the Northern than the Central Region (p-value 0.0001). There is more *doubling* in the Southern Region than the Central Region (p-value 0.0084). In addition, *doubling* is significantly more likely in low decile schools (p-value 0.0040). *Doubling* is more common in the North Island (p-value 0.0026), but this was shown to be a consequence of the Main Region distribution. *Doubling* is more likely in non-Catholic schools (p-value 0.0033). Furthermore, *doubling* is more likely in rural schools (p-value 0.0028).

Dubbing

There is more *dubbing* in the Central area than the Northern (p-value 0.0001), and more *dubbing* in the Central area than the Southern (0.0018). *Dubbing* is significantly more likely in high decile schools (p-value 0.0287).

Dubbing is more common in the South Island (0.0363). However, this was shown to be the result of the Main Region distribution.

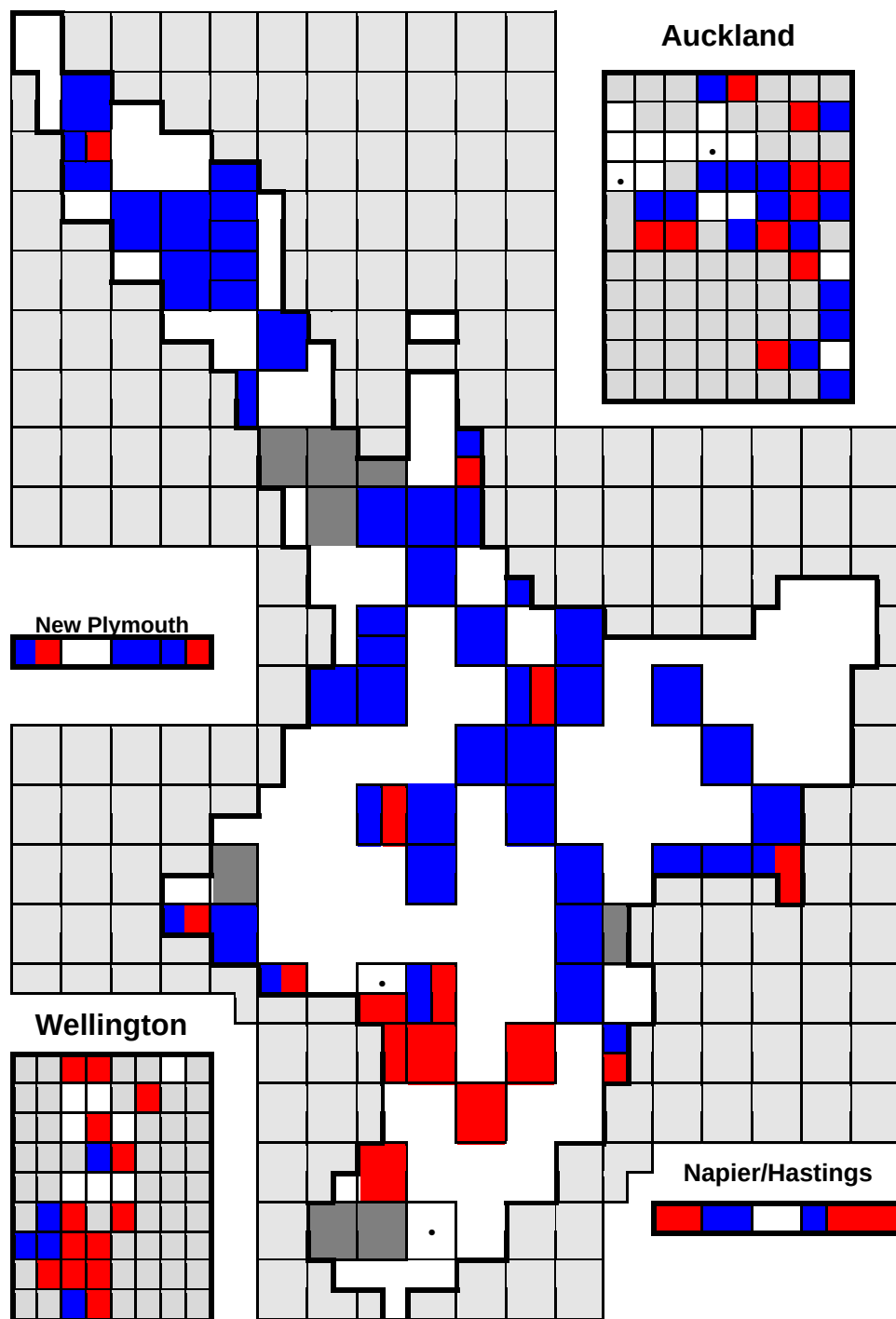
Dubbing is more likely in Catholic schools (0.0122) and in urban schools (0.0044).

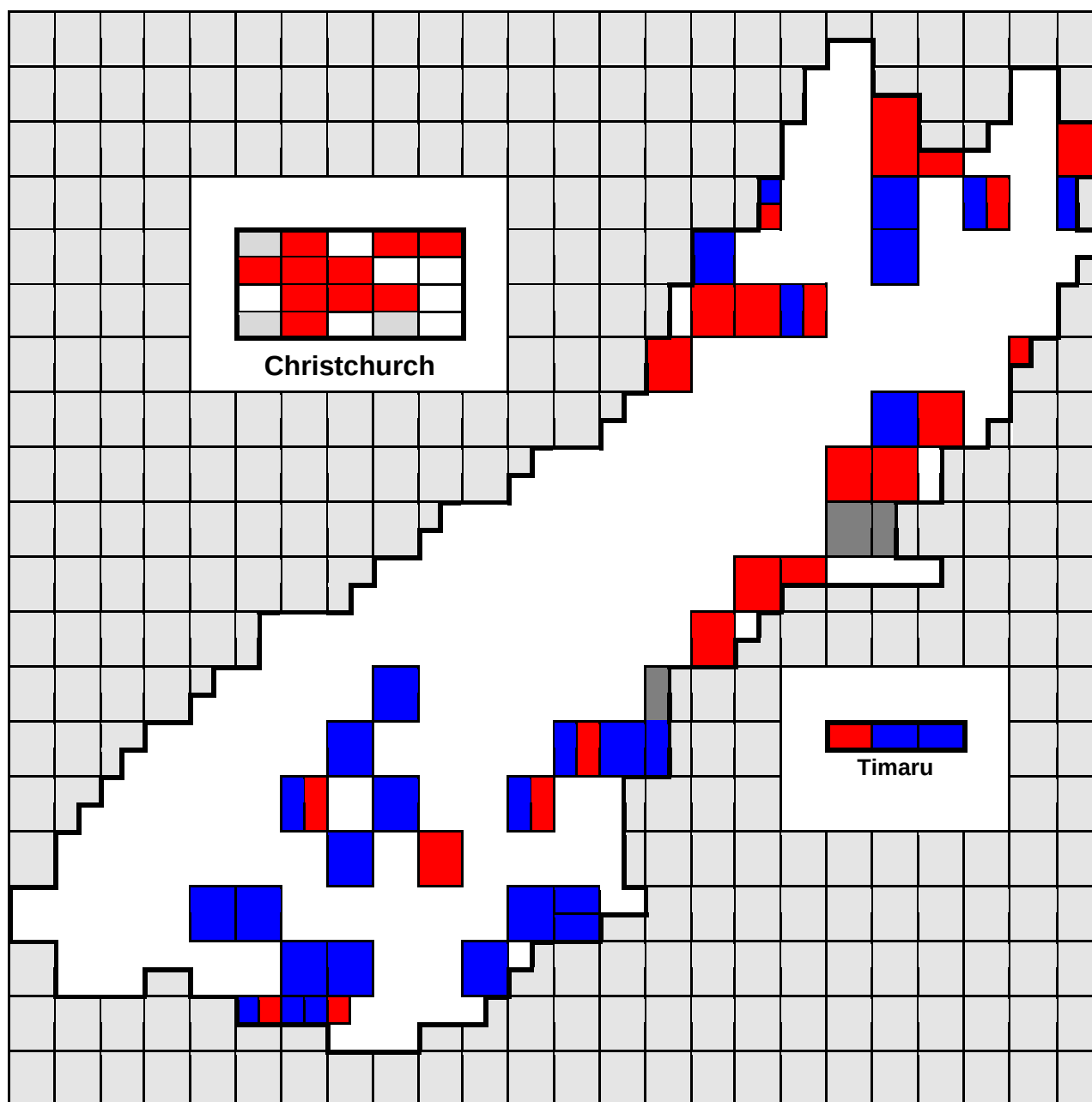
Summary

Main Region, Urban / Rural, Catholicity and Decile are all important factors in accounting for the distribution of these forms, in that order. The details about the interactions which led to these conclusions are in the section about the Statistical Analysis.

Doubling is the Northern and Southern form, and *dubbing* the Central form.

Map: Doubling vs. Dubbing





Key

Note that the insets are not to scale, nor all on the same scale for practical reasons. Each box represents one school in both urban and rural areas.

Forms with root *doubl-*

See urban map insert

Forms with root *dub-*

• No relevant data

Q16 Statistics: Doubling**Doubling by Decile**

Analysis Of GEE Parameter Estimates – Empirical Standard Error Estimates

Empirical 95% Confidence Limits

parameter		Estimate	StdErr	Lower	Upper	Z	Pr> Z
intercept	0.0000	.	.	.	.	.	
item	doubling	1.7518	0.4262	0.9164	2.5872	4.1098	0.0000
item	dubbing	-0.8002	0.3711	-1.5276	-0.0728	-2.156	0.0311
decile*item	doubling	-0.1814	0.0631	-0.3049	-0.0578	-2.876	0.0040
decile*item	dubbing	0.1290	0.0590	0.0134	0.2446	2.1875	0.0287
scale	0.9994	.	.	.	.	.	

Doubling by Main Region

Analysis Of GEE Parameter Estimates – Empirical Standard Error Estimates

Empirical 95% Confidence Limits

parameter		Est.	Std Err	Lower	Upper	Z	Pr> Z
intercept	0.0000	.	.	.	.	.	
item	doubling	1.7918	0.7638	0.2948	3.2887	2.3460	0.0190
item	dubbing	-1.2993	0.6513	-2.5759	-0.0227	-1.995	0.0461
item*region1	doubling, 1	0.7922	0.9231	-1.0171	2.6016	0.8582	0.3908
item*region1	doubling, 2	-2.1019	0.7974	-3.6648	-0.5390	-2.636	0.0084
item*region1	doubling, 3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
item*region1	dubbing, 1	0.1771	0.7204	-1.2348	1.5890	0.2459	0.8058
item*region1	dubbing, 2	2.1711	0.6971	0.8049	3.5373	3.1147	0.0018
item*region1	dubbing, 3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
scale	1.0000	.	.	.	.	.	

CONTRAST Statement Results

Contrast	DF	ChiSquare	Pr>Chi	Type
1 –2 for doubling	1	41.6341	0.0001	LR
1 –2 for dubbing	1	28.9248	0.0001	LR

Doubling by Sub-Region

Analysis Of Initial Parameter Estimates

parameter		DF	Estimate	Std Err	ChiSquare	Pr>Chi
intercept	0	0.00	0.0000	.	.	
item	doubling	1	1.7918	0.7638	5.5035	0.0190
item	dubbing	1	-1.2993	0.6513	3.9792	0.0461
item*region2	doubling, 1	1	23.5736	131502.510	0.0000	0.9999
item*region2	doubling, 2	1	23.5736	131502.511	0.0000	0.9999
item*region2	doubling, 3	1	0.3483	1.0687	0.1062	0.7445
item*region2	doubling, 4	1	0.6931	1.0607	0.4271	0.5134
item*region2	doubling, 5	1	-0.1823	1.0878	0.0281	0.8669
item*region2	doubling, 6	1	-2.7726	0.9014	9.4612	0.0021
item*region2	doubling, 7	1	-2.0149	1.0165	3.9289	0.0475
item*region2	doubling, 8	1	-1.7918	1.1180	2.5683	0.1090
item*region2	doubling, 9	1	-4.6250	1.2815	13.0258	0.0003
item*region2	doubling, 10	1	0.4055	1.3017	0.0970	0.7554
item*region2	doubling, 11	0	0.0000	0.0000	.	.
item*region2	dubbing, 1	1	-0.3102	1.2745	0.0592	0.8077
item*region2	dubbing, 2	1	-24.0660	131502.576	0.0000	0.9999
item*region2	dubbing, 3	1	0.9808	0.8001	1.5028	0.2202
item*region2	dubbing, 4	1	-0.1358	0.8197	0.0274	0.8684
item*region2	dubbing, 5	1	0.9628	0.8758	1.2085	0.2716
item*region2	dubbing, 6	1	2.8034	0.8543	10.7685	0.0010
item*region2	dubbing, 7	1	1.9924	0.9614	4.2952	0.0382
item*region2	dubbing, 8	1	2.9087	1.2745	5.2090	0.0225
item*region2	dubbing, 9	1	4.1325	1.2178	11.5150	0.0007
item*region2	dubbing, 10	1	0.4520	0.9489	0.2269	0.6338
item*region2	dubbing, 11	0	0.0000	0.0000	.	.
scale	0	1.00	0.0000	.	.	

CONTRAST Statement Results

Contrast	DF	ChiSquare	Pr>Chi	Type
1 -2 for doubling	1	-0.0000	.	LR
4 -5 for doubling	1	0.6584	0.4171	LR
4 -6 for doubling	1	23.6263	0.0001	LR
6 -7 for doubling	1	0.8383	0.3599	LR
7 -8 for doubling	1	0.0446	0.8327	LR
9 -10 for doubling	1	22.2726	0.0001	LR
4 -5 for dubbing	1	2.0441	0.1528	LR
4 -6 for dubbing	1	20.1399	0.0001	LR
9 -10 for dubbing	1	13.5617	0.0002	LR

Doubling by Island

Analysis Of GEE Parameter Estimates – Empirical Standard Error Estimates

Empirical 95% Confidence Limits

parameter		Estimate	Std Err	Lower	Upper	Z	Pr> Z
intercept	0.0000	.	.	.	.		
item	doubling	0.0351	0.2649	-0.4842	0.5544	0.1324	0.8946
item	dubbing	0.3909	0.2700	-0.1383	0.9200	1.4478	0.1477
item*island	doubling, 1	1.0779	0.3577	0.3768	1.7790	3.0133	0.0026
item*island	doubling, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
item*island	dubbing, 1	-0.7163	0.3421	-1.3868	-0.0457	-2.094	0.0363
item*island	dubbing, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
scale	1.0000	.	.	.	.	.	

Doubling by Catholic

Analysis Of GEE Parameter Estimates – Empirical Standard Error Estimates

Empirical 95% Confidence Limits

parameter		Est.	Std Err	Lower	Upper	Z	Pr> Z
intercept	0.0000	.	.	.	.	.	
item	doubling	-0.7885	0.5394	-1.8456	0.2687	-1.462	0.1438
item	dubbing	1.4663	0.6405	0.2110	2.7217	2.2893	0.0221
item*catholic	doubling, 1	1.6835	0.5727	0.5610	2.8059	2.9396	0.0033
item*catholic	doubling, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
item*catholic	dubbing, 1	-1.6655	0.6641	-2.9672	-0.3638	-2.508	0.0122
item*catholic	dubbing, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
scale	1.0000	.	.	.	.	.	

Doubling by Urban/Rural

Analysis Of GEE Parameter Estimates – Empirical Standard Error Estimates

Empirical 95% Confidence Limits

parameter		Est.	Std Err	Lower	Upper	Z	Pr> Z
intercept	0.0000	.	.	.	.	.	
item	doubling	0.1018	0.2607	-0.4092	0.6128	0.3904	0.6962
item	dubbing	0.5199	0.2692	-0.0078	1.0475	1.9310	0.0535
item*urb_rur	doubling, 1	1.0921	0.3649	0.3770	1.8073	2.9933	0.0028
item*urb_rur	doubling, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
item*urb_rur	dubbing, 1	-0.9937	0.3488	-1.6773	-0.3100	-2.849	0.0044
item*urb_rur	dubbing, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
scale	1.0000	.	.	.	.	.	

Doubling by Decile and Main Region, Model 1

Analysis Of GEE Parameter Estimates – Empirical Standard Error Estimates

Empirical 95% Confidence Limits

parameter		Est.	Std Err	Lower	Upper	Z	Pr> Z
intercept	0.0000	.	.	.	.	.	
item	doubling	4.0359	2.8413	-1.5329	9.6048	1.4205	0.1555
item	dubbing	1.3303	1.6514	-1.9063	4.5669	0.8056	0.4205
item*region1	doubling, 1	-0.7822	3.1379	-6.9323	5.3680	-.2493	0.8032
item*region1	doubling, 2	-3.8693	2.9043	-9.5616	1.8229	-1.332	0.1828
item*region1	doubling, 3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
item*region1	dubbing, 1	-3.3773	1.7641	-6.8348	0.0803	-1.914	0.0556
item*region1	dubbing, 2	-1.0205	1.7838	-4.5167	2.4758	-.5721	0.5673
item*region1	dubbing, 3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
decile*item	doubling	-0.3463	0.3549	-1.0419	0.3494	-.9755	0.3293
decile*item	dubbing	-0.5724	0.2854	-1.1317	-0.0131	-2.006	0.0449
dec*itm*rg1	doubling, 1	0.2188	0.4141	-0.5928	1.0305	0.5284	0.5972
dec*itm*rg1	doubling, 2	0.2717	0.3658	-0.4452	0.9886	0.7428	0.4576
dec*itm*rg1	doubling, 3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
dec*itm*rg1	dubbing, 1	0.7497	0.3028	0.1562	1.3432	2.4756	0.0133
dec*itm*rg1	dubbing, 2	0.6614	0.3036	0.0664	1.2565	2.1785	0.0294
dec*itm*rg1	dubbing, 3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
scale	0.9920	.	.	.	.	.	

Doubling by Decile in Northern Region

Analysis Of GEE Parameter Estimates – Empirical Standard Error Estimates

Empirical 95% Confidence Limits

parameter		Estimate	Std Err	Lower	Upper	Z	Pr> Z
intercept	0.0000	.	.	.	.	.	
item	doubling	3.2364	1.3240	0.6413	5.8315	2.4444	0.0145
item	dubbing	-2.0348	0.6207	-3.2514	-0.8182	-3.278	0.0010
decile*item	doubling	-0.1232	0.2128	-0.5403	0.2940	-.5787	0.5628
decile*item	dubbing	0.1746	0.1018	-0.0249	0.3740	1.7155	0.0862
scale	0.9960	.	.	.	.	.	

Doubling by Decile in Central Region

Analysis Of GEE Parameter Estimates – Empirical Standard Error Estimates

Empirical 95% Confidence Limits

parameter		Estimate	Std Err	Lower	Upper	Z	Pr> Z
intercept	0.0000	.	.	.	.	.	
item	doubling	0.1845	0.6009	-0.9932	1.3622	0.3071	0.7588
item	dubbing	0.2986	0.6750	-1.0244	1.6216	0.4423	0.6582
decile*item	doubling	-0.0774	0.0883	-0.2504	0.0956	-.8773	0.3803
decile*item	dubbing	0.0909	0.1038	-0.1126	0.2943	0.8752	0.3815
scale	1.0025	.	.	.	.	.	

Doubling by Decile in Southern Region

Analysis Of GEE Parameter Estimates – Empirical Standard Error Estimates

Empirical 95% Confidence Limits

parameter		Estimate	Std Err	Lower	Upper	Z	Pr> Z
intercept	0.0000	.	.	.	.	.	
item	doubling	4.3142	3.2268	-2.0102	10.6386	1.3370	0.1812
item	dubbing	1.2788	1.7863	-2.2223	4.7799	0.7159	0.4741
decile*item	doubling	-0.3873	0.4032	-1.1774	0.4029	-.9605	0.3368
decile*item	dubbing	-0.5708	0.3058	-1.1701	0.0286	-1.867	0.0620
scale	0.9331	.	.	.	.	.	

Doubling by Decile and Main Region, Model 2

Analysis Of GEE Parameter Estimates – Empirical Standard Error Estimates

Empirical 95% Confidence Limits

parameter		Est.	Std Err	Lower	Upper	Z	Pr> Z
intercept	0.0000	.	.	.	.	.	
item	doubling	2.3664	0.8449	0.7105	4.0223	2.8010	0.0051
item	dubbing	-1.7091	0.9010	-3.4750	0.0567	-1.897	0.0578
decile*item	doubling	-0.1004	0.0759	-0.2492	0.0483	-1.323	0.1858
decile*item	dubbing	0.0717	0.0738	-0.0729	0.2163	0.9718	0.3312
item*region1	doubling, 1	0.7544	0.9062	-1.0218	2.5305	0.8324	0.4052
item*region1	doubling, 2	-2.0334	0.7753	-3.5529	-0.5139	-2.623	0.0087
item*region1	doubling, 3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
item*region1	dubbing, 1	0.2235	0.7669	-1.2796	1.7266	0.2914	0.7707
item*region1	dubbing, 2	2.1259	0.7228	0.7093	3.5425	2.9413	0.0033
item*region1	dubbing, 3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
scale	0.9999	.	.	.	.	.	

CONTRAST Statement Results

Contrast	DF	ChiSquare	Pr>Chi	Type
1 –2 for doubling	1	36.1104	0.0001	LR
1 –2 for dubbing	1	24.6990	0.0001	LR

Doubling by Island and Main Region, Model 2 (no sig. figs. Model 1)

Analysis Of GEE Parameter Estimates – Empirical 95% Confidence Limits

parameter		Estimate	Std Err	Lower	Upper	Z	Pr> Z
intercept	0.0000	.	.	.	.	.	
item	doubling	1.7918	0.7638	0.2948	3.2887	2.3460	0.0190
item	dubbing	-1.2993	0.6513	-2.5759	-0.0227	-1.995	0.0461
item*reg1	doubling, 1	0.5392	1.0318	-1.4831	2.5615	0.5226	0.6013
item*reg1	doubling, 2	-2.2166	0.8250	-3.8336	-0.5997	-2.687	0.0072
item*reg1	doubling, 3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
item*reg1	dubbing, 1	0.3461	0.8758	-1.3706	2.0627	0.3951	0.6928
item*reg1	dubbing, 2	2.2484	0.7347	0.8083	3.6884	3.0601	0.0022
item*reg1	dubbing, 3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
item*island	doubling, 1	0.2530	0.4609	-0.6503	1.1564	0.5490	0.5830
item*island	doubling, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
item*island	dubbing, 1	-0.1689	0.4982	-1.1453	0.8075	-.3391	0.7345
item*island	dubbing, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
scale	1.0000	.	.	.	.	.	

CONTRAST Statement Results

Contrast	DF	ChiSquare	Pr>Chi	Type
1 -2 for doubling	1	26.2403	0.0001	LR
1 -2 for dubbing	1	17.6172	0.0001	LR

Doubling by Catholic and Main Region, Model 2

parameter		Estimate	Std Err	Lower	Upper	Z	Pr> Z
intercept	0.0000	.	.	.	.	.	
item	doubling	0.9670	1.3217	-1.6235	3.5576	0.1847	0.8535
item	dubbing	0.1756	0.9509	-1.6882	2.0394	0.2201	0.8258
item*reg1	doubling, 1	0.2526	1.1480	-1.9974	2.5026	-2.408	0.0160
item*reg1	doubling, 2	-2.5754	1.0696	-4.6717	-0.4791	0.0129	0.9897
item*reg1	doubling, 3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
item*reg1	dubbing, 1	0.0095	0.7321	-1.4254	1.4443	2.6782	0.0074
item*reg1	dubbing, 2	0.7316	0.4644	1.8947	0.7074	0.5081	3.2813
item*reg1	dubbing, 3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
item*cath	doubling, 1	1.5179	0.8147	-0.0788	3.1146	1.8632	0.0624
item*cath	doubling, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
item*cath	dubbing, 1	-1.3796	0.6862	-2.7246	-0.0346	-2.010	0.0444
item*cath	dubbing, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
scale	0.9786	.	.	.	.	.	

CONTRAST Statement Results

Contrast	DF	ChiSquare	Pr>Chi	Type
1 -2 for doubling	1	37.6560	0.0001	LR
1 -2 for dubbing	1	25.2834	0.0001	LR

Doubling by Urban/Rural and Main Region, Model 2 (no sig. figs. Model 1)

parameter		Est	Std Err	Lower	Upper	Z	Pr> Z
intercept	0.0000	.	.	.	.	.	
item	doubling	1.0418	0.8174	-0.5603	2.6439	1.2745	0.2025
item	dubbing	-0.5957	0.7146	-1.9963	0.8049	-.8336	0.4045
item*region1	doubling, 1	0.9357	0.9614	-0.9487	2.8201	0.9732	0.3305
item*region1	doubling, 2	-1.9805	0.8246	-3.5967	-0.3643	-2.402	0.0163
item*region1	doubling, 3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
item*region1	dubbing, 1	0.0920	0.7513	-1.3804	1.5644	0.1224	0.9026
item*region1	dubbing, 2	2.0979	0.7322	0.6629	3.5330	2.8653	0.0042
item*region1	dubbing, 3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
item*urb_rur	doubling, 1	1.1841	0.4218	0.3575	2.0108	2.8075	0.0050
item*urb_rur	doubling, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
item*urb_rur	dubbing, 1	-1.0742	0.4060	-1.8701	-0.2784	-2.646	0.0082
item*urb_rur	dubbing, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
scale	1.0163	.	.	.	.	.	

CONTRAST Statement Results

Contrast	DF	ChiSquare	Pr>Chi	Type
1 -2 for doubling	1	38.2918	0.0001	LR
1 -2 for dubbing	1	26.2947	0.0001	LR

Doubling by Urban/Rural and Island, Model 2 (no sig. figs. Model 1)

Analysis Of GEE Parameter Estimates – Empirical Standard Error Estimates

Empirical 95% Confidence Limits

parameter		Est	Std Err	Lower	Upper	Z	Pr> Z
intercept	0.0000	.	.	.	.	.	
item	doubling	-0.8009	0.3778	-1.5414	-0.0605	-2.120	0.0340
item	dubbing	1.1483	0.3937	0.3766	1.9199	2.9166	0.0035
item*urb_rur	doubling, 1	1.3331	0.3928	0.5633	2.1029	3.3941	0.0007
item*urb_rur	doubling, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
item*urb_rur	dubbing, 1	-1.1303	0.3675	-1.8506	-0.4101	-3.076	0.0021
item*urb_rur	dubbing, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
item*island	doubling, 1	1.3177	0.3974	0.5387	2.0966	3.3155	0.0009
item*island	doubling, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
item*island	dubbing, 1	-0.8818	0.3702	-1.6074	-0.1562	-2.382	0.0172
item*island	dubbing, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
scale	1.0064	.	.	.	.	.	

Doubling by Urban/Rural and Decile, Model 2 (no sig. figs. Model 1)

Analysis Of GEE Parameter Estimates – Empirical Standard Error Estimates

Empirical 95% Confidence Limits

parameter		Est.	Std Err	Lower	Upper	Z	Pr> Z
intercept	0.0000	.	.	.	.	.	
item	doubling	1.1388	0.5104	0.1385	2.1390	2.2313	0.0257
item	dubbing	-0.1775	0.4659	-1.0906	0.7356	-.3810	0.7032
decile*item	doubling	-0.1581	0.0654	-0.2863	-0.0299	-2.416	0.0157
decile*item	dubbing	0.1088	0.0611	-0.0109	0.2285	1.7816	0.0748
item*urb_rur	doubling, 1	0.9168	0.3782	0.1755	1.6580	2.4240	0.0154
item*urb_rur	doubling, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
item*urb_rur	dubbing, 1	-0.8667	0.3545	-1.5614	-0.1719	-2.445	0.0145
item*urb_rur	dubbing, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
scale	0.9926	.	.	.	.	.	

Doubling by Catholic and Decile, Model 2 (no sig. figs. Model 1)

Analysis Of GEE Parameter Estimates – Empirical 95% Confidence Limits

parameter		Est.	Std Err	Lower	Upper	Z	Pr> Z
intercept	0.0000	.	.	.	.	.	
item	doubling	0.1709	0.7004	-1.2019	1.5437	0.2440	0.8073
item	dubbing	0.7252	0.7523	-0.7493	2.1997	0.9640	0.3351
decile*item	doubling	-0.1451	0.0658	-0.2740	-0.0162	-2.206	0.0274
decile*item	dubbing	0.1125	0.0603	-0.0057	0.2307	1.8660	0.0620
item*catholic	doubling, 1	1.5750	0.5777	0.4426	2.7073	2.7261	0.0064
item*catholic	doubling, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
item*catholic	dubbing, 1	-1.5626	0.6737	-2.8830	-0.2423	-2.320	0.0204
item*catholic	dubbing, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
scale	0.9994	.	.	.	.	.	

Doubling by Catholic and Island, Model 2

Analysis Of GEE Parameter Estimates – Empirical 95% Confidence Limits

parameter		Est.	Std Err	Lower	Upper	Z	Pr> Z
intercept	0.0000	.	.	.	.	.	
item	doubling	-1.4733	0.5854	-2.6206	-0.3259	-2.517	0.0118
item	dubbing	1.9512	0.7045	0.5704	3.3320	2.7696	0.0056
item*island	doubling, 1	1.1096	0.3750	0.3745	1.8447	2.9586	0.0031
item*island	doubling, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
item*island	dubbing, 1	-0.7768	0.3557	-1.4739	-0.0797	-2.184	0.0289
item*island	dubbing, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
item*catholic	doubling, 1	1.7327	0.5761	0.6035	2.8619	3.0074	0.0026
item*catholic	doubling, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
item*catholic	dubbing, 1	-1.6707	0.6796	-3.0027	-0.3388	-2.458	0.0140
item*catholic	dubbing, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
scale	1.0010	.	.	.	.	.	

Doubling by Catholic and Urban/Rural, Model 2

Analysis Of GEE Parameter Estimates – Empirical Standard Error Estimates

Empirical 95% Confidence Limits

parameter		Est.	Std Err	Lower	Upper	Z	Pr> Z
intercept	0.0000	.	.	.	.	.	
item	doubling	-1.1061	0.5844	-2.2516	0.0394	-1.893	0.0584
item	dubbing	1.8134	0.6902	0.4607	3.1661	2.6275	0.0086
item*catholic	doubling, 1	1.5306	0.6021	0.3505	2.7107	2.5420	0.0110
item*catholic	doubling, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
item*catholic	dubbing, 1	-1.4498	0.6883	-2.7987	-0.1009	-2.107	0.0352
item*catholic	dubbing, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
item*urb_rur	doubling, 1	0.8886	0.3848	0.1345	1.6427	2.3094	0.0209
item*urb_rur	doubling, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
item*urb_rur	dubbing, 1	-0.9234	0.3643	-1.6374	-0.2094	-2.535	0.0112
item*urb_rur	dubbing, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
scale	1.0020	.	.	.	.	.	

Doubling by Island and Decile, Model 1

Analysis Of GEE Parameter Estimates – Empirical Standard Error Estimates

Empirical 95% Confidence Limits

parameter		Est.	Std Err	Lower	Upper	Z	Pr> Z
intercept	0.0000	.	.	.	.	.	
item	doubling	0.3680	0.7558	-1.1134	1.8494	0.4869	0.6263
item	dubbing	1.2295	0.8586	-0.4533	2.9122	1.4320	0.1521
item*island	doubling, 1	1.9650	0.9674	0.0688	3.8611	2.0311	0.0422
item*island	doubling, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
item*island	dubbing, 1	-2.7425	0.9682	-4.6401	-0.8449	-2.833	0.0046
item*island	dubbing, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
decile*item	doubling	-0.0511	0.1087	-0.2641	0.1619	-0.4702	0.6382
decile*item	dubbing	-0.1271	0.1211	-0.3644	0.1102	-1.049	0.2940
dec*item*is	doubling, 1	-0.1625	0.1406	-0.4380	0.1131	-1.156	0.2478
dec*item*is	doubling, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
dec*item*is	dubbing, 1	0.3456	0.1420	0.0674	0.6239	2.4348	0.0149
dec*item*is	dubbing, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
scale	0.9995	.	.	.	.	.	

Doubling by Island and Decile, Model 2

Analysis Of GEE Parameter Estimates – Empirical Standard Error Estimates

Empirical 95% Confidence Limits

parameter	Estimate	Std	Err	Lower	Upper	Z	Pr> Z
intercept	0.0000	.	.	.	.	.	
item	doubling	1.0704	0.5199	0.0515	2.0893	2.0590	0.0395
item	dubbing	-0.3216	0.4662	-1.2353	0.5921	-0.6899	0.4903
item*island	doubling, 1	0.9596	0.3716	0.2312	1.6880	2.5822	0.0098
item*island	doubling, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
item*island	dubbing, 1	-0.6001	0.3557	-1.2972	0.0971	-1.687	0.0916
item*island	dubbing, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
decile*item	doubling	-0.1596	0.0671	-0.2911	-0.0282	-2.380	0.0173
decile*item	dubbing	0.1104	0.0606	-0.0084	0.2291	1.8214	0.0685
scale	1.0004	.	.	.	.	.	

Doubling by Decile in North Island

Analysis Of GEE Parameter Estimates – Empirical Standard Error Estimates

Empirical 95% Confidence Limits

parameter		Est.	Std Err	Lower	Upper	Z	Pr> Z
intercept	0.0000	.	.	.	.	.	
item	doubling	2.3094	0.5992	1.1351	3.4838	3.8544	0.0001
item	dubbing	-1.4982	0.4463	-2.3729	-0.6236	-3.357	0.0008
decile*item	doubling	-0.2094	0.0886	-0.3830	-0.0357	-2.364	0.0181
decile*item	dubbing	0.2158	0.0741	0.0707	0.3610	2.9148	0.0036
scale	0.9976	.	.	.	.	.	

Doubling by Decile in South Island

Analysis Of GEE Parameter Estimates – Empirical Standard Error Estimates

Empirical 95% Confidence Limits

parameter		Est.	Std Err	Lower	Upper	Z	Pr> Z
intercept	0.0000	.	.	.	.	.	
item	doubling	0.3687	0.7572	-1.1155	1.8528	0.4869	0.6263
item	dubbing	1.2240	0.8479	-0.4379	2.8858	1.4435	0.1489
decile*item	doubling	-0.0513	0.1089	-0.2646	0.1621	-.4709	0.6377
decile*item	dubbing	-0.1262	0.1197	-0.3608	0.1084	-1.054	0.2918
scale	1.0003	.	.	.	.	.	

Basic Statistics when “Special” Schools are eliminated Doubling by Decile (excluding Special Schools)

Analysis Of GEE Parameter Estimates – Empirical Standard Error Estimates
Empirical 95% Confidence Limits

parameter		Estimate	Std Err	Lower	Upper	Z	Pr> Z
intercept	0.0000	.	.	.	.	.	
item	doubling	1.5866	0.4416	0.7211	2.4522	3.5930	0.0003
item	dubbing	-0.8637	0.3953	-1.6385	-0.0888	-2.185	0.0289
decile*item	doubling	-0.1667	0.0665	-0.2969	-0.0364	-2.508	0.0121
decile*item	dubbing	0.1342	0.0632	0.0104	0.2580	2.1254	0.0336
scale	0.9995	.	.	.	.	.	

Doubling by Main Region (excluding Special Schools)

Analysis Of GEE Parameter Estimates – Empirical Standard Error Estimates
Empirical 95% Confidence Limits

parameter		Est.	Std Err	Lower	Upper	Z	Pr> Z
intercept	0.0000	.	.	.	.	.	
item	doubling	1.7918	0.7638	0.2948	3.2887	2.3460	0.0190
item	dubbing	-1.2993	0.6513	-2.5759	-0.0227	-1.995	0.0461
item*reg1	doubling, 1	0.6286	0.9250	-1.1843	2.4415	0.6796	0.4968
item*reg1	doubling, 2	-2.1190	0.7993	-3.6855	-0.5524	-2.651	0.0080
item*reg1	doubling, 3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
item*reg1	dubbing, 1	-0.0617	0.7415	-1.5151	1.3917	-.0832	0.9337
item*reg1	dubbing, 2	2.1595	0.6992	0.7890	3.5300	3.0884	0.0020
item*reg1	dubbing, 3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
scale	1.0000	.	.	.	.	.	

Doubling by Island (excluding Special Schools)

Analysis Of GEE Parameter Estimates – Empirical Standard Error Estimates
Empirical 95% Confidence Limits

parameter		Estimate	Std Err	Lower	Upper	Z	Pr> Z
intercept	0.0000	.	.	.	.	.	
item	doubling	0.0351	0.2649	-0.4842	0.5544	0.1324	0.8946
item	dubbing	0.3909	0.2700	-0.1383	0.9200	1.4478	0.1477
item*island	doubling, 1	1.0147	0.3667	0.2960	1.7335	2.7671	0.0057
item*island	doubling, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
item*island	dubbing, 1	-0.8170	0.3529	-1.5086	-0.1253	-2.315	0.0206
item*island	dubbing, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
scale	1.0000	.	.	.	.	.	

Doubling by Catholic (excluding Special Schools)

Analysis Of GEE Parameter Estimates – Empirical Standard Error Estimates

Empirical 95% Confidence Limits

parameter		Estimate	Std Err	Lower	Upper	Z	Pr> Z
intercept	0.0000	.	.	.	.	.	
item	doubling	-1.0116	0.5839	-2.1560	0.1328	-1.733	0.0832
item	dubbing	1.3863	0.6455	0.1211	2.6514	2.1476	0.0317
item*cath	doubling, 1	1.8589	0.6169	0.6498	3.0680	3.0132	0.0026
item*cath	doubling, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
item*cath	dubbing, 1	-1.6207	0.6712	-2.9362	-0.3052	-2.415	0.0157
item*cath	dubbing, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
scale	1.0000	.	.	.	.	.	

Doubling by Urban/Rural (excluding Special Schools)

Analysis Of GEE Parameter Estimates – Empirical Standard Error Estimates

Empirical 95% Confidence Limits

parameter		Estimate	Std Err	Lower	Upper	Z	Pr> Z
intercept	0.0000	.	.	.	.	.	
item	doubling	-0.1178	0.2805	-0.6676	0.4321	-.4198	0.6746
item	dubbing	0.4383	0.2868	-0.1239	1.0004	1.5281	0.1265
item*u/r	doubling, 1	1.3165	0.3837	0.5645	2.0685	3.4312	0.0006
item*u/r	doubling, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
item*u/r	dubbing, 1	-0.8845	0.3654	-1.6007	-0.1684	-2.421	0.0155
item*u/r	dubbing, 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
scale	1.0000	.	.	.	.	.	

Doubling by Sub-Region (excluding Special Schools)

Analysis Of Initial Parameter Estimates

parameter		DF	Estimate	Std Err	ChiSquare	Pr>Chi
intercept	0	0.00	0.0000	.	.	
item	doubling	1	1.7918	0.7638	5.5035	0.0190
item	dubbing	1	-1.2993	0.6513	3.9792	0.0461
item*region2	doubling, 1	1	23.5736	161057.024	0.0000	0.9999
item*region2	doubling, 2	1	23.5736	144053.782	0.0000	0.9999
item*region2	doubling, 3	1	-0.0000	1.0801	0.0000	1.0000
item*region2	doubling, 4	1	0.6931	1.0607	0.4271	0.5134
item*region2	doubling, 5	1	-0.4055	1.0992	0.1361	0.7122
item*region2	doubling, 6	1	-2.6391	0.9063	8.4787	0.0036
item*region2	doubling, 7	1	-2.0149	1.0165	3.9289	0.0475
item*region2	doubling, 8	1	-1.7918	1.1180	2.5683	0.1090
item*region2	doubling, 9	1	-4.6250	1.2815	13.0258	0.0003
item*region2	doubling, 10	1	0.4055	1.3017	0.0970	0.7554
item*region2	doubling, 11	0	0.0000	0.0000	.	.
item*region2	dubbing, 1	1	0.2007	1.3257	0.0229	0.8797
item*region2	dubbing, 2	1	-24.0660	144053.855	0.0000	0.9999
item*region2	dubbing, 3	1	0.3830	0.8799	0.1895	0.6634
item*region2	dubbing, 4	1	-0.1358	0.8197	0.0274	0.8684
item*region2	dubbing, 5	1	0.4520	0.9489	0.2269	0.6338
item*region2	dubbing, 6	1	3.0339	0.9035	11.2744	0.0008
item*region2	dubbing, 7	1	1.9924	0.9614	4.2952	0.0382
item*region2	dubbing, 8	1	2.9087	1.2745	5.2090	0.0225
item*region2	dubbing, 9	1	4.1325	1.2178	11.5150	0.0007
item*region2	dubbing, 10	1	0.4520	0.9489	0.2269	0.6338
item*region2	dubbing, 11	0	0.0000	0.0000	.	.
scale	0	1.00	0.0000	.	.	