

APPENDIX B – SUMMARY TABLE OF RESULTS

Legend					
NS – p > 0.1	ES – p < 0.1	* – p < 0.05	** – p < 0.01	*** – p < 0.001	**** – p < 0.0001

Authors (Year); Topic	Task/ condition (Ind. Var)	Driving Performance						Driver Behavior	Task				Subj. Load
		Long. Accel	Long Vel.	Lane Keep	Steer ing	Follow Dist.	Resp Time	Glance time	# glance	Road aware	Tot. Time	Perf	
Carter, Graham (2002) manual & voice controls for in- vehicle system	Concurrent Task (CT)			****			****				****	***	
	Modality			****			****				****		
	CT & Modality			***									
	Speech v. Manual			**			***				****		
	Age			***									
	Age & CT			**									
Faerber, Faerber, Meier- Arendt (1999) Speech route guidance, radio & phone	Manual Control [Young V. Old]								Y-2.94 O-3.43				
	Assistant (Other)???								Y-1.45 O-0.81				
	Speech Control (Other)??								Y-1.34 O-0.90				
Forlines, Schmidt- Nielsen, Raj, Wittenburg, Wolf (2005); Spoken v. Menu - Music Selection	“Speech in, List Out” vs. menu- driven			**			NS				**		
	Concurrent Task			*			*						
	Music Familiar- “Speech in, List Out”										***		
	Music Familiar- Multimodal										NS		

Authors (Year); Topic	Task/ condition (Ind. Var)	Driving Performance						Driver Behavior	Task				Subj. Load
		Long. Accel	Long Vel.	Lane Keep	Steering	Follow Dist.	Resp Time	Glance time	# glance	Road aware	Tot. Time	Perf	
Gärtner, König, Wittig (2001); Manual v. speech input - using an info system in traffic	Simple Task (Speech)										mean 24.6 (SD - 2.3)		
	Simple Task (Manual)										mean 12.8 (SD - 1.7)		
	Complex Task (Speech)										mean 74.4 (SD - 6.5)		
	Complex Task (Manual)										mean 58.7 (SD - 4.3)		
	Speech v. Manual		**	*									
Gellatly, Dingus (1998); Using speech to perform in vehicle tasks -	Manual v. & speech	***		**							****	***	
	Rec. Acc. (90, 75, 60%)	**		***							**	***	
	Rec. Err Type (reject & sub.)										**	***	
Graham, Carter (2001), Voice dialing	Manual v. & speech			***							**	NS	
	Speech combo v. speech audio											NS	
	Concurrent Task			****			****				****	NS	***
	Modality			****			*				****	**	*
	ASR Accuracy										*	NS	
	Modality and ASR Accuracy										**	NS	
Itoh, Miki, Yoshitsugu, Kubo, Mashimo (2004), Voice-activated system using a driving simulator -	Manual v. Voice							**					**
	Steering wheel vs. instr. panel												ES
	Voice vs. steer. wheel & panel												*
	Destination entry (Voice v. panel)			*									

Authors (Year); Topic	Task/ condition (Ind. Var)	Driving Performance						Driver Behavior	Task				Subj. Load
		Long. Accel	Long Vel.	Lane Keep	Steering	Follow Dist.	Resp Time	Glance time	# glance	Road aware	Tot. Time	Perf	
Jenness, Lattanzio, O'Toole, Taylor, Pax (2002), Manual v. voice-dialing during simulated driving -	Manual Dial v. No Dial			**							**		
	Voice Dial v. Manual (EM)			*							**		
	Age & No Dialing										*		
	Age & Manual Dial										*		
	Age & Voice Dialing										**		
Kojima, Uchiyama, Hoshino, Hongo (2001), Verbal interface for driving	No verbal v. free recall verbal task						*						
	No verbal vs. delayed digital recall verbal task						*						
Lee, Caven, Haake, Brown (2001), Speech interaction with email	No email vs. Email						**			NS			***
	Complexity of Env						**			*		NS	NS
	Email vs. road complexity						NS						
	Start vs. end of trial						NS						
	Start vs. end of exp.						NS			NS			NS
	Complexity of email system						NS			NS		***	*

Authors (Year); Topic	Task/ condition (Ind. Var)	Driving Performance						Driver Behavior	Task				Subj. Load
		Long. Accel	Long Vel.	Lane Keep	Steering	Follow Dist.	Resp Time	Glance time	# glance	Road aware	Tot. Time	Perf	
Manstetten, Krautter, Grothkopp, Steffens, Geutner (2001), Speech-controlled driver info. systems	Driving interaction w/Speech system (30 min)	2.4 errors per subj.		2.1 Errors per subj.									
	Driving interaction w/o speech system (30 min)	2.5 errors per subj.		4.0 Errors per subj.									
Mazzae, Ranney, Watson (2004), Phone interface (hand-held or hands free) on phone task performance & driver prefs.	Requiring additional steps vs. hand held											*	
	Interface										****		
	Age group										*		
	Interface and age group										*		
McCallum, Campbell, Richman, Brown (2004), Speech and in-vehicle telematics devices	No PDA							1.52s					25.15
	Speech PDA							1.73s					28.93
	Manual PDA (WL)							1.96s					35.81

Authors (Year); Topic	Task/ condition (Ind. Var)	Driving Performance						Driver Behavior	Task				Subj. Load
		Long. Accel	Long Vel.	Lane Keep	Steering	Follow Dist.	Resp Time	Glance time	# glance	Road aware	Tot. Time	Perf	
Ranney, Harbluk (2002), Voice technology & test track driving performance	Group 1 vs. group 2	Other					****	*			ES	***	
	Secondary task effect	CT				****	****				****		
	Secondary task & interaction with interface	CT				ES	**				*		
	Manual vs. Voice (EM)	EM				NS		*			*	NS	
Tsimhoni, Smith, Green (2002), Destination entry while driving: speech recognition v. touch-screen keyboard -	Driving WL: spelling (WL)										ES		****
	Driving WL: word (WL)												NS
	Keyboard vs. Speech			****	****								****
	Touch screen vs. Spelling (Parked) (EM)										****		
	Age: manual (Age)										****		
	speech vs. manual (Age)										****		
	Spelling vs. Word (EM)												*
	Curvature (WL)							NS			****		
	Age and WL (Age)							NS					
Age							****						